

	SURFACE VEHICLE RECOMMENDED PRACTICE	SAE J1939		REV. OCT2007
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Recommended Practice for a Serial Control and Communications Vehicle Network				

RATIONALE

New parameters, parameter groups and other assignments are reviewed and discussed by the Subcommittee on a regular basis. This SAE Recommended Practice has been updated to reflect all changes and additions approved and balloted through May 2006. This limited scope revision adds three source addresses (249, 250, and 251) to Table B2.

FOREWORD

This series of SAE Recommended Practices has been developed by the Truck & Bus Control and Communications Network Subcommittee of the Truck & Bus Electrical & Electronics Committee. The objectives of the subcommittee are to develop information reports, recommended practices and standards concerned with the requirements, design, and usage of ECUs which transmit electrical signals and control information among vehicle components. The usage of these Recommended Practices is not limited to truck and bus applications; other applications may be accommodated with immediate support being provided for construction and agricultural equipment, and stationary power systems.

These SAE Recommended Practices are intended as a guide toward standard practice and are subject to change so as to keep pace with experience and technical advances.

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Robert Bosch GmbH
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These Recommended Practices are being generated to continue the work accomplished by the SAE J1708, SAE J1587, and SAE J1922 Recommended Practices. The SAE J1939 series of Recommended Practices will offer a higher performance alternative to these earlier documents.

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1. SCOPE

These Recommended Practices are intended for light, medium, and heavy duty vehicles used on or off road as well as appropriate stationary applications which use vehicle derived components (e.g. generator sets). Vehicles of interest include, but are not limited to: on and off highway trucks and their trailers; construction equipment; and agricultural equipment and implements.

The purpose of these Recommended Practices is to provide an open interconnect system for electronic systems. It is the intention of these Recommended Practices to allow Electronic Control Units to communicate with each other by providing a standard architecture.

1.1 Degree of Openness

An SAE J1939 network is open to the degree that any two ECUs which conform to the same J1939/OX document can be connected via the network and communicate with each other without functional interference. The SAE J1939/OX documents describe a specific type of application, typically representing a specific industry to which it pertains such as agricultural or heavy duty trucks. ECUs which conform to a different SAE J1939/OX document may not be capable of communicating directly with one another and in some cases may cause degradation or complete disruption of the entire network.

1.2 Proof of Compliance

There is no procedure presently in place to test, validate, or provide formal approval for ECUs utilizing the J1939 network. Each developer is expected to design their products to the spirit of, as well as the specific content of, this recommended practice. Provisions are made in SAE J1939/11 and SAE J1939/12 for self certification to these documents. In the future, it is hoped that procedures will be defined and implemented to test new products to ensure full compliance with all appropriate SAE J1939 documents. Until that time, compliance will be honorarily determined. Should questions arise regarding the use or interpretation of any part of these recommended practices they should be directed to the SAE Control and Communications Subcommittee for resolution.

2. REFERENCES

2.1 Publications

SAE publications are available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

ISO publications are available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

SAE J1213	Glossary of Automotive Electronic Terms
SAE J1587	Recommended Practice for Electronic Data Interchange Between Microcomputer Systems in Heavy Duty Vehicle Applications
SAE J1708	Recommended Practice for Serial Data Communication Between Microcomputer Systems in Heavy Duty Vehicle Applications.
SAE J1922	Powertrain Control Interface for Electronic Controls Used in Medium and Heavy Duty Diesel On-Highway Vehicle Applications
ISO 7498	Information processing systems—Open systems interconnection (OSI)—Basic reference model
ISO 11898	Road vehicles—Interchange of digital information—Controller area network (CAN) for high speed communication, December 1992

ISO 11992 Road vehicles—Electrical connections between towing and towed vehicles—Interchange of digital information (Parts 1, 2, 3)

2.2 Definitions and Abbreviations

Definitions provided herein will supersede those contained in SAE J1213. SAE J1213 will otherwise apply throughout.

2.2.1 Definitions

Acknowledgment (ACK) — Confirms that the requested action has been understood and performed.

Address — The 8 bit field (or fields) used to define the source (and destination when applicable) of a message (e.g. engine, transmission, etc.).

Arbitration — The process by which one or more ECUs resolve conflicts in obtaining access to a shared network bus.

Bit Stuffing — A procedure used to assure the transmitted and received messages maintain a minimum number of dominant to recessive edges, and vice versa, to maintain the proper resynchronization within the string of bits in a CAN Data Frame. See CAN specification for a more detailed discussion.

Bridge — A device which stores and forwards messages between two SAE J1939 network segments. This permits changes in the media, the electrical interface, and data rate between segments. The protocol and address space remain the same on both sides of the bridge. Note that a bridge may selectively filter messages going across it so that the bus load is minimized on each segment.

Bus — See Segment.

CAN Data Frame — The ordered bit fields necessary to create a CAN frame used to convey data, beginning with an SOF and ending with an EOF.

Cyclic Redundancy Check (CRC) — An error control mechanism. A 15 bit cyclic redundancy check is performed for detecting transmission errors. Given a k -bit frame or message, the transmitter generates an n -bit sequence, known as a frame check sequence so that the resulting frame, consisting of $k + n$ bits is exactly divisible by some predefined number. The receiver then divides the incoming frame by the same number and, if there is no remainder, assumes that there was no error.

Data Field — A 0 to 64-bit field normally placed in a CAN data frame which contains the data as defined in the Application Layer (document SAE J1939/7X).

Data Page — One bit in the Identifier portion of the CAN Arbitration Field is used to select one of two pages of Parameter Group Numbers. This provides for the future growth of Parameter Group definitions. It also is one of the fields used to determine the Parameter Group Number which labels the data field of the CAN Data Frame.

Destination Address (DA) — This is a Protocol Data Unit (PDU) specific field in the 29 bit CAN identifier used to indicate the address of the ECU intended to receive the SAE J1939 message.

Device — A physical component with one or more ECUs and network connections.

Electronic Control Unit (ECU) — A computer based electronic assembly from which SAE J1939 messages may be sent or received.

End of Frame (EOF) — A 7 bit field marking the ending of a CAN data frame.

Extended Frame — A CAN data frame using a 29 bit identifier as defined in the CAN 2.0 specification.

Frame — A series of data bits making up a complete message. The frame is subdivided into a number of fields, each field containing a predefined type of data. See CAN Data Frame

Function — A capability of a vehicle system having one or more ECUs that are connected to a SAE J1939 bus segment of a Vehicle System. The function value is used in the 8 bit Function field in the 64 bit NAME entity (See SAE J1939/81, Section 4.1)

Gateway — This device permits data to be transferred between two networks with different protocols or message sets. The gateway provides a means to repackage parameters into new message groups when transferring messages from one segment to another.

Group Extension (GE) — This is a PDU specific field of a SAE J1939 CAN Data Frame that is used as part of the information necessary to determine the Parameter Group Number.

Identifier — The identifier portion of the CAN arbitration field.

Idle — A state on the CAN bus where no node is transmitting or attempting to transmit data.

Implement — A machine consisting of one or more ECUs which may be attached to or detached from the vehicle as a unit.

Media — The physical entity which conveys the electrical transmission (or equivalent means of communication) between ECUs on the network. For SAE J1939/11, the media consists of shielded twisted pair copper wires.

Message — A “message” is equivalent to one or more “CAN Data Frames” that have the same Parameter Group Number. For instance the information related to a single Parameter Group Number to be transferred on the bus may take several CAN data frames.

Multipacket Messages — A type of SAE J1939 message which is used when more than one CAN data frame is required to transmit all data specific to a given Parameter Group Number. Each CAN data frame will have the same identifier but will contain different data in each packet.

NAME - An 8 byte value which uniquely identifies the primary function of an ECU and its instance on the network. A device's NAME must be unique, no two devices may share the same NAME value on a given vehicle network.

Node — A specific hardware connection of an ECU to the physical media. A specific node may have more than one address claimed on the network.

Non-Volatile — Retention of changeable memory values even though power is turned off for any reason. This term is used with respect to data values, such as ECU addresses or NAMES, that are changed during use. Read Only Memory (ROM) is technically non-volatile, but is not changeable during use and thus not what is referred to in these documents.

Negative-Acknowledgment (NACK) — A response which indicates that a message has not been understood or a requested action could not be performed.

Packet — A single CAN data frame. This can also be a message if the Parameter Group to be transferred can be expressed in one CAN data frame.

Parameter Group (PG) — A collection of parameters that are conveyed in a SAE J1939 message. Parameter Groups include commands, data, requests, acknowledgments, and negative-acknowledgments. The PG identifies the data in a message, regardless of whether it is a single packet or multipacket message. Parameter Groups are not dependent on the source address field thus allowing any source to send any Parameter Group.

Parameter Group Number (PGN) — A three byte, 24 bit, representation of the Reserved Bit, Data Page, PDU Format, and GE fields. The Parameter Group Number uniquely identifies a particular Parameter Group.

PDU Format (PF) — An 8 bit field in the 29 bit identifier that identifies the PDU format and is used in whole or in part to provide a label for a Parameter Group. It also is one of the fields used to determine the Parameter Group Number which labels the data field of the CAN Data Frame.

PDU Specific (PS) — An 8-bit field in the 29 bit identifier whose definition depends upon the value of the PDU Format field. It can be either a destination address (DA) or Group Extension (GE). It also is one of the fields used to determine the Parameter Group Number which labels the data field of the CAN Data Frame.

PDU1 Format — A PDU format used for messages that are to be sent to a destination address (DA). The PS field contains the destination address (specific or global).

PDU2 Format — A PDU format used to send information that has been labeled using the Group Extension technique. This PDU does not contain a destination address. The PS field contains the Group Extension in the case of PDU2 formats.

Preferred Address — The address that an ECU will attempt to use first when claiming an address. Preferred Addresses are assigned by the committee.

Priority — A 3-bit field in an identifier that establishes the arbitration priority of the information communicated. The highest priority is zero and the lowest priority is seven.

Protocol Data Unit (PDU) — A PDU is a SAE J1939 specific CAN Data Frame format.

Remote Transmission Request (RTR) — A feature of the CAN protocol allowing an ECU to request that another ECU or ECUs send a message. This feature of CAN is not used in SAE J1939. An alternate request mechanism is specified for SAE J1939.

Repeater — An ECU which regenerates the bus signal onto another segment of media. This permits the network to connect more electrical loads (ECUs) onto the bus, or to connect to another type of media (Physical Layer Expansion). The speed (data rate), protocol (data link layer), and address space are the same on both sides of the repeater. For SAE J1939, any delays in regenerating the data signal must be kept to a very small fraction of one bit interval.

Reserved Bit — A bit in a SAE J1939 29 bit identifier reserved for future definition by SAE. It also is one of the fields used to determine the Parameter Group Number which labels the data field of the CAN Data Frame.

Router — An ECU which allows segments with independent address spaces, data rates, and media to exchange messages. A router may permit each segment to operate with minimum bus loading yet still obtain critical messages from remote segments. The protocol remains the same across all segments. Note that the router must have look up tables to permit the translation and routing of a message with ID X on segment 1 to ID Y on segment 2.

Segment — The physical media and attached nodes of a network not interconnected by network interconnection ECUs. A single segment of a network is characterized by all of the ECUs “seeing” the signal at the same time (i.e., there is no intermediate ECU between electrical sections of the network). Multiple segments can be connected together by network interconnection ECUs including repeaters, bridges, and routers.

Source Address (SA) — An 8-bit field in the 29 bit identifier which allows for the unique identification of the source of a message. The SA field contains the address of the ECU that is sending the message.

Standard Frame — A CAN data frame using an 11 bit identifier as defined in the CAN 2.0b specification.

Start of Frame (SOF) — The initial bit in a CAN frame serving only to indicate the beginning of the frame.

Subnetwork — This refers to the network activity (message traffic) on a specific SAE J1939 segment when multiple segments are used. Subnetworks may include: Tractor, Trailer, Implement, and Braking System. Note that they may be separated by a bridge or router to minimize total bus loading. Collectively the subnetworks are the SAE J1939 Vehicle Network.

Vehicle — A machine which, in most applications, includes a capability to propel itself and includes one or more SAE J1939 segments. A vehicle may be assembled of one or more Vehicle systems which are connected together to form the whole vehicle.

Vehicle System — A subcomponent of a vehicle, or a component that is analogous to a subcomponent of a vehicle, that includes one or more SAE J1939 segments and may be connected or disconnected from the vehicle. A Vehicle System may be made up of one or more Functions, which have ECU's that are connected to a SAE J1939 segment of the Vehicle System.

2.2.2 Abbreviations

ABS	Antilock Braking System
ACK	Acknowledgment
AP	Accelerator Pedal
ASR	Acceleration Slip Regulation (Traction Control)
ASCII	American Standard Code for Information Interchange
CAN	Controller Area Network
Con-Ag	Construction-Agriculture Industry
CRC	Cyclic Redundancy Check
DA	Destination Address
DLC	Data Length Code
DP	Data Page
ECU	Electronic Control Unit
EOF	End of Frame
GE	Group Extension
ID	Identifier
IDE	Identifier Extension Bit
LLC	Logical Link Control
LSB	Least Significant Byte or Least Significant Bit
MAC	Medium Access Control
MID	Message Identifier
MSB	Most Significant Byte or Most Significant Bit
NA	Not Allowed
NA	Not Available
NACK	Negative-Acknowledgment
OSI	Open System Interconnect
P	Priority
PDU	Protocol Data Unit
PF	PDU Format
PG	Parameter Group
PGN	Parameter Group Number
PID	Parameter Identifier
PS	PDU Specific
PS_GE	PDU Specific - Group Extension
PS_DA	PDU Specific - Destination Address
PTO	Power Take-Off
R	Reserved
RTR	Remote Transmission Request
SA	Source Address
SID	Subsystem Identifier
SLOT	Scaling, Limits, Offset, and Transfer Function
SOF	Start of Frame
SPN	Suspect Parameter Number
SRR	Substitute Remote Request
un	Undefined

2.3 References to the OSI Model

The Open System Interconnect (OSI) model was developed by the International Organization for Standardization (ISO) in 1984 as a model of a computer communications architecture. There are seven layers to the OSI model as shown in Figure 1. The intent is that protocols be developed to perform the functions of each layer as needed. SAE J1939 is structured into several parts based on this ISO Model. While there is a SAE J1939 document allocated to each layer, not all of them are explicitly identified by having their own SAE J1939 document. Some of the layers not having their own documents are supported by functionality included within other documents.

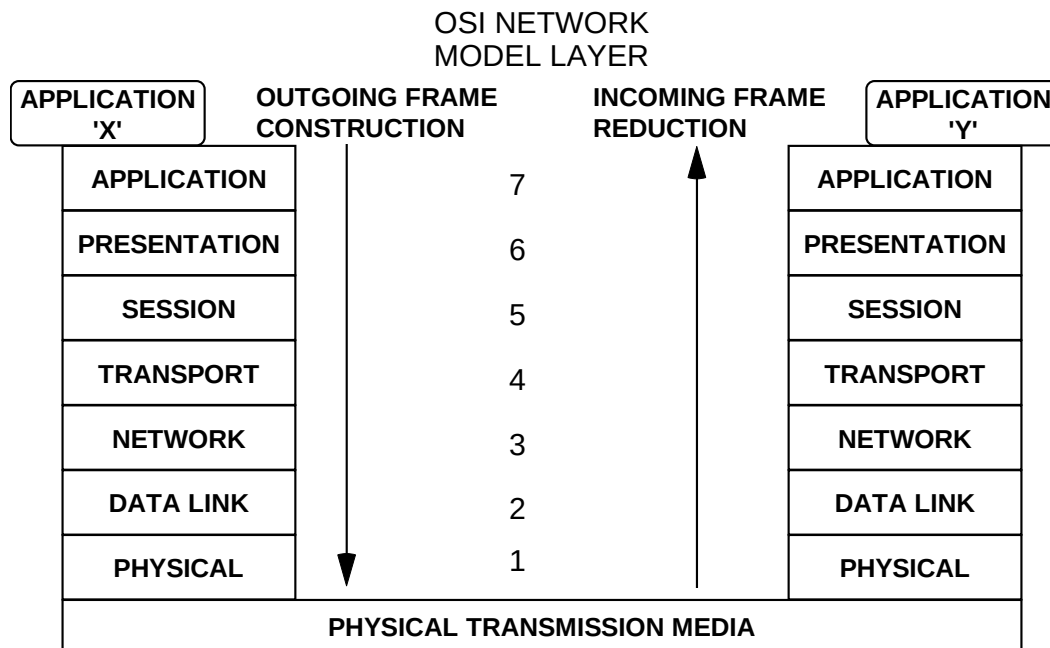


FIGURE 1 - THE OSI SEVEN LAYER MODEL

The functionality of each layer is:

1. Physical — Concerns the transmission of structured bit stream over physical media; deals with the mechanical, electrical, functional, and procedural characteristics to access the physical media
2. Data Link — Provides the reliable transfer of information across the physical layer; sends blocks of data (frames) with the necessary synchronization, error control, sequence control, and flow control;
3. Network — Provides upper layers with independence from the data transmission and switching technologies used to connect systems; responsible for establishing, maintaining, and terminating connections;
4. Transport — Provides reliable, transparent transfer of data between end points; provides end-to-end error recovery and flow control; provides segmentation and reassembly of very large messages;
5. Session — Provides the control structure for communication between applications; establishes, manages, and terminates connections (sessions) between cooperating applications;
6. Presentation — Provide independence to the application process from differences in data representation (syntax); and
7. Application — Provides access to the OSI environment for users and also provides distributed information services.

The purpose of the OSI model is to provide a common basis for coordinating standards development by placing them within the perspective of the overall model. Any resulting standard, such as SAE J1939, is not required to be explicitly partitioned into these seven layers as long as the fundamental functionality is supported. In addition, the hardware and software which perform the functions of each layer need not be rigidly defined such that each layer is recognizable within the system design. The distinction between layers can become totally obscured upon allocating these functions to a specific system design. In reviewing the SAE J1939 layer documents, it can be seen that some SAE J1939 layers include some functions normally associated with other OSI layers. This usually occurs when a layer may not require, or justify having, a standalone document of its own.

Because the SAE J1939 network is a specific communications system, supporting specific sets of applications and a specific industry, rather than being generalized, not all of the OSI layers are required. Only those layers which are required for the anticipated SAE J1939 uses will be defined, with a separate document being used for each of these layers.

2.4 Documentation Structure and Guide

This SAE J1939 document is merely the top level of a hierarchy of related documents. A separate document, identified as SAE J1939/N, has been defined for each application of the network and for each of the seven OSI model layers. To accommodate multiple versions of any one layer, a second slash digit (X) is used to identify the version of a document. Thus to determine the total network definition for a particular application, such as for North American agricultural equipment, one must obtain the top level application document, SAE J1939/02, which identifies all of the layer versions used, and then obtain each of these individual layer documents. The presently defined documents and numbering system are as follows:

J1939	This top level document describes the network in general, the OSI layering structure, the subordinate document structure, and provides control for all preassigned values and names.
J1939/0X	An application document, where X refers to a specific network/application version of the network. This document will identify the industry or applications for which it pertains and will list the specific versions of each layer that makes up this network.
J1939/01	Truck and Bus Control and Communications Network.
J1939/02	(Draft) Agricultural Equipment Control and Communications Network.
J1939/1X	A Physical Layer document, where X refers to a specific version of the Physical Layer.
J1939/11	Physical Layer, 250K Bits/sec, Shielded Twisted Pair.
J1939/12	(Draft) Physical Layer, 250K Bits/sec, Twisted Quad.
J1939/13	Physical Layer, Diagnostic Connector
J1939/15	(Draft) Reduced Physical Layer, 250K bits/sec, Unshielded Twisted Pair (UTP)
J1939/21	Data Link Layer (no alternative versions permitted)
J1939/3X	Network Layer document, where X refers to a specific version of the Network Layer.
J1939/31	Network Layer,
J1939/4X	Transport Layer document, where X refers to a specific version of the Transport Layer. No Transport Layer documents are presently defined.
J1939/5X	Session Layer document, where X refers to a specific version of the Session Layer. No Session Layer documents are presently defined.
J1939/6X	Presentation Layer document, where X refers to a specific version of the Presentation Layer. No Presentation Layer documents are presently defined.
J1939/7X	Applications Layer Document, where X refers to a specific version of the Application Layer.
J1939/71	Vehicle Application Layer.
J1939/72	(Draft) Virtual Terminal Application Layer.
J1939/73	Application Layer - Diagnostics.
J1939/74	Application – Configurable Messaging
J1939/75	Application Layer-Generator Sets and Industrial
J1939/81	J1939 Network Management Protocol (no alternative versions permitted).
J1939/82	(Draft) Compliance

Document numbers have been assigned to all seven of the OSI model layers even though they are not all specifically defined within the present definition of SAE J1939. This was done in part to provide an easily recognizable relationship between the documents and the OSI model and also to provide growth capabilities should it be determined later that such documents are needed. SAE J1939/81, Network Management, is kept separate as it represents a vertical slice through all of the layers and is thus best explained and understood as an individual subject rather than include a subset of network management within each of the affected layers.

Multiple application layer documents may be utilized simultaneously on the same network and thus must maintain compatibility. An example of such a system is a piece of agricultural equipment that utilizes both SAE J1939/71 for the majority of communications and SAE J1939/72 for the display terminal communications, both sets of messages being carried over the exact same network. A single vehicle/application may also utilize different physical layers within the same system but they need not be compatible if on different segments. An example is on-highway trucks where the physical layer used to connect the tractor to the trailer may be different than that used on the tractor itself.

3. TECHNICAL REQUIREMENTS

Beyond being an introduction to the full set of SAE J1939 documents, this document is meant to aid those unfamiliar with SAE J1939 by answering the most basic questions of:

- How SAE J1939 is intended to work
- How to construct and process messages (transmit and receive)
- How to design an ECU to support SAE J1939
- How typical control sequences are done (application examples)
- How a typical network is wired

3.1 SAE J1939 Tutorial

The following tutorial is for the Truck and Bus Control and Communications Network as specified in SAE J1939/01. SAE J1939/01 is used in this tutorial as a typical example, and not to infer that all applications must follow SAE J1939/01. Other applications may elect to utilize alternative versions of one or more layers resulting in corresponding changes to the following discussion. This section is offered as a means of illustrating and clarifying the network, not as a definition of it. See the individual sub documents, SAE J1939/0X to SAE J1939/81 for the correct definition and specification of each aspect of the network.

3.1.1 Introduction

J1939 is a high speed communications network designed to support real-time closed loop control functions between ECUs which may be physically distributed throughout the vehicle. SAE J1708/SAE J1587 is an older, widely used low speed network intended to provide simple information exchange, including diagnostic data, between ECUs. SAE J1939 is capable of performing all of the functions of SAE J1708/SAE J1587 as well as the control system support. Any one application may utilize one or the other or both of these networks.

J1939 uses the CAN protocol which permits any ECU to transmit a message on the network when the bus is idle. Every message includes an identifier which defines the message priority, who sent it, and what data is contained within it. Collisions are avoided due to the arbitration process that occurs while the identifier is transmitted (using a non-destructive arbitration scheme). This permits high priority messages to get through with low latency (delay) times because there is equal access on the network for any ECU, but when multiple ECUs are simultaneously attempting to transmit, the highest priority message prevails.

3.1.2 Message Format and Usage (SAE J1939/21 for 29 Bit Identifier)

J1939 provides a complete network definition using the 29 bit identifier (CAN Extended Frame) defined within the CAN protocol shown in Figure 2. SAE J1939/21 enables 11 bit identifier (CAN Standard Frame) devices to be used within the same network, defining all messages as proprietary, permitting both device types to coexist without interference. The 11 bit identifier definition is not directly a part of SAE J1939 but is included to assure that users of it can coexist on the same network without conflict. SAE J1939 will not provide any further definition of the use of the 11 bit identifier. The CAN Data Frame Bits SOF, SRR, IDE, and RTR bits will not be discussed in the following description (see SAE J1939/21 and ISO 11898). The first 3 bits of the 29 bit identifier are used for determining message priority during the arbitration process. A value of 000 has the highest priority. Higher priority messages would typically be used for high speed control messages. An example of this is the torque control message from the transmission to the engine (see SAE J1939/71). A lower priority would be used for data which is not time critical. An example of this is the engine configuration message. The priority field may be programmable for each message type so that network tuning can be performed by an OEM if necessary.

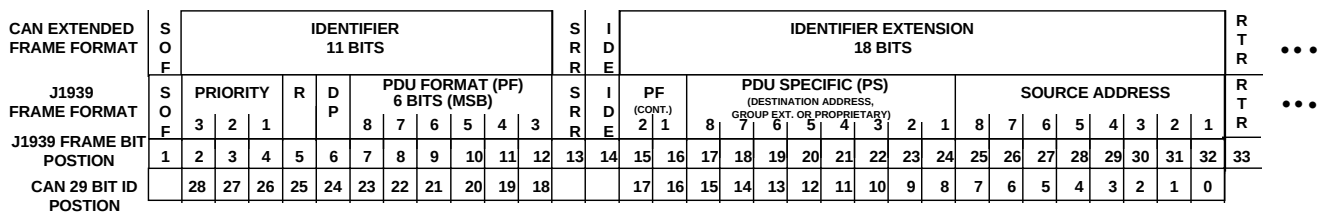


FIGURE 2 - THE SAE J1939 29 BIT IDENTIFIER

The next bit of the identifier is reserved. The bit should be set to 0 for transmitted messages. This default will permit future use of the bit for other purposes as defined by the SAE committee.

The next set of 9 bits in the identifier is the Data Page (DP) bit and PDU Format (PF) field. PDU stands for Protocol Data Unit (i.e. Message Format). The DP bit is used as a page selector. Page 0 contains all the messages which are presently being defined. Page 1 provides additional expansion capacity for the future, to be assigned after page 0 has been completed. The PF field identifies one of two PDU formats able to be transmitted. PDU Formats are described in SAE J1939/21, Section 3.3. The SRR and IDE bits are entirely defined and controlled by CAN and therefore not described or modified by SAE J1939.

The next 8 bits of the identifier are PDU Specific (PS), meaning that they are dependent on the value of the PF. If the PF value is between 0 and 239 (PDU1), this PS field contains a destination address. If the PF field is between 240 and 255 (PDU2), the PS field contains a Group Extension (GE) to the PDU Format. The Group Extension provides a larger set of values to identify messages which can be broadcast to all ECUs on the network.

Most messages on SAE J1939 are intended to be broadcast using the PDU2 format. Data transmitted on the network using PDU2 format cannot be directed to a specific destination. When a message must be directed to a particular ECU, it must have been assigned a PGN in the PDU1 format range of numbers so a specific destination address can be included within the identifier of the message. An example of this is the transmission commanding a specific torque value from the engine or a specific torque value from a retarder. Requiring a destination must be considered when the Parameter Group is first defined and published by the SAE committee (see SAE J1939/21).

Collectively, the Reserved bit, Data Page, PF, and PS values define the PG being transmitted. These PGs have definitions which include the parameter assignments within the 8 byte data field of each message as well as the transmission repetition rate and priority. The term "Parameter Group" is used because they are groups of specific parameters. Parameter Groups are identified by a Parameter Group Number (PGN), which uniquely identifies each Parameter Group. The PGN structure permits a total of up to 8672 different Parameter Groups to be defined per page. Parameter Groups and Parameter Group Numbers are described in SAE J1939/21 and current assignments are listed in Appendix A.

The last 8 bits of the identifier contain the address of the ECU transmitting the message (Source Address). For a given network, every address must be unique (254 available). Two different ECUs cannot use the same address at the same time. The PGNs are independent of the Source Address, thus any ECU can transmit any message.

3.1.3 Addresses and NAME (SAE J1939/81 and Appendix B)

Each ECU on the network will have at least one name and one address associated with it. There are examples, such as an engine and engine retarder residing in a common ECU, wherein multiple names and multiple addresses may coexist within a single electronics unit. The address of an ECU defines a specific communications source or destination for messages, the name includes identification of the primary function performed at that address and adds an indication of the instance of that functionality in the event that multiple ECUs with the same primary function coexist on the same network. As many as 254 different ECUs of the same function can coexist on the network, each identified by their own address and name.

To uniquely name each ECU, SAE J1939 defines a 64 bit NAME consisting of the fields shown in Table 1. The Function Instance, ECU Instance, and Identity Number fields permit multiple ECUs of the same make and model to coexist on the same network but still have unique NAMES for each. See SAE J1939/81 for a full description of ECU naming and address assignment and Appendix B for current committee assignments.

TABLE 1 - NAME FIELDS

Arbitrary Address Capable	Industry Group	Vehicle System Instance	Vehicle System	Reserved	Function	Function Instance	ECU Instance	Manufacturer Code	Identity Number
1 bit	3 bit	4 bit	7 bit	1 bit	8 bit	5 bit	3 bit	11 bit	21 bit

NAMES identify the primary vehicle function or functions which an ECU performs and uniquely identify each ECU, even when there are more than one of the same type on the network. But with a length of 64 bits, a NAME is inconvenient to use in normal communications. Therefore, once the network is fully initialized, each ECU utilizes an 8 bit address as its source identifier or "handle" to provide a way to uniquely access a given ECU on the network. For example, an engine may be assigned address 0, but if a second engine is present, it needs a separate, unique address (e.g. 1) and instance. ECUs that accept destination specific commands may require multiple addresses. This permits distinguishing which action is to occur. For example, if the transmission is commanding a specific torque value from the engine (address 0), this must be differentiated from commanding a specific torque value from the engine brake (retarder)(address 15). As can be seen by this example, a single ECU on the network may have multiple addresses and each address will have an associated NAME. To facilitate the initialization process of determining the address(es) for each ECU on the network, commonly used devices have Preferred Addresses assigned by the committee (Preferred Addresses are listed in Tables B2 - B9). Using the Preferred Addresses minimizes the frequency of multiple devices attempting to claim the same address.

In general, most ECUs will use their Preferred Addresses immediately upon power up. A specific procedure (defined in SAE J1939/81 and elaborated on in SAE J1939/01) for assigning addresses after powerup is used to resolve any conflicts that may occur. Each ECU must be capable of announcing which address(es) it intends to use. This is the address claim feature. Two options are available:

1. Upon power-up and whenever requested, an ECU must send an Address Claimed message to claim an address. When an ECU sends the Address Claimed message, all ECUs record or compare this newly claimed address to their own table of addresses on the network. Not all ECUs are required to maintain such a table, but all must at least compare the newly claimed address with their own. Should multiple ECUs claim the same address, the one having the lowest value NAME uses this address and the other(s) must claim a different address or stop transmitting on the network.

2. An ECU may send a request for Address Claimed message to determine addresses claimed by other ECUs. When an ECU sends a request for Address Claimed, all requested ECUs then send their Address Claimed messages. This permits transitional ECUs (tools, trailers, etc.) or ECUs powering up late to obtain the current address table so that an available address can be found and claimed or to determine which ECUs are currently on the network. This approach permits the option of self-configurable addresses for those ECUs which may need it, but does not make this a requirement for all ECUs. Self-configurable addressing is optional; those ECUs which might be expected to encounter address conflicts are recommended to support this capability.

When an address conflict has been detected, the following four options are available, depending upon the capabilities of the ECU involved:

Self-Configurable ECUs — a self-configurable ECU is capable of dynamically computing and claiming an unused address. Most service tools and bridges will have this capability.

Command Configurable ECUs — A network interconnection ECU, such as a bridge, or a service tool may command another ECU to use a given address. The ECU having the unclaimable address would then issue an Address Claimed message to acknowledge acceptance of this new commanded address. The ECU may be commanded to accept a new address even though it has already claimed a valid address.

Service Configurable ECUs — ECUs which are modifiable by service personnel, usually by the means of DIP switches or a service tool. When "commanded address" messages are used, this option differs from the Command Configurable in that a service tool is required and will often use proprietary techniques.

Non-Configurable ECUs — Those ECUs that are neither self-configurable nor reprogrammable would have to cease transmitting if they fail to claim a valid address.

3.1.4 Communication Methods

Three primary communication methods exist within SAE J1939 and appropriate use of each type allows effective use of the available Parameter Group Numbers. The three communications methods are:

Destination specific communications, using PDU1 (PF values 0 - 239) (includes the use of the global destination address - 255)

Broadcast Communications using PDU2 (PF values 240 - 255)

Proprietary Communications using either PDU1 or PDU2 format

Each of the communications methods has an appropriate use. Destination specific Parameter Group Numbers are needed where the message must be directed to one or another specific destination and not to both. SAE J1939 currently defines a torque control message which may be sent to an engine or retarder. In the case of more than one engine, this message must be sent only to the desired engine and a destination specific Parameter Group Number is needed and has been assigned.

Broadcast Communications apply in several situations, including:

Messages sent from a single or multiple sources to a single destination

Messages sent from a single or multiple sources to multiple destinations

Broadcast Communications cannot be used where a message must be sent to one or another destination and not to both.

The third communications method in SAE J1939, proprietary communications, is provided by the use of two proprietary Parameter Group Numbers. A Parameter Group Number has been assigned for broadcast proprietary communications and a Parameter Group Number has been assigned for destination specific proprietary communications. This allows for two functions. One, a specific source can send its proprietary message in a PDU2 type format (broadcast). Two, it allows for situations where a service tool must direct its communication to a specific destination out of a possible group of ECUs. For instance this case arises when an engine uses more than one controller but the service tool must be able to perform calibration/reprogramming while all ECUs are connected to the same network. In this case the proprietary protocol needs to be destination specific. Note that the destination ECU must be capable of properly interpreting the proprietary data.

Proprietary communications are useful in two situations:

Where it is unnecessary to have standardized communications

Where it is important to communicate proprietary information

3.1.5 Transmitting Messages (Using SAE J1939/21 and SAE J1939/7X)

In addition to the 29 bit identifier shown in Figure 2, a CAN Data Frame includes a 6 bit control field, a data field which is typically 8 bytes, and terminates with CRC, ACK, and EOF fields. To send a particular data item, a message must be constructed by properly filling each of these fields. This is done by first referencing the applicable SAE J1939 documents. This process will define the Parameter Group Number (PGN) to use, the message update (transmission) rate, and default priority. Since multiple data items are typically packed together within a message, it will also define the data field format. Note that when the ECU does not have data available for a given parameter it sets those bits to "not available" so that a receiver knows that the data is not provided.

Parameter Groups which have more than eight bytes of data must be sent as multipacket messages using the Transport Protocol functions defined in SAE J1939/21 Section 3.10.

3.1.6 Receiving Messages (Using SAE J1939/21 and SAE J1939/7X)

There are various techniques (and electronic ICs) available for capturing selected messages off the network. Several general observations can be made however regarding received messages.

1. If it is a destination specific request or command, the ECU must determine if there is an address match between itself and the incoming messages' destination address. If there is, it must process the message and provide some type of acknowledgment.
2. If a message is a global request, every ECU, even the originator, must process it and respond if the data is available.
3. If a message is broadcast, each ECU must determine if it is relevant or not.

3.1.7 ECU Design (Using SAE J1939/11, SAE J1939/21, and SAE J1939/7X)

Although every manufacturer will have different performance requirements for the ECU contained within their product, several observations should be made regarding the resources needed to support SAE J1939. The current data rate of SAE J1939/11 is 250 kbps (400 μ S/bit). A typical message containing 8 data bytes is 128 bits long (excluding bits used for bit stuffing) which is approximately 0.5 ms. The shortest message is 64 bits long. This means that a new message could be present every 250 microseconds. Even though not every message is relevant, nor is the bus loading likely to be above 50%, the receiving processor must still be able to handle (or buffer) multiple back to back messages. This will require some RAM space as well as processor time for the memory transfers. The requirement is that no messages should be lost due to ECU hardware or software design limitations.

3.1.8 Network Topology — SAE J1939/01 Using Physical Layer SAE J1939/11 and Network Layer SAE J1939/31

The SAE J1939/01 network defines a system containing one or more segments connected by network interconnecting ECUs. Each SAE J1939 segment consists of a single, linear, shielded twisted pair of wires running around a section of the vehicle to each ECU. A short stub is permitted to connect this "bus" to each ECU. This simplifies the routing of the main bus wiring by not requiring it to come in direct proximity with each ECU. The linear bus is necessary at a data rate of 250 Kbps in order to minimize reflections of the electrical signals. The termination resistor at each end of the bus also reduces reflections. To support a tractor pulling one or more trailers, and the frequent removal and addition of new trailers, a separate SAE J1939 segment (subnetwork) is used within the tractor and in each trailer or dolly.

The SAE J1939 network may thus be composed of multiple segments, with a network interconnection ECU (bridge) between them. These segments need not be directly compatible with each other, as they may operate at different data rates or use different physical media. For example, a bridge provides electrical isolation between segments, provides initialization support for the subnetwork connected to it, and can provide message filtering to prevent unnecessary message traffic on the subnetworks. In the event of a bus failure on the wires exposed between the tractor and trailer, the main SAE J1939 subnetwork on the tractor will continue to function.

3.2 Preassigned Values

Application specific parameters and Parameter Groups are defined in the SAE J1939/7X documents. Parameter Groups that are used for control and management of the network are defined in SAE J1939/21, SAE J1939/31, and SAE J1939/81. Assignments for Preferred Addresses, NAME elements, and Parameter Group Numbers are maintained in the appendices to this document. Each of these items are described in this section. The actual values that have been assigned are listed in the Appendices. If new values are required that are not already assigned, developers may request new values to be assigned by the SAE Control and Communications Network Subcommittee. See Appendix D for information on making a request. Users of the documents should assure that this base document is newer or has the same revision date as the particular application document they are using to avoid making requests that are obsolete at the time of submittal.

3.2.1 Parameter Group Numbers

Parameter Group Numbers are assigned specifically to use either PDU1 format or PDU2 format (PDU types are described in Section 3.1.2 and in SAE J1939/21, Section 3.3). Once assigned to a format the other PDU type is not available for that Parameter Group. The assignment of a Parameter Group Number should be done keeping in mind the following characteristics: priority, update rate, importance of the data in the packet to other ECUs, and length of the data associated with the Parameter Group. Appendix A includes a template for assigning Parameter Group Numbers and the current assignments.

Parameter Group Numbers are assigned linearly to the various sections of the Parameter Group list in Appendix A based on the criteria provided on the Parameter Group Request form (Appendix D).

Much of the communications between ECUs constructed by a single manufacturer do not require standardization. The information that is communicated is not generally useful to other ECUs on the network. In this situation the proprietary Parameter Groups can be used. The use of standardized communications is preferred and should be used whenever practical, however the proprietary option is offered as a means of solving unique problems and situations.

If proprietary information is being communicated, or the information to be communicated is not of general interest, the proprietary method should be used. If the information is of general interest and does not require direction of the message to a particular ECU, a Parameter Group Number utilizing the PDU2 broadcast format should be sought. Finally, if the information is of general interest but requires direction to one or another ECUs then destination specific addressing is needed and a PDU1 format Parameter Group Number should be sought. Proprietary and PDU1 communications methods should be considered carefully and used sparingly.

3.2.2 Data Field Grouping

Minimizing message overhead with CAN based systems requires full use of the data fields of messages. Except in the case of very time critical messages, parameters should be grouped to fill the 8 byte data field. Following this principle conserves PGNs for future assignment and allows for minimum network loading when all data bytes are known by and sent from the same address. Strong justification is needed to allow definition of Parameter Group Numbers that result in sparsely used data fields.

Parameters should be grouped as follows:

1. By common subsystem (the ECU likely to measure and send the data)
2. With similar update rates (to minimize unnecessary overhead)
3. By function (Oil, Coolant, Fuel, etc.)

It should be recognized that, while these are guidelines, in most cases when parameters are grouped together they will end up violating one or more of the above rules. Since all parameters defined in SAE J1939 have a technique for identifying when they are not available it is not critical that all of the parameters in one Parameter Group come from the same ECU. If a new parameter is defined and there are spare bytes or bits in an existing Parameter Group, then it can be easily added there. When the update rate is fast, it is desirable to make sure that a Parameter Group is as fully utilized as possible (i.e. uses all 8 data bytes) before defining another PG and preferable that all parameters are normally coming from one specific ECU.

For the slower update rate data it is not as critical that all of the parameters in a Parameter Group come from the same ECU. Even though it is desirable to have parameters come from one ECU, the intention of SAE J1939 is to provide a means for communicating the data and not dictating which ECU is to send what data.

3.2.3 NAME Systems and Functions

A Function is a capability of a component or group of components served by one or more ECUs. The Function of each ECU is identified within an 8 bit field of that ECU's NAME. As there may be multiple ECUs which identify themselves with the same Function, the Function Instance field of NAME is used to distinguish between them. The same Function value (upper 128 only) may mean different things for different Industry Groups or Vehicle Systems, therefore the Function (upper 128 only) identification is dependent upon the Industry Group, and the Vehicle System as shown in Figure 3 (see SAE J1939/81 Section 4.1.12).

A Vehicle System is a subcomponent of a vehicle or an analogous component that includes one or more SAE J1939 network segments and may be connected or disconnected from the total vehicle. A Vehicle System may be made up of one or more Functions, which have ECUs that are connected to a SAE J1939 network segment of that Vehicle System. A typical on-highway Vehicle System is a tractor or trailer. Because the definition of Vehicle Systems will vary from one industry to another, the System definition is dependent upon the Industry Group as shown in Figure 3 (see SAE J1939/81 Section 4.1.12).

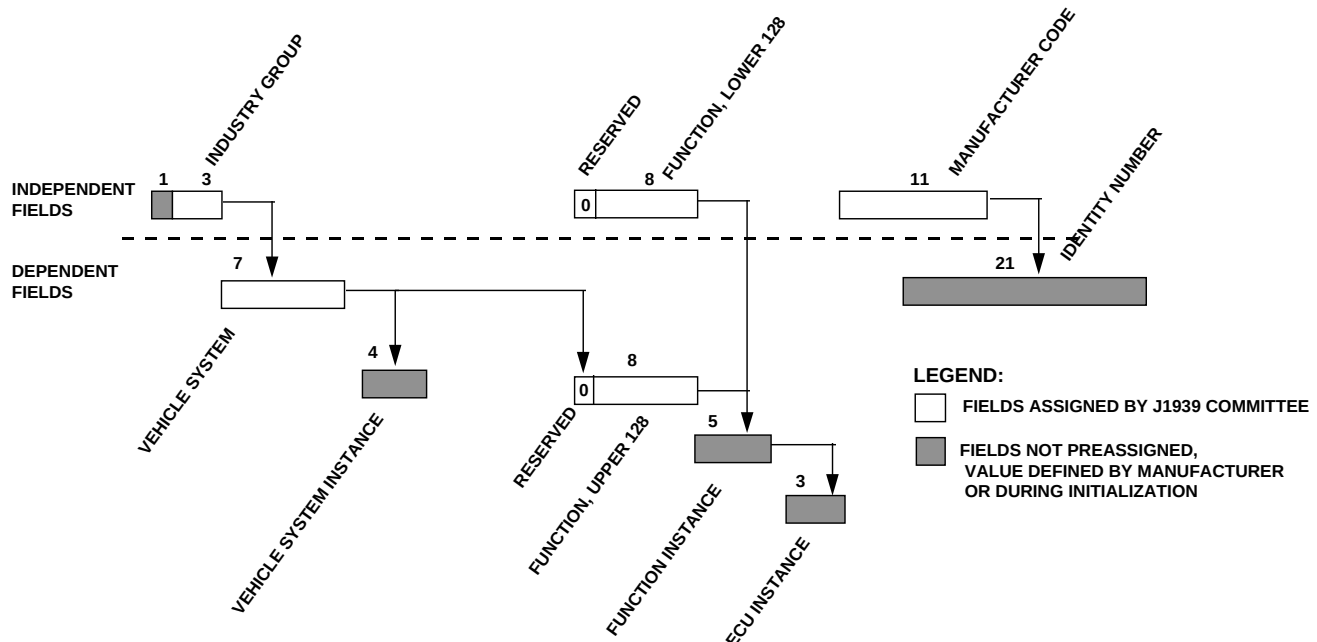


FIGURE 3 - DEPENDENCIES IN THE NAME FIELDS

A single ECU on the network may combine multiple Functions, and would then have the option to claim a separate address for each supported function. The assigned Vehicle System and Function values are listed in Appendix B, Tables B11 and B12.

3.2.4 Industry Group

To permit multiple industries to use SAE J1939, an Industry Group code is used to identify the industry to which the ECU is associated. Code 0 is a special category of Industry Group in that it identifies Preferred Addresses and NAMEs that are common to all industries. Any ECU which may be used in more than one industry application, such as diesel engines, should have NAMEs and Preferred Addresses within this global group. It is the responsibility of those requesting new definitions to consider if this may be the case, and to request the new definition in the correct group. To avoid running out of NAME or address values, it is requested that global values be used only when truly applicable, if an ECU may exist in only one group, such as agricultural equipment, it would be preferable to add the definition to the applicable group rather than to use a global value. Industry Group codes are listed in Appendix B, Table B1.

3.2.5 Manufacturer Code

As defined in SAE J1939/81, the NAME convention includes a Manufacturer Code, permitting a unique Identity Number to be a part of the full name. This Identity Number is assigned by the manufacturer and can be an individual ECU's serial number if desired. To enable the Identity Numbers to be unique to a given manufacturer, all manufacturers using SAE J1939 are assigned a code. The Manufacturer's Code numbers are listed in Appendix B, Table B10. A manufacturer is permitted to have multiple codes, such as when there are multiple divisions or major product lines. Having a unique Manufacturer Code for each individual product would be discouraged as this would quickly exhaust the range of available codes. There are 21 bits available in the Identity Number field of NAME, permitting the manufacturer to include a reference to each particular product if desired.

3.2.6 Preferred Address

The number of addresses within a given system cannot exceed 254 (null and global cannot be claimed by devices). Most ECUs that operate on a SAE J1939 network will have an assigned Preferred Address that the ECU may use. If the ECU's Preferred Address has been claimed or is in use by another ECU on the network, the conflict will be resolved using the procedures outlined in Section 3.1.3 and detailed in SAE J1939/81 Sections 4.2 and 5. There may be additional constraints or procedures defined in the applicable SAE J1939/0X document. For instance, on-highway trailer bridges and devices have address claiming constraints that differ from Con-Ag systems. A supplier of a Self Configurable ECU may provide any strategy for selecting an address to attempt to claim. However, if an alternative approach is not defined, it should attempt to claim an address in the range 128 - 247, starting at 128. Individual reserved Preferred Address assignments begin at zero and are assigned in a linear fashion as follows:

0 to 127	Reserved for most conventional ECUs in Industry Group 0 - Global
128 to 247	Reserved for Industry Specific assignments
248 to 253	Reserved for special ECUs
254	Null Address
255	Global Address

The current Preferred Address assignments are provided in Appendix B and information for requesting new assignments can be found in Appendix D. For further information, see SAE J1939/81.

3.2.7 Suspect Parameter Number (SPN)

A Suspect Parameter Number (SPN) is a 19 bit number used to identify a particular element, component, or parameter associated with an ECU. This capability is especially useful for diagnostics, permitting an ECU which has detected a fault associated with a particular component, such as a sensor, to transmit a fault message identifying the faulty component. SPNs are assigned by the Committee and are listed in Appendix C. The first 511 SPNs are reserved and will be assigned, when possible, to the exact same number as the Parameter Identifier (PID) of SAE J1587. For example, SAE J1587 PID 91 is "Percent Accelerator Pedal Position" and an accelerator pedal position parameter fault could be reported in SAE J1939 by using SPN 91. All following SPNs will be assigned in order as they are received.

Due to the very large number of SPNs which may ultimately be assigned, and their assignment in order of request, it will be very difficult for one interested in finding the SPN value of a particular component of interest simply by looking through the table. To facilitate the verification that new SPN requests are not duplications of existing assignments, the committee retains this table as an MS Excel™ spreadsheet, with additional data beyond that shown in Table C1. This permits sorting based upon SPN number, name, description, attribute (actuator, pressure, temperature, solenoid, etc.), SAE J1587 attributes (MID, PID, SID), SAE J1939 document paragraph, source name, and source address. It would be desirable for those developing SAE J1939 applications or wishing to request the assignment of a new SPN to have access to an up-to-date version of this spreadsheet so that they can perform various sorts and searches of the data. At the time of publication, the SAE has not yet determined how this data can best be made available to the users of SAE J1939 who are not committee participants.

3.3 Application Examples

A typical shift sequence consists of a series of commands from the transmission to the engine for controlling engine RPM and torque. Messages from the engine provide status and information which is used to determine when a particular condition has occurred. Other messages may also be sent regularly to disable the engine retarder at the proper time interval, or to inhibit ASR functions which might effect engine demand during portions of the shift sequence.

<u>Parameter</u> <u>Group</u>	<u>Msg.</u> <u>Type</u>	<u>Sender</u>	<u>Using</u> <u>ECU</u>	<u>Action/Function</u>
ETC1	Info	Trans	Eng, ASR	Transmission decision to shift (Shift in progress)
TSC1	Cmd	Trans	Eng.	Override Priority bits set for Trans. (01 priority)
TSC1	Cmd	Trans	Retarder (Eng.)	Torque control, Torque = 0
EEC1	Info	Eng.	Trans	Disable Mode, Torque = 0
TSC1	Cmd	Trans	Eng	Torque = 0
EEC1	Info	Eng	Trans	(Clutch may be disengaged)
TSC1	Cmd	Trans	Eng	Speed Control Mode, Requested Speed = X
EEC1	Info	Eng	Trans	Speed = X
TSC1	Cmd	Trans	Eng	(Clutch may be engaged)
ETC1	Info	Trans	ASR	Speed/Torque Limit Mode (11 priority)
TSC1	Cmd	Trans	Ret (Eng)	Allow ASR (11 priority)
TSC1	Cmd	Trans	Eng	Enable Mode
ETC1	Info	Trans	Eng, ASR	Override Disable
				Shift complete

A typical ABS sequence will cause a message to be transmitted which indicates that the engine should reduce torque and the driveline (transmission) to remain in its existing (stable) state. If the ABS condition is "significant" (i.e. not just bouncing tires), it may request that the driveline also be disengaged. Note that this message must be sent at regular intervals to maintain the condition. Once the event is over, the ABS inactive indicates that the transmission and engine may return to "normal" operation

<u>Parameter</u> <u>Group</u>	<u>Msg.</u> <u>Type</u>	<u>Sender</u>	<u>Using</u> <u>ECU</u>	<u>Action/Function</u>
EBC1	Cmd	ABS	Eng, Trans	ABS decision to modulate brakes
TSC1	Cmd	ABS	Retarder (Eng.)	ABS active
TC1	Cmd	ABS	Trans	Disable Mode, Torque = 0
EBC1	Cmd	ABS	Eng, Trans	(Prevent engine stall)
				Disengage Driveline
				ABS event over
				ABS inactive

A typical ASR sequence will attempt to reduce torque by sending torque limit messages to the engine. Torque can also be reduced by requesting more driveline retardation or permitting some clutch slip. Ultimately an upshift may be requested in order to achieve acceptable torque values. Note that the transmission takes over engine control during the shift.

<u>Parameter Group</u>	<u>Msg. Type</u>	<u>Sender</u>	<u>Using ECU</u>	<u>Action/Function</u>
EBC1	Cmd	ASR	Eng, Trans, Retarder (Drvl)	ASR Torque Reduction Decision ASR Torque control active
TSC1	Cmd	ASR	Eng	Torque Limit
TSC1	Cmd	ASR	Retarder (Drvl.)	Request more retardation
TC1	Cmd	ASR	Trans	Request more clutch slip
TC1	Cmd	ASR	Trans	Request new gear selection, No clutch slip request Shift if possible Shift complete, ASR continues torque limit ASR event over
EBC1	Cmd	ASR	Eng, Trans, Retarder (Drvl)	ASR inactive, disable override

4. NOTES

4.1 Marginal Indicia

The change bar (I) or an (R) symbol located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE TRUCK AND BUS CONTROL AND COMMUNICATIONS SUBCOMMITTEE
OF THE SAE TRUCK AND BUS ELECTRICAL/ELECTRONICS COMMITTEE

APPENDIX A

PARAMETER GROUP ASSIGNMENTS

TABLE A2
Parameter Groups (PGN)

Legend:

EDP = Extended Data Page (1 bit)

DP = Data page (1 bit)

PF = PDU Format (8 bits)

PS = PDU Specific (8 bits)

(either DA or GE)

GE = Group Extension (8 bits)

DA = Destination Address (8 bits)

MP = Multipacket Allowed (Yes or No)

PGN = Parameter Group Number (3 bytes) (see J1939-21 for description)

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	0	DA	0	Torque/Speed Control 1		TSC1	No	J1939-71
	0	0	1	DA	256	Transmission Control 1		TC1	No	J1939-71
	0	0	2	DA	512	Reserved for ISO 11992		EBS11	No	ISO 11992
	0	0	3	DA	768	Reserved for ISO 11992		EBS21	No	ISO 11992
	0	0	4	DA	1024	External Brake Request	Used for brake control by an external device	XBR	No	J1939-71
	0	0	5	DA	1280	Reserved for CANopen	CANopen Application Message #1/1	CAM11	No	ISO 11992
	0	0	6	DA	1536	Reserved for CANopen	CANopen Application Message #2/1	CAM21	No	ISO 11992
	0	0	7	DA	1792	General Purpose Valve Pressure	The measured load sense pressure and pilot pressure of a valve.	GPV4	No	J1939-71
	0	0	165	DA	42240	Auxiliary Input/Output Status 4	AUXIO PGNs are intended for use in which fixed mapping to functions is not possible.	AUXIO4	No	J1939-71
	0	0	166	DA	42496	Auxiliary Input/Output Status 3	AUXIO PGNs are intended for use in which fixed mapping to functions is not possible.	AUXIO3	No	J1939-71
	0	0	167	DA	42752	Auxiliary Input/Output Status 2	AUXIO PGNs are intended for use in which fixed mapping to functions is not possible.	AUXIO2	No	J1939-71
	0	0	168	DA	43008	Text Display	This provides ASCII text information, for example to an display instrument	DISP1	Yes	J1939-71
	0	0	169	DA	43264	Forward Lane Image Command	Message containing commands, sent to the forward image controller	FLIC	No	J1939-71
	0	0	170	DA	43520	Client (ECU) to File Server message	Used for send Status of the client to the file server, volume handling, file access, file handling and directory handling. Description of messages is given in ISO 11783 Part 13.	CFS	Yes	ISO 11783-13

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	171	DA	43776	File Server to Client (ECU) message	Used for obtaining status of the client, volume handling, file access, file handling and directory handling. Description of messages is given in ISO 11783 Part 13.	FSC	Yes	ISO 11783-13
	0	0	172	DA	44032	Agricultural Guidance Machine Info	Machine system feedback detailing status of machine relative to guidance operation	GMS	No	ISO 11783-7
	0	0	173	DA	44288	Agricultural Guidance System Command	Steering command expressed as desired curvature	GSC	No	ISO 11783-7
	0	0	174	DA	44544	Tire Pressure Reference Setting	For setting the tire pressure reference values.	TPRS	No	J1939-71
	0	0	175	DA	44800	Parameter Locate Message	This message is designed to cause other CAs to respond with the identity of any message that they send in which the particular parameter (identified by specific SPN) is contained	PLM	No	J1939-74
	0	0	176	DA	45056	Configuration Identification Message	Message used to identify the data content (by SPN) of one of the configurable messages (identified by PGN).	CIM	No	J1939-74
	0	0	177	DA	45312	Proprietarily Configurable Message #1	Proprietarily Configuration message for use in J1939-74.	PCM1	Yes	J1939-74
	0	0	178	DA	45568	Proprietarily Configurable Message #2	Proprietarily Configuration message for use in J1939-74.	PCM2	Yes	J1939-74
	0	0	179	DA	45824	Proprietarily Configurable Message #3	Proprietarily Configuration message for use in J1939-74.	PCM3	Yes	J1939-74
	0	0	180	DA	46080	Proprietarily Configurable Message #4	Proprietarily Configuration message for use in J1939-74.	PCM4	Yes	J1939-74
	0	0	181	DA	46336	Proprietarily Configurable Message #5	Proprietarily Configuration message for use in J1939-74.	PCM5	Yes	J1939-74
	0	0	182	DA	46592	Proprietarily Configurable Message #6	Proprietarily Configuration message for use in J1939-74.	PCM6	Yes	J1939-74
	0	0	183	DA	46848	Proprietarily Configurable Message #7	Proprietarily Configuration message for use in J1939-74.	PCM7	Yes	J1939-74
	0	0	184	DA	47104	Proprietarily Configurable Message #8	Proprietarily Configuration message for use in J1939-74.	PCM8	Yes	J1939-74
	0	0	185	DA	47360	Proprietarily Configurable Message #9	Proprietarily Configuration message for use in J1939-74.	PCM9	Yes	J1939-74
	0	0	186	DA	47616	Proprietarily Configurable Message #10	Proprietarily Configuration message for use in J1939-74.	PCM10	Yes	J1939-74
	0	0	187	DA	47872	Proprietarily Configurable Message #11	Proprietarily Configuration message for use in J1939-74.	PCM11	Yes	J1939-74
	0	0	188	DA	48128	Proprietarily Configurable Message #12	Proprietarily Configuration message for use in J1939-74.	PCM12	Yes	J1939-74

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	189	DA	48384	Proprietary Configurable Message #13	Proprietary Configuration message for use in J1939-74.	PCM13	Yes	J1939-74
	0	0	190	DA	48640	Proprietary Configurable Message #14	Proprietary Configuration message for use in J1939-74.	PCM14	Yes	J1939-74
	0	0	191	DA	48896	Proprietary Configurable Message #15	Proprietary Configuration message for use in J1939-74.	PCM15	Yes	J1939-74
	0	0	192	DA	49152	Proprietary Configurable Message #16	Proprietary Configuration message for use in J1939-74.	PCM16	Yes	J1939-74
	0	0	193	DA	49408	Diagnostic Readiness 2	Message to convey information relevant to the readiness of the OBD system.	DM21	No	J1939-73
	0	0	194	DA	49664	Monitor Performance Ratio		DM20	Yes	J1939-73
	0	0	195	DA	49920	Individual Clear/Reset Of Active And Previously Active DTC	Individual Clear/Reset Of Active And Previously Active DTC	DM22	No	J1939-73
	0	0	196	DA	50176	General Purpose Valve Command	This message provides control of the flow through a general purpose valve. Defined in ISO 11783-7.	GPV3	No	ISO 11783-7
	0	0	197	DA	50432	General Purpose Valve Measured Flow	This message provides the measurement of a general purpose valve. Defined in ISO11783-7.	GPV2	No	ISO 11783-7
	0	0	198	DA	50688	General Purpose Valve Estimated Flow	This message provides the estimated flow of a general purpose valve. Defined in ISO 11783-7.	GPV1	No	ISO 11783-7
	0	0	199	DA	50944	Extended Transport Protocol - Data Transfer	Defined in ISO 11783-6 Annex L	ETP.DT	Yes	ISO 11783-6
	0	0	200	DA	51200	Extended Transport Protocol - Connection Management	Defined in ISO 11783-6 Annex L	ETP.CM	No	ISO 11783-6
	0	0	201	DA	51456	Request 2	Used to Request a PGN from network device or devices and to specify whether the response should use the Transfer PGN or not. PGN and data set for all devices it is tasked with reporting.	RQST2	No	J1939-21
	0	0	202	DA	51712	Transfer	The Transfer PGN provides a mechanism for reporting multiple data sets for a given PGN.	XFER	No	J1939-21
	0	0	203	DA	51968	Process Data Message	The Process Data message has been defined as a destination specific message implying that the sender must decide which implement should receive the message.Working Set).	PD	No	ISO 11783-7
	0	0	204	DA	52224	Request for Repetition Rate	This message allows the system to adapt the bus bandwidth to the needs of the user of messages.	REQRR	No	ISO 11783-7
	0	0	205	DA	52480	Reserved for ISO 15765	KWP2000 Mixed functional addressing	KWP4	No	ISO 15765
	0	0	206	DA	52736	Reserved for ISO 15765	KWP2000 Mixed physical addressing	KWP3	No	ISO 15765
	0	0	207	DA	52992	Continuous Torque & Speed Limit Request		CTL	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	208	DA	53248	Cab Illumination Message	This message contains information that controls illumination devices inside the vehicle's cab.	CL	No	J1939-71
	0	0	209	DA	53504	Air Suspension Control 6	Used for suspension control	ASC6	No	J1939-71
	0	0	210	DA	53760	Air Suspension Control 2	Used for suspension control	ASC2	No	J1939-71
	0	0	211	DA	54016	Calibration Information	Provide information about the calibration to scan tool	DM19	Yes	J1939-73
	0	0	212	DA	54272	Data Security		DM18	Yes	J1939-73
	0	0	213	DA	54528	Time/Date Adjust		TDA	No	J1939-71
	0	0	214	DA	54784	Boot Load Data		DM17	Yes	J1939-73
	0	0	215	DA	55040	Binary Data Transfer		DM16	Yes	J1939-73
	0	0	216	DA	55296	Memory Access Response		DM15	No	J1939-73
	0	0	217	DA	55552	Memory Access Request		DM14	Yes	J1939-73
	0	0	218	DA	55808	Reserved for ISO 15765		KWP2	No	ISO 15765
	0	0	219	DA	56064	Reserved for ISO 15765		KWP1	No	ISO 15765
	0	0	220	DA	56320	Anti-theft Status		ATS	No	J1939-71
	0	0	221	DA	56576	Anti-theft Request		ATR	Yes	J1939-71
	0	0	222	DA	56832	Reset		RESET	No	J1939-71
	0	0	223	DA	57088	Stop Start Broadcast	This message is used to stop or start broadcast messages. These broadcast messages may be on networks other than SAE J1939.	DM13	No	J1939-73
	0	0	224	DA	57344	Cab Message 1	Message containing parameters originating from the vehicle cab.	CM1	No	J1939-71
	0	0	225	DA	57600	Reserved for ISO 11992		GPM21	No	ISO 11992
	0	0	226	DA	57856	Reserved for ISO 11992		GPM11	No	ISO 11992
	0	0	227	DA	58112	Command Non-continuously Monitored Test		DM7	No	J1939-73
	0	0	228	DA	58368	Reserved for ISO 11992		RGE11	No	ISO 11992
	0	0	229	DA	58624	Reserved for ISO 11992		RGE21	No	ISO 11992
	0	0	230	DA	58880	Virtual Terminal-to-Node		VT12	Yes	ISO 11783-6
	0	0	231	DA	59136	Node-to-Virtual Terminal		VT21	Yes	ISO 11783-6
	0	0	232	DA	59392	Acknowledgment Message	The Acknowledgment PG is used to provide a handshake mechanism between transmitting and receiving devices.	ACKM	No	J1939-21
	0	0	234	DA	59904	Request	This message type, identified by the PGN, provides the capability to request information globally or from a specific destination.	RQST	No	J1939-21

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	235	DA	60160	Transport Protocol - Data Transfer	Used for the transfer of data associated with Parameter Groups that have more than 8 bytes of data.	TP.DT	No	J1939-21
	0	0	236	DA	60416	Transport Protocol - Connection Mgmt	Used for the transfer of Parameter Groups that have 9 or more bytes of data.	TP.CM.xx	No	J1939-21
	0	0	237	DA	60672	Network Layer		N.xx	Yes	J1939-31
	0	0	238	DA	60928	Address Claimed	Message used to claim an address for a Controller Application.	AC	No	J1939-81
	0	0	239	DA	61184	Proprietary A	This proprietary PG uses the Destination Specific PDU Format allowing manufacturers to direct their proprietary communications to a specific destination node.	PropA	Yes	J1939-21
	0	0	240	0	61440	Electronic Retarder Controller 1	This message will be transmitted by several types of retarding devices.	ERC1	No	J1939-71
	0	0	240	1	61441	Electronic Brake Controller 1	Used for brake control information.	EBC1	No	J1939-71
	0	0	240	2	61442	Electronic Transmission Controller 1		ETC1	No	J1939-71
	0	0	240	3	61443	Electronic Engine Controller 2	Identifies electronic engine control related parameters.	EEC2	No	J1939-71
	0	0	240	4	61444	Electronic Engine Controller 1	Engine related parameters	EEC1	No	J1939-71
	0	0	240	5	61445	Electronic Transmission Controller 2		ETC2	No	J1939-71
	0	0	240	6	61446	Electronic Axle Controller 1		EAC1	No	J1939-71
	0	0	240	7	61447	Forward Lane Image urgent msg		FLI1	No	J1939-71
	0	0	240	8	61448	Hydraulic Pressure Governor Info	Information to be used for a hydraulic pressure governing control system	HPG	No	J1939-71
	0	0	240	9	61449	Vehicle Dynamic Stability Control 2	Contains information which relates to the vehicle's movement.	VDC2	No	J1939-71
	0	0	240	10	61450	Engine Gas Flow Rate	Flow rates of Air and mixed gasses into the engine cylinders.	EGF1	No	J1939-71
	0	0	240	11	61451	Electronic Steering Control	PGN which indicates the actual angle and the status of a steerable axle	ESC1	No	J1939-71
	0	0	240	12	61452	Electronic Transmission Controller #8	Electronic Transmission Controller #8	ETC8	No	J1939-71
	0	0	240	13	61453	Land Leveling System Operational Information	Group of operational parameters associated with the Land Leveling System, such as switch states	LOI	No	J1939-71
	0	0	240	14	61454	Aftertreatment 1 Intake Gas 1	The purpose of this PGN is to group the aftertreatment intake sensor data for bank 1. These values include the NOx, %O2 etc.	AT1IG1	No	J1939-71
	0	0	240	15	61455	Aftertreatment 1 Outlet Gas 1	The purpose of this PGN is to group the aftertreatment outlet sensor data for bank 1. These values include the NOx, %O2 etc.	AT1OG1	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	240	16	61456	Aftertreatment 2 Intake Gas 1	The purpose of this PGN is to group the aftertreatment intake sensor data for bank 2. These values include the NOx, %O2, etc.	AT2IG1	No	J1939-71
	0	0	240	17	61457	Aftertreatment 2 Outlet Gas 1	The purpose of this PGN is to group the aftertreatment outlet sensor data for bank 2. These values include the NOx, %O2, etc.	AT2OG1	No	J1939-71
	0	0	240	18	61458	Fifth Wheel Smart Systems 1	Fifth wheel smart system information. Parameters used to determine the status of the tractor to trailer coupling system integrity.	FWSS1	No	J1939-71
	0	0	240	19	61459	Slope Sensor Information	Slope Sensor Information	SSI	No	J1939-71
	0	0	240	20	61460	Blade Information	A measurement of the machine's relative blade height and a rotational angle measurement of the machine blade yaw angle around the machine z-axis	BI	No	J1939-71
	0	0	240	21	61461	Requested Generator Total AC Reactive Power	Contains requested reactive and power factor control values	RGTACRP	No	J1939-75
	0	0	240	22	61462	Cylinder Combustion Status	Used to send the SPNs containing information relating to the state of combustion for 24 cylinders.	CCS	No	J1939-71
	0	0	240	23	61463	Engine Knock Level #1	Used to send the SPNs containing information relating to the level of knock for 8 cylinders.	KL1	No	J1939-71
	0	0	240	24	61464	Engine Knock Level #2	Used to send the SPNs containing information relating to the level of knock for 8 cylinders.	KL2	No	J1939-71
	0	0	240	25	61465	Engine Knock Level #3	Used to send the SPNs containing information relating to the level of knock for 8 cylinders.	KL3	No	J1939-71
	0	0	240	26	61466	Engine Throttle / Fuel Actuator Control Command	Used to control networked electronic throttle control actuator and/or fuel control actuator valves.	TFAC	No	J1939-71
	0	0	240	27	61467	General Purpose Message #1/7	Message to control lights on towed vehicle(s). See ISO 11992.	GPM17	No	ISO 11992
	0	0	240	28	61468	Requested Generator Average Basic AC Quantities	Contains Requested Generator Average Basic AC Quantities	RGAAAC	No	J1939-75
	0	0	240	29	61469	Steering Angle Sensor Information	Contains information which relates to a steering angle sensor.	SAS	No	J1939-71
	0	0	240	30	61470	Generator Control 2	Contains parameters that allow the generator control system to control the engine and to provide information about the generator control system	GC2	No	J1939-75
	0	0	240	31	61471	Electronic Brake System #2/6	Message to transmit data of the towed vehicle to the towing vehicle. See ISO 11992.	EBS26	No	ISO 11992
	0	0	240	32	61472	Electronic Brake System #2/5	Message to transmit data of the towed vehicle to the towing vehicle. See ISO 11992.	EBS25	No	ISO 11992

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	101	64869	Aftertreatment 1 Fuel Control 2	Contains information about the aftertreatment 1 fuel system	AT1FC2	No	J1939-71
	0	0	253	102	64870	Engine Temperature 4	Engine temperatures	ET4	No	J1939-71
	0	0	253	103	64871	Zero Net Vehicle Weight Change	Zero Net Vehicle Weight Change	ZNVW	No	J1939-71
	0	0	253	104	64872	Gross Combination Vehicle Weight	Gross Combination Vehicle Weight	GCVW	No	J1939-71
	0	0	253	105	64873	Axle Group Calibration Weights	Indicates axle group calibration weights	AGCW	No	J1939-71
	0	0	253	106	64874	Axle Group Weight	Combination of specific axle group and the weight imposed on that axle group	AGW	No	J1939-71
	0	0	253	107	64875	Available Axle Group Weights	Indicates which axle groups are included in the current weight calculation	AAGW	No	J1939-71
	0	0	253	108	64876	Aftertreatment 2 Air Control 2	This PGN contains information about the Aftertreatment 2 Air Control.	AT2AC2	No	J1939-71
	0	0	253	109	64877	Aftertreatment 1 Air Control 2	This PGN contains information about the Aftertreatment 1 Air Control.	AT1AC2	No	J1939-71
	0	0	253	110	64878	Catalyst Use Information	Used to provide information to an inspection tool regarding the proper use of reagent in SCR type emissions control systems.	SCR1	No	J1939-71
	0	0	253	111	64879	Electronic Engine Controller 8	Engine related parameters	EEC8	No	J1939-71
	0	0	253	112	64880	Door ramp control	This message reports the current status of door ramps	DRC	No	J1939-71
	0	0	253	113	64881	Brake actuator stroke status	The Brake Stroke Alert (BSA) message will provide the brake actuator stroke status for up to 20 wheel ends.	BSA	No	J1939-71
	0	0	253	114	64882	Engine Spark Voltage 6	This is the secondary voltage of the combustion event, cylinders 21 through 24.	ESV6	No	J1939-71
	0	0	253	115	64883	Engine Spark Voltage 5	This is the secondary voltage of the combustion event, cylinders 17 through 20.	ESV5	No	J1939-71
	0	0	253	116	64884	Engine Spark Voltage 4	This is the secondary voltage of the combustion event, cylinders 13 through 16.	ESV4	No	J1939-71
	0	0	253	117	64885	Engine Spark Voltage 3	This is the secondary voltage of the combustion event, cylinders 9 through 12.	ESV3	No	J1939-71
	0	0	253	118	64886	Engine Spark Voltage 2	This is the secondary voltage of the combustion event, cylinders 5 through 8.	ESV2	No	J1939-71
	0	0	253	119	64887	Engine Spark Voltage 1	This is the secondary voltage of the combustion event, cylinders 1 through 4.	ESV1	No	J1939-71
	0	0	253	120	64888	Aftertreatment 2 Trip Information	This PGN contains trip total information about the aftertreatment 2.	AT2TI	Yes	J1939-71
	0	0	253	121	64889	Aftertreatment 1 Trip Information	This PGN contains trip total information about the aftertreatment 1.	AT1TI	Yes	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	122	64890	Aftertreatment 2 Service	This PGN contains information about the aftertreatment 2 (particulate trap 2 soot and ash load).	AT2S	No	J1939-71
	0	0	253	123	64891	Aftertreatment 1 Service	This PGN contains information about the aftertreatment 1 (particulate trap 1 soot and ash load).	AT1S	No	J1939-71
	0	0	253	124	64892	Particulate Trap Control 1	Contains information about the particulate trap regeneration control.	PTC1	No	J1939-71
	0	0	253	126	64894	Adaptive Front-Lighting System Status	This message reports information about the current operation mode of the Adaptive Front-Lighting System (AFS).	AFSS	No	J1939-71
	0	0	253	127	64895	Engine Configuration 2	Contains static information about the engine.	EC2	Yes	J1939-71
	0	0	253	128	64896	Permanent DTCs		DM28	Yes	J1939-73
	0	0	253	129	64897	EGR Cooler Bypass	Contains information about the EGR Cooler Bypass	EGRBV	No	J1939-71
	0	0	253	130	64898	All Pending DTCs	To transmit "pending" diagnostic trouble codes detected during current or last completed driving cycle for components/systems that are tested or continuously monitored during normal driving conditions.	DM27	No	J1939-73
	0	0	253	131	64899	Transfer Case Information	Transfer Case Information	TCI	No	J1939-71
	0	0	253	132	64900	Engine Fluid Level/Pressure 9	This message contains Engine Intake Valve Actuation Oil Pressure information.	EFL/P9	No	J1939-71
	0	0	253	133	64901	Engine Fluid Level/Pressure 8	This message contains Engine Intake Valve Actuation Oil Pressure information.	EFL/P8	No	J1939-71
	0	0	253	134	64902	Engine Fluid Level/Pressure 7	This message contains Engine Intake Valve Actuation Oil Pressure information.	EFL/P7	No	J1939-71
	0	0	253	135	64903	Engine Fluid Level/Pressure 6	This message contains Engine Intake Valve Actuation Oil Pressure information.	EFL/P6	No	J1939-71
	0	0	253	136	64904	Engine Fluid Level/Pressure 5	This message contains Engine Intake Valve Actuation Oil Pressure information.	EFL/P5	No	J1939-71
	0	0	253	137	64905	Vehicle Direction/Speed 2	Vehicle Direction/Speed 2 PGN contains the vehicle roll data (used to insure that fluid level measurements are valid.).	VDS2	No	J1939-71
	0	0	253	138	64906	SAE J2012 DTC Display	Conveys basic SAE J2012 DTC information for on-board or service tool displays.	J2012	Yes	J1939-71
	0	0	253	139	64907	Aftertreatment 2 Gas Parameters	Particulate Trap gas parameters for system or bank 2	AT2GP	No	J1939-71
	0	0	253	140	64908	Aftertreatment 1 Gas Parameters	Particulate Trap gas parameters for system or bank 1	AT1GP	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	141	64909	Utility Total AC Reactive Energy	This PGN contains quantities for the cumulative AC reactive energy from the utility.	UTACER	No	J1939-75
	0	0	253	142	64910	Generator Total AC Reactive Energy	This PGN contains quantities for the cumulative AC reactive energy from the generator.	GTACER	No	J1939-75
	0	0	253	143	64911	Generator Total AC Percent Power	This PGN contains quantities for the instantaneous AC power from the generator, as percentages of rated power	GTACPP	No	J1939-75
	0	0	253	144	64912	Advertised Engine Torque Curve	This message conveys the advertised torque curve for the engine, as typically seen on specification sheets available from most engine manufacturers.	AETC	Yes	J1939-71
	0	0	253	145	64913	AC Switching Device Status	This contains parameters indicating the status of various breakers throughout a power generation system.	ACS	No	J1939-75
	0	0	253	146	64914	Engine Operating Information	Contains engine parameters related to operation.	EOI	No	J1939-71
	0	0	253	147	64915	Generator Control 1	Message for the generator set control to change or report the status of the generator system.	GC1	No	J1939-75
	0	0	253	148	64916	Electronic Engine Controller 7	Engine related parameters	EEC7	No	J1939-71
	0	0	253	149	64917	Transmission Fluids 2		TRF2	No	J1939-71
	0	0	253	152	64920	Aftertreatment 1 Historical Information	Contains information about the history of the aftertreatment 1 system.	AT1HI	Yes	J1939-71
	0	0	253	153	64921	Aftertreatment 2 Historical information	Contains information about the history of the aftertreatment 2 system	AT2HI	Yes	J1939-71
	0	0	253	154	64922	Electronic Brake System #2/4	Message to transmit data of the towed vehicle to the towing vehicle. See ISO 11992.	EBS24	No	ISO 11992
	0	0	253	155	64923	Catalyst Reagent Information	Sensor Information which measures temperature, concentration, and conductivity of the catalyst reagent	CR1	No	J1939-71
	0	0	253	156	64924	Sensor Electrical Power #2	Voltage supplies for sensors #2	SEP2	No	J1939-71
	0	0	253	157	64925	Sensor Electrical Power #1	Voltage supplies for sensors #1	SEP1	No	J1939-71
	0	0	253	158	64926	Aftertreatment 2 Air Control 1	Contains information about the aftertreatment 2 air system	AT2AC1	No	J1939-71
	0	0	253	159	64927	Aftertreatment 1 Air Control 1	Contains information about the aftertreatment 1 air system	AT1AC1	No	J1939-71
	0	0	253	160	64928	Aftertreatment 2 Fuel Control 1	Contains information about the aftertreatment 2 fuel system	AT2FC	No	J1939-71
	0	0	253	161	64929	Aftertreatment 1 Fuel Control 1	Contains information about the aftertreatment 1 fuel system	AT1FC1	No	J1939-71
	0	0	253	162	64930	Fuel Information 3 (Gaseous)	Gaseous fuel information 3	GFI3	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	163	64931	Electronic Engine Controller 6	Engine related parameters	EEC6	No	J1939-71
	0	0	253	164	64932	PTO Drive Engagement	Information relating to the request for engagement, consent for engagement, and status of engagement of various specific physical PTO drives	PTODE	No	J1939-71
	0	0	253	165	64933	Door Control 2	Used for door information.	DC2	No	J1939-71
	0	0	253	166	64934	Voltage Regulator Excitation Status	Contains voltage regulator parameters that pertain to the generation excitation	VREP	No	J1939-75
	0	0	253	167	64935	Voltage Regulator Operating Mode	Contains operating modes for the voltage regulator functions	VROM	No	J1939-75
	0	0	253	168	64936	Wireless Communications Message 2	Message for reporting status information regarding the second instance of a wireless communications network on a device or system.	WCM2	No	J1939-71
	0	0	253	169	64937	Wireless Communications Message 1	Message for reporting status information regarding the first instance of a wireless communications network on a device or system.	WCM1	No	J1939-71
	0	0	253	170	64938	Engine Fluid Level/Pressure 4	4th PGN which identifies parameters that are either measuring various pressures within the engine or identifying engine fluid levels	EFL/P4	No	J1939-71
	0	0	253	171	64939	Request For Complete Configurable Message Set	This message is designed to cause all CAs to respond with the complete sequence of configuration identification messages for a particular one or all of the configurable messages that they send.	RCMS	No	J1939-74
	0	0	253	173	64941	Request For Complete Configurable Message Set	Request For Complete Configurable Message Set	RCMS	No	J1939-74
	0	0	253	174	64942	Fifth Wheel Smart Systems 2	Fifth wheel smart system information #2. Message to convey operator parameters associated with the tractor to trailer coupling control and error state.	FWSS2	No	J1939-71
	0	0	253	175	64943	Aftertreatment 2 Intermediate Gas	The purpose of this PGN is to group the aftertreatment intermediate gas temperature and pressure messages for bank 2.	AT2IMG	No	J1939-71
	0	0	253	176	64944	Aftertreatment 2 Outlet Gas 2	The purpose of this PGN is to group the aftertreatment outlet gas temperature messages for bank 2.	AT2OG2	No	J1939-71
	0	0	253	177	64945	Aftertreatment 2 Intake Gas 2	The purpose of this PGN is to group the aftertreatment intake gas temperature messages for bank 2.	AT2IG2	No	J1939-71
	0	0	253	178	64946	Aftertreatment 1 Intermediate Gas	The purpose of this PGN is to group the aftertreatment intermediate gas temperature and pressure messages.	AT1IMG	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	179	64947	Aftertreatment 1 Outlet Gas 2	The purpose of this PGN is to group the aftertreatment outlet gas temperature messages.	AT1OG2	No	J1939-71
	0	0	253	180	64948	Aftertreatment 1 Intake Gas 2	The purpose of this PGN is to group the aftertreatment intake gas temperature messages for bank 1.	AT1IG2	No	J1939-71
	0	0	253	181	64949	Previously Active Emission Related Faults	This message contains DTCs that are confirmed but for which the MIL is off.	DM23	Yes	J1939-73
	0	0	253	182	64950	SPN Support	This message is used to identify those SPNs supported by the product for freeze frames and data stream messages.	DM24	No	J1939-73
	0	0	253	183	64951	Expanded Freeze Frame	This message defines the expanded freeze frame length	DM25	No	J1939-73
	0	0	253	184	64952	Diagnostic Readiness 3	This message conveys information useful in determining whether the OBD System has a defect or not.	DM26	No	J1939-73
	0	0	253	185	64953	Tire Pressure Reference Information	Information on actual tire pressure reference value for monitoring.	TPRI	No	J1939-71
	0	0	253	186	64954	Farebox Status	Used to report alarms of the fare collection unit.	TR6	No	J1939-71
	0	0	253	187	64955	Farebox Point of Sale	Used to report stop level point of sale detail.	TR5	No	J1939-71
	0	0	253	188	64956	Farebox Service Detail	Used to identify service, assignments, and fare preset detail of the fare collection unit.	TR4	Yes	J1939-71
	0	0	253	189	64957	Signal Preemption	Status and configuration of the device used for intersection preemption.	TR3	No	J1939-71
	0	0	253	190	64958	Transit Route	The current route assigned to this transit vehicle	TR1	Yes	J1939-71
	0	0	253	191	64959	Transit Milepost	Identification of a transit route milepost	TR2	Yes	J1939-71
	0	0	253	192	64960	Passenger Counter	Used to notify the transit link devices of the passenger count.	TR7	No	J1939-71
	0	0	253	193	64961	Engine Fluid Level/Pressure 3	3rd PGN which identifies parameters that are either measuring various pressures within the engine or identifying engine fluid levels	EFL/P3	No	J1939-71
	0	0	253	196	64964	Electronic Brake Controller 5	Used for information on brake control.	EBC5	No	J1939-71
	0	0	253	197	64965	ECU Identification Information	Message for reporting identification and information about the physical ECU and its hardware.	ECUID	Yes	J1939-71
	0	0	253	198	64966	Cold Start Aids	Cold start aid information and settings.		No	J1939-71
	0	0	253	199	64967	Off-Highway Engine Control Selection States	Reports the states of off-highway engine control modes, as they apply to different modes of engine operation which may be used to aid particular working environments.	OHCSS	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	200	64968	Operator Primary Intermediate Speed Control state	The Operator Primary Intermediate Speed Control State is used to provide the controller feedback to indicate the controls state achieved.	ISCS	No	J1939-71
	0	0	253	201	64969	Electronic Control Module Information	Information relating to electronic control modules	CMI	Yes	J1939-71
	0	0	253	202	64970	Intermediate Speed Control	This message addresses the particular needs of the Industrial Engine operational functionality concerning the Intermediate Speed Control operation	ISC	No	J1939-71
	0	0	253	203	64971	Off-Highway Engine Control Selection	Allows for the selection of off-highway engine control modes, as they apply to different modes of engine operation which may be used to aid particular working environments.	OHECS	No	J1939-71
	0	0	253	204	64972	Operators External Light Controls Message	The message containing the information about the position of the operator's external light control switch(s).	OEL	No	J1939-71
	0	0	253	205	64973	Operator Wiper and Washer Controls Message	Message for items related to the operators controls for the window wipers and washers on the front and rear cab windows	OWW	No	J1939-71
	0	0	253	206	64974	Working Set Member Message	Message sent by the Master of a Working Set to identify an individual member of a specific Working Set.	WSMM	No	J1939-81
	0	0	253	207	64975	Working Set Master Message	Message sent by the Master of a Working Set to identify how many members there are in said set.	WSM	No	J1939-81
	0	0	253	208	64976	Inlet/Exhaust Conditions 2	Inlet/Exhaust Conditions 2 is a second PGN conveying this type of engine information. Also see PGN 65270.	IC2	No	J1939-71
	0	0	253	209	64977	FMS-standard Interface Identity/Capabilities	Information which specifies the capabilities of the Fleet Management System (FMS) - standard interface device.	FMS	No	J1939-71
	0	0	253	210	64978	ECU Performance	Message used to transfer ECU performance parameters.	EP	No	J1939-71
	0	0	253	211	64979	Turbocharger Information 6	Turbocharger Compressor Outlet Discharge Temperature	TCI6	No	J1939-71
	0	0	253	212	64980	Cab Message 3	Provides information from Cab mounted operator inputs.	CM3	No	J1939-71
	0	0	253	213	64981	Electronic Engine Controller 5	Engine related parameters	EEC5	No	J1939-71
	0	0	253	214	64982	Basic Joystick Message 1	Used to transfer information about the measured status of the 1st 2 axes and up to 12 buttons of a joystick.	BJM1	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	215	64983	Extended Joystick Message 1	Used to transfer information about the measured status of three additional axes of a joystick and switches of the joystick grip or handle.	EJM1	No	J1939-71
	0	0	253	216	64984	Basic Joystick Message 2	Used to transfer information about the measured status of the 1st 2 axes and up to 12 buttons of a joystick.	BJM2	No	J1939-71
	0	0	253	217	64985	Extended Joystick Message 2	Used to transfer information about the measured status of three additional axes of a joystick and switches of the joystick grip or handle.	EJM2	No	J1939-71
	0	0	253	218	64986	Basic Joystick Message 3	Used to transfer information about the measured status of the 1st 2 axes and up to 12 buttons of a joystick.	BJM3	No	J1939-71
	0	0	253	219	64987	Extended Joystick Message 3	Used to transfer information about the measured status of three additional axes of a joystick and switches of the joystick grip or handle.	EJM3	No	J1939-71
	0	0	253	220	64988	Marine Control Information	This messages contains marine vessel control information for the engine	MCI	No	J1939-71
	0	0	253	221	64989	ISO 11992 Military Application Tractor - Trailer Message	Tractor to trailer message for military applications using ISO 11992.	MAM11	No	ISO 11992
	0	0	253	222	64990	ISO 11992 Military Application Trailer - Tractor Feedback Message	Feedback message from trailer to tractor for military applications using ISO 11992.	MAM21	No	ISO 11992
	0	0	253	223	64991	Front Wheel Drive Status	Front wheel drive ECU information	FWD	No	J1939-71
	0	0	253	224	64992	Ambient Conditions 2	This message contains measurement and configuration information about the vehicle ambient conditions.	AMB2	No	J1939-71
	0	0	253	225	64993	Cab A/C Climate System Information	This message contains measurement and condition information from cab air conditioning components.	CACI	No	J1939-71
	0	0	253	226	64994	Supply Pressure Demand	Used for controlling the supply pressure. Often used to raise the pressure of a supply pressure circuit in situations where more pneumatic energy is needed.	SPR	No	J1939-71
	0	0	253	227	64995	Equipment Operation and Control	Parameters related to the operation and controls for equipment	EOAC	No	J1939-71
	0	0	253	228	64996	Equipment Performance Data	Parameters related to the performance characteristics of equipment	EPD	No	J1939-71
	0	0	253	229	64997	Maximum Vehicle Speed Limit Status	Reports the possible maximum vehicle speed limits, one through seven, and the applied maximum vehicle speed limit.	MVS	No	J1939-71
	0	0	253	230	64998	Hydraulic Braking System	Used for information on a hydraulic brake system	HBS	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	253	231	64999	Bus #1/Utility Sync Check Status		BUSC	No	J1939-75
	0	0	253	232	65000	Bus #1/Generator Sync Check Status		BGSC	No	J1939-75
	0	0	253	233	65001	Bus #1 Phase C Basic AC Quantities		BPCAC	No	J1939-75
	0	0	253	234	65002	Bus #1 Phase B Basic AC Quantities		BPBAC	No	J1939-75
	0	0	253	235	65003	Bus #1 Phase A Basic AC Quantities		BPAAC	No	J1939-75
	0	0	253	236	65004	Bus #1 Average Basic AC Quantities		BAAC	No	J1939-75
	0	0	253	237	65005	Utility Total AC Energy		UTACE	No	J1939-75
	0	0	253	238	65006	Utility Phase C AC Reactive Power		UPCACR	No	J1939-75
	0	0	253	239	65007	Utility Phase C AC Power		UPCACP	No	J1939-75
	0	0	253	240	65008	Utility Phase C AC Basic Quantities		UPCAC	No	J1939-75
	0	0	253	241	65009	Utility Phase B AC Reactive Power		UPBACR	No	J1939-75
	0	0	253	242	65010	Utility Phase B AC Power		UPBACP	No	J1939-75
	0	0	253	243	65011	Utility Phase B AC Basic Quantities		UPBAC	No	J1939-75
	0	0	253	244	65012	Utility Phase A AC Reactive Power		UPACCR	No	J1939-75
	0	0	253	245	65013	Utility Phase A AC Power		UPAACP	No	J1939-75
	0	0	253	246	65014	Utility Phase A Basic AC Quantities		UPAAC	No	J1939-75
	0	0	253	247	65015	Utility Total AC Reactive Power		UTACR	No	J1939-75
	0	0	253	248	65016	Utility Total AC Power		UTACP	No	J1939-75
	0	0	253	249	65017	Utility Average Basic AC Quantities		UAAC	No	J1939-75
	0	0	253	250	65018	Generator Total AC Energy		GTACE	No	J1939-75
	0	0	253	251	65019	Generator Phase C AC Reactive Power		GPCACR	No	J1939-75
	0	0	253	252	65020	Generator Phase C AC Power		GPCACP	No	J1939-75
	0	0	253	253	65021	Generator Phase C Basic AC Quantities		GPCAC	No	J1939-75
	0	0	253	254	65022	Generator Phase B AC Reactive Power		GPBACRP	No	J1939-75
	0	0	253	255	65023	Generator Phase B AC Power		GPBACP	No	J1939-75
	0	0	254	0	65024	Generator Phase B Basic AC Quantities		GPBAC	No	J1939-75
	0	0	254	1	65025	Generator Phase A AC Reactive Power		GPAACR	No	J1939-75
	0	0	254	2	65026	Generator Phase A AC Power		GPAACP	No	J1939-75
	0	0	254	3	65027	Generator Phase A Basic AC Quantities		GPAAC	No	J1939-75
	0	0	254	4	65028	Generator Total AC Reactive Power		GTACR	No	J1939-75
	0	0	254	5	65029	Generator Total AC Power		GTACP	No	J1939-75
	0	0	254	6	65030	Generator Average Basic AC Quantities		GAAC	No	J1939-75
	0	0	254	7	65031	Exhaust Temperature		ET	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	8	65032	Required Tractor Facilities message	Implement response to task controller or Tractor ECU desired tractor classification and facilities	RTF	No	ISO 11783-7
	0	0	254	9	65033	Tractor Facilities response message	Tractor response to an implement ECU or task controller tractor classification and facilities request	TFR	No	ISO 11783-7
	0	0	254	10	65034	Implement Remote Control Command Tractor Response	This command is a task controller or an implement ECU to tractor ECU message.	IRCR	No	ISO 11783-7
	0	0	254	11	65035	Implement Remote Control Command	This command is a task controller or an implement ECU to tractor ECU message.	IRC	No	ISO 11783-7
	0	0	254	12	65036	Working Set Member	This message is sent by the Master of a Working Set to identify an individual member of a specific Working Set (Master's Source Address identifies the particular Working Set).	WSMEM	No	J1939-81
	0	0	254	13	65037	Working Set Master	This message is sent by the Master of a Working Set to identify how many members there are in said set.	WSMSTR	No	J1939-81
	0	0	254	14	65038	Response for Repetition Rate	This global message is the response of the request of a specific user to change the repetition rate.	RESRR	No	ISO 11783-7
	0	0	254	15	65039	Language Command	The language message has been defined as a global message to inform all ECUs on the 11783 bus the language that the operator wants to use, the date and time format and the units of measure with which the connected system should work.	LC	No	ISO 11783-7
	0	0	254	16	65040	Auxiliary Valve Number 0 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV00EF	No	ISO 11783-7
	0	0	254	17	65041	Auxiliary Valve Number 1 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV01EF	No	ISO 11783-7
	0	0	254	18	65042	Auxiliary Valve Number 2 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV02EF	No	ISO 11783-7
	0	0	254	19	65043	Auxiliary Valve Number 3 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV03EF	No	ISO 11783-7
	0	0	254	20	65044	Auxiliary Valve Number 4 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV04EF	No	ISO 11783-7
	0	0	254	21	65045	Auxiliary Valve Number 5 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV05EF	No	ISO 11783-7
	0	0	254	22	65046	Auxiliary Valve Number 6 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV06EF	No	ISO 11783-7
	0	0	254	23	65047	Auxiliary Valve Number 7 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV07EF	No	ISO 11783-7

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	24	65048	Auxiliary Valve Number 8 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV08EF	No	ISO 11783-7
	0	0	254	25	65049	Auxiliary Valve Number 9 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV09EF	No	ISO 11783-7
	0	0	254	26	65050	Auxiliary Valve Number 10 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV10EF	No	ISO 11783-7
	0	0	254	27	65051	Auxiliary Valve Number 11 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV11EF	No	ISO 11783-7
	0	0	254	28	65052	Auxiliary Valve Number 12 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV12EF	No	ISO 11783-7
	0	0	254	29	65053	Auxiliary Valve Number 13 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV13EF	No	ISO 11783-7
	0	0	254	30	65054	Auxiliary Valve Number 14 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV14EF	No	ISO 11783-7
	0	0	254	31	65055	Auxiliary Valve Number 15 Estimated Flow	This message provides the estimated flow of specified auxiliary valve.	AV15EF	No	ISO 11783-7
	0	0	254	32	65056	Auxiliary Valve Number 0 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV00MF	No	ISO 11783-7
	0	0	254	33	65057	Auxiliary Valve Number 1 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV01MF	No	ISO 11783-7
	0	0	254	34	65058	Auxiliary Valve Number 2 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV02MF	No	ISO 11783-7
	0	0	254	35	65059	Auxiliary Valve Number 3 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV03MF	No	ISO 11783-7
	0	0	254	36	65060	Auxiliary Valve Number 4 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV04MF	No	ISO 11783-7
	0	0	254	37	65061	Auxiliary Valve Number 5 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV05MF	No	ISO 11783-7
	0	0	254	38	65062	Auxiliary Valve Number 6 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV06MF	No	ISO 11783-7
	0	0	254	39	65063	Auxiliary Valve Number 7 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV07MF	No	ISO 11783-7
	0	0	254	40	65064	Auxiliary Valve Number 8 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV08MF	No	ISO 11783-7
	0	0	254	41	65065	Auxiliary Valve Number 9 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV09MF	No	ISO 11783-7
	0	0	254	42	65066	Auxiliary Valve Number 10 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV10MF	No	ISO 11783-7
	0	0	254	43	65067	Auxiliary Valve Number 11 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV11MF	No	ISO 11783-7

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	44	65068	Auxiliary Valve Number 12 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV12MF	No	ISO 11783-7
	0	0	254	45	65069	Auxiliary Valve Number 13 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV13MF	No	ISO 11783-7
	0	0	254	46	65070	Auxiliary Valve Number 14 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV14MF	No	ISO 11783-7
	0	0	254	47	65071	Auxiliary Valve Number 15 Measured Flow	This message provides the measurement of specified auxiliary valve.	AV15MF	No	ISO 11783-7
	0	0	254	48	65072	Auxiliary Valve Number 0 Command	This message provides control of the flow through the auxiliary valves.	AV00C	No	ISO 11783-7
	0	0	254	49	65073	Auxiliary Valve Number 1 Command	This message provides control of the flow through the auxiliary valves.	AV01C	No	ISO 11783-7
	0	0	254	50	65074	Auxiliary Valve Number 2 Command	This message provides control of the flow through the auxiliary valves.	AV02C	No	ISO 11783-7
	0	0	254	51	65075	Auxiliary Valve Number 3 Command	This message provides control of the flow through the auxiliary valves.	AV03C	No	ISO 11783-7
	0	0	254	52	65076	Auxiliary Valve Number 4 Command	This message provides control of the flow through the auxiliary valves.	AV04C	No	ISO 11783-7
	0	0	254	53	65077	Auxiliary Valve Number 5 Command	This message provides control of the flow through the auxiliary valves.	AV05C	No	ISO 11783-7
	0	0	254	54	65078	Auxiliary Valve Number 6 Command	This message provides control of the flow through the auxiliary valves.	AV06C	No	ISO 11783-7
	0	0	254	55	65079	Auxiliary Valve Number 7 Command	This message provides control of the flow through the auxiliary valves.	AV07C	No	ISO 11783-7
	0	0	254	56	65080	Auxiliary Valve Number 8 Command	This message provides control of the flow through the auxiliary valves.	AV08C	No	ISO 11783-7
	0	0	254	57	65081	Auxiliary Valve Number 9 Command	This message provides control of the flow through the auxiliary valves.	AV09C	No	ISO 11783-7
	0	0	254	58	65082	Auxiliary Valve Number 10 Command	This message provides control of the flow through the auxiliary valves.	AV10C	No	ISO 11783-7
	0	0	254	59	65083	Auxiliary Valve Number 11 Command	This message provides control of the flow through the auxiliary valves.	AV11C	No	ISO 11783-7
	0	0	254	60	65084	Auxiliary Valve Number 12 Command	This message provides control of the flow through the auxiliary valves.	AV12C	No	ISO 11783-7
	0	0	254	61	65085	Auxiliary Valve Number 13 Command	This message provides control of the flow through the auxiliary valves.	AV13C	No	ISO 11783-7
	0	0	254	62	65086	Auxiliary Valve Number 14 Command	This message provides control of the flow through the auxiliary valves.	AV14C	No	ISO 11783-7
	0	0	254	63	65087	Auxiliary Valve Number 15 Command	This message provides control of the flow through the auxiliary valves.	AV15C	No	ISO 11783-7

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254 64	64	65088	Lighting Data	This lighting message is a response to the request for lighting data in the lighting command message. lighting controllers on the tractor and attached implements.	LD	No	J1939-71
	0	0	254 65	65	65089	Lighting Command	The lighting command message has been defined as a global message from the tractor to all lighting controllers on the tractor and attached implements.	LC	No	J1939-71
	0	0	254 66	66	65090	Hitch and PTO Commands	This message provides control of the hitch position, PTO shaft set point speed and PTO engagement.	HP TOC	No	ISO 11783-7
	0	0	254 67	67	65091	Primary or Rear Power Take off Output Shaft	This message provides the measurement of the current primary or rear PTO output shaft parameters.	RPTO	No	ISO 11783-7
	0	0	254 68	68	65092	Secondary or Front Power Take off Output Shaft	This message provides the measurement of the current secondary or front PTO output shaft parameters.	FPTO	No	ISO 11783-7
	0	0	254 69	69	65093	Primary or Rear Hitch Status	This message provides the measurement of the current rear hitch parameters.	RHS	No	ISO 11783-7
	0	0	254 70	70	65094	Secondary or Front Hitch Status	This message provides the measurement of the current front hitch parameters.	FHS	No	ISO 11783-7
	0	0	254 71	71	65095	Maintain Power	This message is sent by any ECU connected to the implement bus requesting that the Tractor ECU not switch off the power for the next 2 seconds.	MP	No	ISO 11783-7
	0	0	254 72	72	65096	Wheel-based Speed and Distance	This message is sent by the Tractor ECU on the implement bus on construction and agricultural implements and provides to connected systems, the current measured wheel-based speed.	WBSD	No	ISO 11783-7
	0	0	254 73	73	65097	Ground-based Speed and Distance	This message is normally sent by the Tractor ECU on the implement bus on construction and agricultural implements and provides to connected systems, the current measured ground speed.	GBSD	No	ISO 11783-7
	0	0	254 74	74	65098	Electronic Transmission Controller 7	Transmission State Information	ETC7	No	J1939-71
	0	0	254 75	75	65099	Transmission Configuration 2	Contains transmission configuration information.	TCFG2	Yes	J1939-71
	0	0	254 76	76	65100	Military Lighting Command	The message contains parameters that control military specific lights.	ML	No	J1939-71
	0	0	254 77	77	65101	Total Averaged Information	Averages of information accumulated over the life of the engine	TAVG	No	J1939-71
	0	0	254 78	78	65102	Door Control 1	Used for door information.	DC1	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254 79		65103	Vehicle Dynamic Stability Control 1	Contains information which relates to the VDC system status.	VDC1	No	J1939-71
	0	0	254 80		65104	Battery Temperature	Contains battery temperature information.	BT1	No	J1939-71
	0	0	254 81		65105	Adaptive Cruise Control, Operator Input	The operator requested characteristics for the ACC systems operation.	ACC2	No	J1939-71
	0	0	254 82		65106	Vehicle Electrical Power #3	Vehicle Electrical Power 3	VEP3	No	J1939-71
	0	0	254 83		65107	Retarder Continuous Torque & Speed Limit		RTC1	No	J1939-71
	0	0	254 84		65108	Engine Continuous Torque & Speed Limit		ECT1	No	J1939-71
	0	0	254 85		65109	Gaseous Fuel Properties	Properties of the gaseous fuel	GFD	No	J1939-71
	0	0	254 86		65110	Tank Information 1	Contains information on various tank levels	TI1	No	J1939-71
	0	0	254 87		65111	Air Suspension Control 5	Used for damper stiffness information	ASC5	No	J1939-71
	0	0	254 88		65112	Air Suspension Control 4	Used for bellow pressure information	ASC4	No	J1939-71
	0	0	254 89		65113	Air Suspension Control 3	Used for height information	ASC3	No	J1939-71
	0	0	254 90		65114	Air Suspension Control 1	Used for suspension control information	ASC1	No	J1939-71
	0	0	254 91		65115	Forward Lane Image		FLI2	No	J1939-71
	0	0	254 92		65116	ISO 11992 (even) - Running Gear Equipment #2/2	Used for suspension information, direction from towed vehicle to towing vehicle.	RGE22	No	ISO 11992
	0	0	254 93		65117	ISO 11992 (odd) - General Purpose Message #1/2	Used for powertrain information, direction from towing vehicle to towed vehicle	GPM12	No	ISO 11992
	0	0	254 94		65118	ISO 11992 (even) - Running Gear Equipment #2/3	Used for tire monitoring, direction from towed vehicle to towing vehicle.	RGE23	No	ISO 11992
	0	0	254 95		65119	ISO 11992 (odd) - General Purpose Message #1/3	Used for powertrain information, direction from towing vehicle to towed vehicle	GPM13	No	ISO 11992
	0	0	254 96		65120	ISO 11992 (even) - General Purpose Message #2/3	Used for powertrain control, direction from towed vehicle to towing vehicle	GPM23	No	ISO 11992
	0	0	254 97		65121	ISO 11992 (odd) - General Purpose Message #1/4	Used for powertrain information, direction from towing vehicle to towed vehicle	GPM14	No	ISO 11992
	0	0	254 98		65122	ISO 11992 (even) - General Purpose Message #2/4	Used for powertrain control, direction from towed vehicle to towing vehicle	GPM24	No	ISO 11992
	0	0	254 99		65123	ISO 11992 (odd) - General Purpose Message #1/5	Used for powertrain information, direction from towing vehicle to towed vehicle	GPM15	No	ISO 11992
	0	0	254 100		65124	ISO 11992 (even) - General Purpose Message #2/5	Used for lights information, direction from towed vehicle to towing vehicle	GPM25	No	ISO 11992
	0	0	254 101		65125	ISO 11992 (odd) - General Purpose Message #1/6	Used for general information direction from towing vehicle to towed vehicle	GPM16	No	ISO 11992
	0	0	254 102		65126	Battery Main Switch Information		BM	No	J1939-71
	0	0	254 103		65127	Climate Control Configuration		CCC	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	104	65128	Vehicle Fluids	This parameter group transfers vehicle fluid information.	VF	No	J1939-71
	0	0	254	105	65129	Engine Temperature 3	This parameter group is used to transmit high resolution engine temperatures for control purposes.	ET3	No	J1939-71
	0	0	254	106	65130	Engine Fuel/lube systems		EFS	No	J1939-71
	0	0	254	107	65131	Driver's Identification		DI	Yes	J1939-71
	0	0	254	108	65132	Tachograph		TCO1	No	J1939-71
	0	0	254	109	65133	Heater Information		HTR	No	J1939-71
	0	0	254	110	65134	High Resolution Wheel Speed		HRW	No	J1939-71
	0	0	254	111	65135	Adaptive Cruise Control		ACC1	No	J1939-71
	0	0	254	112	65136	Combination Vehicle Weight		CVW	Yes	J1939-71
	0	0	254	113	65137	Laser Tracer Position		LTP	No	J1939-71
	0	0	254	114	65138	Laser Leveling System Blade Control		LBC	No	J1939-71
	0	0	254	115	65139	Laser Receiver Mast Position		LMP	No	J1939-71
	0	0	254	116	65140	Modify Leveling System Control Set Point		LSP	No	J1939-71
	0	0	254	117	65141	Laser Leveling System Vertical Deviation		LVD	No	J1939-71
	0	0	254	118	65142	Laser Leveling System Vertical Position Display Data		LVDD	No	J1939-71
	0	0	254	119	65143	Auxiliary Pressures		AP	No	J1939-71
	0	0	254	120	65144	Tire Pressure Control Unit Mode and Status		TP1	No	J1939-71
	0	0	254	121	65145	Tire Pressure Control Unit Target Pressures		TP2	No	J1939-71
	0	0	254	122	65146	Tire Pressure Control Unit Current Pressures		TP3	No	J1939-71
	0	0	254	123	65147	Combustion Time 1		CT1	No	J1939-71
	0	0	254	124	65148	Combustion Time 2		CT2	No	J1939-71
	0	0	254	125	65149	Combustion Time 3		CT3	No	J1939-71
	0	0	254	126	65150	Combustion Time 4		CT4	No	J1939-71
	0	0	254	127	65151	Combustion Time 5		CT5	No	J1939-71
	0	0	254	128	65152	Combustion Time 6		CT6	No	J1939-71
	0	0	254	129	65153	Fuel Information 2 (Gaseous)	Gaseous fuel information 2	GF12	No	J1939-71
	0	0	254	130	65154	Ignition Timing 1		IT1	No	J1939-71
	0	0	254	131	65155	Ignition Timing 2		IT2	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
		0	0	254 132	65156	Ignition Timing 3		IT3	No	J1939-71
		0	0	254 133	65157	Ignition Timing 4		IT4	No	J1939-71
		0	0	254 134	65158	Ignition Timing 5		IT5	No	J1939-71
		0	0	254 135	65159	Ignition Timing 6		IT6	No	J1939-71
		0	0	254 136	65160	Ignition Transformer Secondary Output 1		ISO1	No	J1939-71
		0	0	254 137	65161	Ignition Transformer Secondary Output 2		ISO2	No	J1939-71
		0	0	254 138	65162	Ignition Transformer Secondary Output 3		ISO3	No	J1939-71
		0	0	254 139	65163	Gaseous Fuel Pressure		GFP	No	J1939-71
		0	0	254 140	65164	Auxiliary Analog Information	Auxiliary Analog Information	AAI	No	J1939-71
		0	0	254 141	65165	Vehicle Electrical Power #2	Voltage data for the main vehicle Power Distribution system.	VEP2	No	J1939-71
		0	0	254 142	65166	Service 2		S2	Yes	J1939-71
		0	0	254 143	65167	Supply Pressure 2		SP2	No	J1939-71
		0	0	254 144	65168	Engine Torque History		ETH	Yes	J1939-71
		0	0	254 145	65169	Fuel Leakage		FL	No	J1939-71
		0	0	254 146	65170	Engine Information		EI	No	J1939-71
		0	0	254 147	65171	Engine Electrical System/Module Information		EES	No	J1939-71
		0	0	254 148	65172	Engine Auxiliary Coolant		EAC	No	J1939-71
		0	0	254 149	65173	Rebuild Information		RBI	No	J1939-71
		0	0	254 150	65174	Turbocharger Wastegate		TCW	No	J1939-71
		0	0	254 151	65175	Turbocharger Information 5		TCI5	No	J1939-71
		0	0	254 152	65176	Turbocharger Information 4		TCI4	No	J1939-71
		0	0	254 153	65177	Turbocharger Information 3		TCI3	No	J1939-71
		0	0	254 154	65178	Turbocharger Information 2		TCI2	No	J1939-71
		0	0	254 155	65179	Turbocharger Information 1		TCI1	No	J1939-71
		0	0	254 156	65180	Main Bearing Temperature 3		MBT3	No	J1939-71
		0	0	254 157	65181	Main Bearing Temperature 2		MBT2	No	J1939-71
		0	0	254 158	65182	Main Bearing Temperature 1		MBT1	No	J1939-71
		0	0	254 159	65183	Exhaust Port Temperature 5		EPT5	No	J1939-71
		0	0	254 160	65184	Exhaust Port Temperature 4		EPT4	No	J1939-71
		0	0	254 161	65185	Exhaust Port Temperature 3		EPT3	No	J1939-71
		0	0	254 162	65186	Exhaust Port Temperature 2		EPT2	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	163	65187	Exhaust Port Temperature 1		EPT1	No	J1939-71
	0	0	254	164	65188	Engine Temperature 2		ET2	No	J1939-71
	0	0	254	165	65189	Intake Manifold Information 2		IMT2	No	J1939-71
	0	0	254	166	65190	Intake Manifold Information 1		IMT1	No	J1939-71
	0	0	254	167	65191	Alternator Temperature		AT	No	J1939-71
	0	0	254	168	65192	Articulation Control		AC	No	J1939-71
	0	0	254	169	65193	Exhaust Oxygen 1		EO1	No	J1939-71
	0	0	254	170	65194	Alternate Fuel 2		AF2	No	J1939-71
	0	0	254	171	65195	Electronic Transmission Controller 6		ETC6	No	J1939-71
	0	0	254	172	65196	Wheel Brake Lining Remaining Information		EBC4	No	J1939-71
	0	0	254	173	65197	Wheel Application Pressure High Range Information		EBC3	No	J1939-71
	0	0	254	174	65198	Air Supply Pressure	Air Supply Pressure	AIR1	No	J1939-71
	0	0	254	175	65199	Fuel Consumption (Gaseous)		GFC	No	J1939-71
	0	0	254	176	65200	Trip Time Information 2		TTI2	No	J1939-71
	0	0	254	177	65201	ECU History		EH	No	J1939-71
	0	0	254	178	65202	Fuel Information 1 (Gaseous)		GFI1	No	J1939-71
	0	0	254	179	65203	Fuel Information (Liquid)		LFI	No	J1939-71
	0	0	254	180	65204	Trip Time Information 1		TTI1	No	J1939-71
	0	0	254	181	65205	Trip Shutdown Information		TSI	No	J1939-71
	0	0	254	182	65206	Trip Vehicle Speed/Cruise Distance Information		TVI	No	J1939-71
	0	0	254	183	65207	Engine Speed/Load Factor Information		LF	No	J1939-71
	0	0	254	184	65208	Trip Fuel Information (Gaseous)		GTFI	No	J1939-71
	0	0	254	185	65209	Trip Fuel Information (Liquid)		LTFI	No	J1939-71
	0	0	254	186	65210	Trip Distance Information		TDI	No	J1939-71
	0	0	254	187	65211	Trip Fan Information		TFI	No	J1939-71
	0	0	254	188	65212	Compression/Service Brake Information		CBI	No	J1939-71
	0	0	254	189	65213	Fan Drive	This parameter group transfers status and measured information on the engine coolant fan.	FD	No	J1939-71
	0	0	254	190	65214	Electronic Engine Controller 4		EEC4	No	J1939-71
	0	0	254	191	65215	Wheel Speed Information		EBC2	No	J1939-71
	0	0	254	192	65216	Service Information		SERV	Yes	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	0	254	193	65217	High Resolution Vehicle Distance		VDHR	No	J1939-71
	0	0	254	194	65218	Electronic Retarder Controller 2		ERC2	No	J1939-71
	0	0	254	195	65219	Electronic Transmission Controller 5		ETC5	No	J1939-71
	0	0	254	196	65220	Reserved for ISO 11992		EBS22	No	ISO 11992
	0	0	254	197	65221	Electronic Transmission Controller 4		ETC4	No	J1939-71
	0	0	254	198	65222	Reserved for ISO 11992		EBS23	No	ISO 11992
	0	0	254	199	65223	Electronic Transmission Controller 3		ETC3	No	J1939-71
	0	0	254	200	65224	Reserved for ISO 11992		GPM22	No	ISO 11992
	0	0	254	201	65225	Reserved for ISO 11992		EBS12	No	ISO 11992
	0	0	254	202	65226	Active Diagnostic Trouble Codes	Active Diagnostic Trouble Codes	DM1	Yes	J1939-73
	0	0	254	203	65227	Previously Active Diagnostic Trouble Codes		DM2	Yes	J1939-73
	0	0	254	204	65228	Diagnostics Data Clear/Reset for Previously Active DTCs		DM3	No	J1939-73
	0	0	254	205	65229	Freeze Frame Parameters		DM4	Yes	J1939-73
	0	0	254	206	65230	Diagnostic Readiness 1		DM5	Yes	J1939-73
	0	0	254	207	65231	Pending DTCs		DM6	Yes	J1939-73
	0	0	254	208	65232	Test Results for Non-continuously Monitored Systems		DM8	Yes	J1939-73
	0	0	254	209	65233	Oxygen Sensor Test Results		DM9	No	J1939-73
	0	0	254	210	65234	Non-continuously Monitored System Test Identifiers Support		DM10	No	J1939-73
	0	0	254	211	65235	Diagnostic Data Clear/Reset for Active DTCs		DM11	No	J1939-73
	0	0	254	212	65236	Emissions Related Active DTCs		DM12	Yes	J1939-73
	0	0	254	213	65237	Alternator Information		AS	No	J1939-71
	0	0	254	214	65238	Reserved for Network Management		RESV1	No	J1939-81
	0	0	254	215	65239	Reserved		RESV2	No	J1939-81
	0	0	254	216	65240	Commanded Address	Message that is used to assign a source address to a specific Controller Application Name.	CA	Yes	J1939-81
	0	0	254	217	65241	Auxiliary Input/Output Status 1	AUXIO PGNs are intended for use in which fixed mapping to functions is not possible.	AUXIO1	No	J1939-71
	0	0	254	218	65242	Software Identification		SOFT	Yes	J1939-71
	0	0	254	219	65243	Engine Fluid Level/Pressure 2		EFL/P2	No	J1939-71
	0	0	254	220	65244	Idle Operation		IO	Yes	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
		0	0	254 221	65245	Turbocharger		TC	No	J1939-71
		0	0	254 222	65246	Air Start Pressure		AIR2	No	J1939-71
		0	0	254 223	65247	Electronic Engine Controller 3		EEC3	No	J1939-71
		0	0	254 224	65248	Vehicle Distance		VD	No	J1939-71
		0	0	254 225	65249	Retarder Configuration		RC	Yes	J1939-71
		0	0	254 226	65250	Transmission Configuration	Total message length depends on total number of forward and reverse gear ratios.	TCFG	Yes	J1939-71
		0	0	254 227	65251	Engine Configuration 1	Engine configuration information	EC1	Yes	J1939-71
		0	0	254 228	65252	Shutdown		SHUTDN	No	J1939-71
		0	0	254 229	65253	Engine Hours, Revolutions		HOURS	No	J1939-71
		0	0	254 230	65254	Time/Date		TD	No	J1939-71
		0	0	254 231	65255	Vehicle Hours		VH	No	J1939-71
		0	0	254 232	65256	Vehicle Direction/Speed		VDS	No	J1939-71
		0	0	254 233	65257	Fuel Consumption (Liquid)		LFC	No	J1939-71
		0	0	254 234	65258	Vehicle Weight		VW	No	J1939-71
		0	0	254 235	65259	Component Identification		CI	Yes	J1939-71
		0	0	254 236	65260	Vehicle Identification		VI	Yes	J1939-71
		0	0	254 237	65261	Cruise Control/Vehicle Speed Setup		CCSS	No	J1939-71
		0	0	254 238	65262	Engine Temperature 1		ET1	No	J1939-71
		0	0	254 239	65263	Engine Fluid Level/Pressure 1		EFL/P1	No	J1939-71
		0	0	254 240	65264	Power Takeoff Information		PTO	No	J1939-71
		0	0	254 241	65265	Cruise Control/Vehicle Speed		CCVS	No	J1939-71
		0	0	254 242	65266	Fuel Economy (Liquid)		LFE	No	J1939-71
		0	0	254 243	65267	Vehicle Position		VP	No	J1939-71
		0	0	254 244	65268	Tire Condition	Tire Condition Message	TIRE	No	J1939-71
		0	0	254 245	65269	Ambient Conditions		AMB	No	J1939-71
		0	0	254 246	65270	Inlet/Exhaust Conditions 1		IC1	No	J1939-71
		0	0	254 247	65271	Vehicle Electrical Power 1		VEP1	No	J1939-71
		0	0	254 248	65272	Transmission Fluids 1		TRF1	No	J1939-71
		0	0	254 249	65273	Axle Information	Axle information message	AI	No	J1939-71
		0	0	254 250	65274	Brakes		B	No	J1939-71
		0	0	254 251	65275	Retarder fluids		RF	No	J1939-71
		0	0	254 252	65276	Dash Display		DD	No	J1939-71

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
		0	0	254 253	65277	Alternate Fuel 1		A1	No	J1939-71
		0	0	254 254	65278	Auxiliary Water Pump Pressure		AWPP	No	J1939-71
		0	0	254 255	65279	Water in Fuel Indicator		WFI	No	J1939-71
		0	0	255 0	65280	Proprietary B (first entry)		PropB_00	Yes	J1939-21
		0	0	255 255	65535	Proprietary B (last entry)		PropB_FF	Yes	J1939-21
		0	1	237 DA	126208	NMEA - Request/Command/Acknowledge group function	The Request / Command / Acknowledge Group type of function is defined by first field.		No	NMEA 2000
		0	1	238 DA	126464	PGN List - Transmit/Receive PGN's group function	The Transmit / Receive PGN List Group type of function is defined by first field.		No	NMEA 2000
		0	1	239 DA	126720	Proprietary A2	This proprietary PG uses the Destination Specific PDU Format allowing manufacturers to direct their proprietary communications to a specific destination node.	PropA2	Yes	J1939-21
		0	1	240 16	126992	System Time	The purpose of this PGN is to provide a regular transmission of UTC time and date.		No	NMEA 2000
		0	1	240 20	126996	Product Information	Provides product information onto the network that could be important for determining quality of data coming from this product.		No	NMEA 2000
		0	1	240 22	126998	Configuration Information	Free-form alphanumeric fields describing the installation (e.g., starboard engine room location) of the device.		No	NMEA 2000
		0	1	241 5	127237	Heading/Track Control	Sends Commands to, and receives data from, heading control systems.		No	NMEA 2000
		0	1	241 13	127245	Rudder	Rudder order command in direction or angle with current rudder angle reading.		No	NMEA 2000
		0	1	241 18	127250	Vessel Heading	Heading sensor value with a flag for True or Magnetic.		No	NMEA 2000
		0	1	241 19	127251	Rate of Turn	Rate of Turn PGN added in version 1.004 of this standard.		No	NMEA 2000
		0	1	241 25	127257	Attitude	This PGN provides a single transmission that describes the position of a vessel relative to both horizontal and vertical planes.		No	NMEA 2000
		0	1	242 0	127488	Engine Parameters, Rapid Update	Provides data with a high update rate for a specific engine in a single frame message.		No	NMEA 2000
		0	1	242 1	127489	Engine Parameters, Dynamic	Used to provide real-time operational data and status relevant to a specific engine, indicated by the engine instance field.		No	NMEA 2000
		0	1	242 5	127493	Transmission Parameters, Dynamic	Used to provide the operational state and internal operating parameters of a specific transmission.		No	NMEA 2000

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	1	242	9	127497	Trip Parameters, Small Craft	Trip engine hours and fuel consumption.		No	NMEA 2000
	0	1	242	10	127498	Engine Parameters, Static	Provides identification information and rated engine speed for the engine indicated by the engine instance field.		No	NMEA 2000
	0	1	242	13	127501	Binary Switch Bank Status	Universal status report for multiple banks of two-state indicators.		No	NMEA 2000
	0	1	242	14	127502	Switch Bank Control	Universal commands to multiple banks of two-state devices.		No	NMEA 2000
	0	1	242	17	127505	Fluid Level	Fluid Level contains an instance number, level of fluid, and type of fluid.		No	NMEA 2000
	0	1	242	20	127508	Battery Status	Provides parametric data for a specific battery, indicated by the battery instance field.		No	NMEA 2000
	0	1	245	3	128259	Speed	The purpose of this PGN is to provide a single transmission that describes the motion of a vessel.		No	NMEA 2000
	0	1	245	11	128267	Water Depth	Water depth relative to the transducer and offset of the measuring transducer.		No	NMEA 2000
	0	1	245	19	128275	Distance Log	This PGN provides the cumulative voyage distance traveled since the last reset.		No	NMEA 2000
	0	1	246	8	128520	Tracked Target Data	Message for reporting status and target data from tracking radar external devices.		No	NMEA 2000
	0	1	248	1	129025	Position, Rapid Update	This PGN provides latitude and longitude referenced to WGS84.		No	NMEA 2000
	0	1	248	2	129026	COG & SOG, Rapid Update	This PGN is a single frame PGN that provides Course Over Ground (COG) and Speed Over Ground (SOG).		No	NMEA 2000
	0	1	248	5	129029	GNSS Position Data	This PGN conveys a comprehensive set of Global Navigation Satellite System (GNSS) parameters, including position information.		No	NMEA 2000
	0	1	248	9	129033	Time & Date	This PGN has a single transmission that provides: UTC Time, UTC Date, and Local offset.		No	NMEA 2000
	0	1	248	20	129044	Datum	Local geodetic datum and datum offsets from a reference datum.		No	NMEA 2000
	0	1	248	21	129045	User Datum Settings	Transformation parameters for converting from WGS-84 to other Datums.		No	NMEA 2000
	0	1	249	3	129283	Cross Track Error	This PGN provides the magnitude of position error perpendicular to the desired course.		No	NMEA 2000
	0	1	249	4	129284	Navigation Data	This PGN provides essential navigation data for a route following.		No	NMEA 2000

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	1	249	11	129291	Set & Drift, Rapid Update	The Set and Drift effect on the Vessel is the direction and the speed of a current.		No	NMEA 2000
	0	1	249	21	129301	Time to/from Mark	Time to go to or elapsed from a generic mark, that may be non-fixed.		No	NMEA 2000
	0	1	249	22	129302	Bearing and Distance between two Marks	Bearing and distance from the origin mark to the destination mark, calculated at the origin mark, for any two arbitrary generic marks.		No	NMEA 2000
	0	1	250	2	129538	GNSS Control Status	GNSS common satellite receiver parameter status		No	NMEA 2000
	0	1	250	3	129539	GNSS DOPs	This PGN provides a single transmission containing GNSS status and dilution of precision components (DOP).		No	NMEA 2000
	0	1	250	4	129540	GNSS Sats in View	GNSS information on current satellites in view tagged by sequence ID. Information includes PRN, elevation, azimuth, and SNR.		No	NMEA 2000
	0	1	250	5	129541	GPS Almanac Data	This PGN provides a single transmission that contains relevant almanac data for GPS products.		No	NMEA 2000
	0	1	250	6	129542	GNSS Pseudorange Noise Statistics	GNSS pseudorange measurement noise statistics can be translated in the position domain.		No	NMEA 2000
	0	1	250	9	129545	GNSS RAIM Output	This PGN is used to provide the output from a GNSS Receiver's Receiver Autonomous Integrity Monitoring (RAIM) process.		No	NMEA 2000
	0	1	250	10	129546	GNSS RAIM Settings	This PGN is used to report the control parameters for a GNSS Receiver Autonomous Integrity Monitoring (RAIM) process.		No	NMEA 2000
	0	1	250	11	129547	GNSS Pseudorange Error Statistics	This PGN is used to support Receiver Autonomous Integrity Monitoring (RAIM).		No	NMEA 2000
	0	1	250	13	129549	DGNSS Corrections	This PGN provides a means to pass differential GNSS corrections between NMEA 2000 devices.		No	NMEA 2000
	0	1	250	14	129550	GNSS Differential Correction Receiver Interface	GNSS common differential correction receiver parameter status.		No	NMEA 2000
	0	1	250	15	129551	GNSS Differential Correction Receiver Signal	GNSS differential correction receiver status tagged by sequence ID.		No	NMEA 2000
	0	1	250	20	129556	GLONASS Almanac Data	This PGN provides a single transmission that contains relevant almanac data for Glonass products.		No	NMEA 2000
	0	1	251	7	129799	Radio Frequency/Mode/Power	This PGN provides status and control for a Radiotelephone, connected to a NMEA 2000 network.		No	NMEA 2000

Rev	EDP	DP	PF	PS	PGN	Parameter Group Label	Description	Acronym	MP	PGN Doc
	0	1	251	16	129808	DSC Call Information	This PGN provides Digital Selective Calling (DSC) data according to ITU M.493-9 with optional expansion according to ITU M.821-		No	NMEA 2000
	0	1	252	4	130052	Loran-C TD Data	This provides Time Difference (TD) lines of position of Loran-C signals relative to a single Group Repetition Interval.		No	NMEA 2000
	0	1	252	5	130053	Loran-C Range Data	This provides Propagation times (Ranges) of Loran-C signals relative to a single Group Repetition Interval.		No	NMEA 2000
	0	1	253	2	130306	Wind Data	Direction and speed of Wind.		No	NMEA 2000
	0	1	253	6	130054	Loran-C Signal Data	SNR, ECD, and ASF values of Loran-C signals.		No	NMEA 2000
	0	1	253	6	130310	Environmental Parameters	Local atmospheric environmental conditions		No	NMEA 2000
	0	1	253	16	130320	Tide Station Data	Tide station measurement data including station location, numeric identifier, and name.		No	NMEA 2000
	0	1	253	17	130321	Salinity Station Data	Salinity station measurement data including station location, numeric identifier, and name.		No	NMEA 2000
	0	1	253	18	130322	Current Station Data	Current station measurement data including station location, numeric identifier, and name.		No	NMEA 2000
	0	1	253	19	130323	Meteorological Station Data	Meteorological station measurement data including station location, numeric identifier, and name.		No	NMEA 2000
	0	1	253	20	130324	Moored Buoy Station Data	Moored buoy measurement data including station location and numeric identifier.		No	NMEA 2000
	0	1	254	16	130576	Small Craft Status	Provides data on various small craft control surfaces and speed through the water.		No	NMEA 2000
	0	1	254	17	130577	Direction Data	The purpose of this PGN is to group three fundamental vectors related to vessel motion.		No	NMEA 2000
	0	1	254	18	130578	Vessel Speed Components	This PGN provides a single transmission that accurately describes the speed of a vessel by component vectors.		No	NMEA 2000

APPENDIX B

ADDRESS AND IDENTITY ASSIGNMENTS

Table B1
J1939 Industry Groups

Rev	Industry Group	Industry	Description
	0	Global, applies to all	
	1	On-Highway Equipment	
	2	Agricultural and Forestry Equipment	
	3	Construction Equipment	
	4	Marine	
	5	Industrial-Process Control-Stationary (Gen-Sets)	
	6	Reserved for future assignment by SAE	
	7	Reserved for future assignment by SAE	

Table B2
J1939 Preferred Addresses
Industry Group #0 – Global

Note: Preferred Addresses 128 thru 247 are Industry Group specific. See Tables B3 thru B9.

Rev	SA	Controller Application	Comments	Associated NAME Function
	0	Engine #1	The #1 on the Engine CA is to identify that this is the first PA being used for the particular function, Engine. It may only be used for the NAME Function of 0, Function Instance 0, and an ecu instance of 0, which is commonly know as the "first engine".	0
	1	Engine #2	The #2 on the Engine CA is to identify that this is the second PA available for use for the function, Engine. It may be used by the "second" engine (Function 0, Function Instance 1, ECU Instance 0), but it may also be used by the second ecu on the first engine (Function 0, Function Instance 0, ECU Instance 1), if there is no second engine.	0
	2	Turbocharger	Turbocharger used on the engine.	
	3	Transmission #1	The first transmission - may only be used for the NAME Function of 3, Function Instance 0, and an ecu instance of 0.	3
	4	Transmission #2	The second PA available for use for the function, Transmission. It may be used by the "second" transmission (Function 3, Function Instance 1, ECU Instance 0), but it may also be used by the second ecu on the first transmission (Function 3, Function Instance 0, ECU Instance 1), if there is no second transmission.	3

Rev	SA	Controller Application	Comments	Associated NAME Function
	5	Shift Console - Primary	The shift console mounted in the normal drivers position	5
	6	Shift Console - Secondary	A shift console mounted remotely from the normal drivers position (May not be used for any ecu instances of the primary shift console)	5
	7	Power TakeOff - (Main or Rear)		6
	8	Axle - Steering		7
	9	Axle - Drive #1	The first drive axle - may only be used for the NAME Function of 8, Function Instance 0, and an ecu instance of 0.	8
	10	Axle - Drive #2	The second PA available for use for the function, Axle, Drive. It may be used by the "second" drive axle (Function 8, Function Instance 1, ECU Instance 0), but it may also be used by the second ecu on the first drive axle (Function 8, Function Instance 0, ECU Instance 1), if there is no second drive axle.	8
	11	Brakes - System Controller		9
	12	Brakes - Steer Axle		10
	13	Brakes - Drive axle #1	The brakes on the first drive axle - may only be used for the NAME Function of 11, Function Instance 0, and an ecu instance of 0.	11
	14	Brakes - Drive Axle #2	The second PA available for use for the function, Brakes on a Drive Axle. It may be used by the "second" drive axle brakes (Function 11, Function Instance 1, ECU Instance 0), but it may also be used by the second ecu on the first drive axle brakes (Function 11, Function Instance 0, ECU Instance 1), if there is no second drive axle brakes.	11
	15	Retarder - Engine	Engine Compression Braking	12
	16	Retarder - Driveline		13
	17	Cruise Control	Speed-based control	14
	18	Fuel System		15
	19	Steering Controller		16
	20	Suspension - Steer Axle		17
	21	Suspension - Drive Axle #1	The suspension on the first drive axle - may only be used for the NAME Function of 18, Function Instance 0, and an ecu instance of 0.	18
	22	Suspension - Drive Axle #2	The second PA available for use for the function, suspension on drive axle. It may be used by the "second" drive axle's suspension system (Function 18, Function Instance 1, ECU Instance 0), but when there is no second drive axle it may be used by the second ecu on the first drive axle's suspension (Function 18, Function Instance 0, ECU Instance 1).	18
	23	Instrument Cluster #1	The first instrument cluster - may only be used for the NAME Function of 19, Function Instance 0, and an ecu instance of 0.	19
	24	Trip Recorder		20

Rev	SA	Controller Application	Comments	Associated NAME Function
	25	Passenger-Operator Climate Control #1	The first climate control - may only be used for the NAME Function of 21, Function Instance 0, and an ecu instance of 0, and must be associated with the driver (operator) climate control, when there are multiple climate control systems.	21
	26	Alternator/Electrical Charging System	Vehicle's primary charging controller	53
	27	Aerodynamic Control		22
	28	Vehicle Navigation		23
	29	Vehicle Security		24
	30	Electrical System	This may include Load Centers, Fuseboxes, & Power Distribution boards	67
	31	Starter System		59
	32	Tractor-Trailer Bridge #1	The first Tractor mounted bridge leading to trailer(s) - may only be used for the NAME Function of , Function Instance 0, and an ecu instance of 0.	
	33	Body Controller		26
	34	Auxiliary Valve Control		
	35	Hitch Control	Straight truck hitch (NOT Ag hitch – it is in IG 2)	
	36	Power TakeOff (Front or Secondary)		27
	37	Off Vehicle Gateway		28
	38	Virtual Terminal (in cab)		29
	39	Management Computer #1	The first Management Computer - may only be used for the NAME Function of 30, Function Instance 0, and an ecu instance of 0.	30
	40	Cab Display #1	The first Cab Display - may only be used for the NAME Function of 60, Function Instance 0, and an ecu instance of 0.	60
	41	Retarder, Exhaust, Engine #1	The first engine exhaust retarder - may only be used for the NAME Function of 12, Function Instance 0, and an ecu instance of 0.	12
	42	Headway Controller	Forward-looking collision warning, collision avoidance, speed controller, or speed matching	32
	43	On-Board Diagnostic Unit		62
	44	Retarder, Exhaust, Engine #2	The second PA available for use for the function, engine exhaust retarder. It may be used by the "second" engine's exhaust retarder (Function 12, Function Instance 1, ECU Instance 0), but in cases without a second engine it may also be used by the second exhaust retarder on the first engine or by the second ecu on the first exhaust retarder on the first engine (Function 12, Function Instance 0, ECU Instance 1).	12
	45	Endurance Braking System		64
	46	Hydraulic Pump Controller		34
	47	Suspension - System Controller #1	The first Suspension - System Controller - may only be used for the NAME Function of 35, Function Instance 0, and an ecu instance of 0.	35
	48	Pneumatic - System Controller		36

Rev	SA	Controller Application	Comments	Associated NAME Function
	49	Cab Controller - Primary		37
	50	Cab Controller - Secondary		37
	51	Tire Pressure Controller		38
	52	Ignition Control Module #1	The first Ignition Control Module - may only be used for the NAME Function of 39, Function Instance 0, and an ecu instance of 0.	39
	53	Ignition Control Module #2	The second PA available for use for the function, Ignition Control Module. It may be used by the "second" engine's Ignition Control Module (Function 39, Function Instance 1, ECU Instance 0), but in cases without a second engine it may also be used by the second Ignition Control Module on the first engine or even by the second ecu on the first Ignition Control Module on the first engine (Function 39, Function Instance 0, ECU Instance 1) when there is only one Ignition Control Module Instance.	39
	54	Seat Control #1	The first seat control module - may only be used for the NAME Function of 40, Function Instance 0, and an ecu instance of 0, and must be associated with the driver seat, when there are multiple seats with separate controls.	40
	55	Lighting - Operator Controls		41
	56	Rear Axle Steering Controller #1		
	57	Water Pump Controller		42
	58	Passenger-Operator Climate Control #2	The second PA available for climate control - must be associated with the passenger climate control (NAME Function of 21, function instance 1, and an ecu instance of 0), when there are multiple climate control systems. If only one climate control system then may be used for the second ecu of the climate control (Function 21, Function Instance 0, ECU Instance of 1).	21
	59	Transmission Display - Primary	Display to operate specifically in conjunction with the transmission control mounted in the normal drivers position	43
	60	Transmission Display - Secondary	Secondary display to operate specifically in conjunction with the transmission control mounted remotely from the normal drivers position (May not be used for any ecu instances of the primary transmission display)	43
	61	Exhaust Emission Controller		44
	62	Vehicle Dynamic Stability Controller		45
	63	Oil Sensor		46
	64	Suspension - System Controller #2		35
	65	Information System Controller #1	The first Information System Controller - may only be used for the NAME Function of 47, Function Instance 0, and an ecu instance of 0.	47
	66	Ramp Control	Control of ramps, lifts, or tailgates	48
	67	Clutch/Converter Unit	Control of either the clutch and/or converter	49

Rev	SA	Controller Application	Comments	Associated NAME Function
	68	Auxiliary Heater #1	The first Auxiliary Heater - may only be used for the NAME Function of 50, Function Instance 0, and an ecu instance of 0.	50
	69	Auxiliary Heater #2	The second PA available for auxiliary heater - must be associated with the second auxiliary heater control (NAME Function of 50, Function Instance 1, and an ecu instance of 0), when there are multiple auxiliary heaters. If only one auxiliary heater control on the vehicle then may be used for the second ecu of the first auxiliary heater (Function 50, Function Instance 0, ECU Instance of 1).	50
	70	Engine Valve Controller	Electronic control used to control actuation of engine intake and/or exhaust valves	63
	71	Chassis Controller #1	The first Chassis Controller - may only be used for the NAME Function of 52, Function Instance 0, and an ecu instance of 0.	52
	72	Chassis Controller #2	The second PA available for chassis control - must be associated with the second chassis (NAME Function of 52, Function Instance 1, and an ecu instance of 0), when there are multiple chassis. If only one chassis on the vehicle then may be used for the second ecu of the first chassis (Function 52, Function Instance 0, ECU Instance of 1).	52
	73	Propulsion Battery Charger	A device used to charge propulsion batteries in an electric vehicle from an off-board source of electrical energy.	31
	74	Communications Unit, Cellular	Cellular communications device	54
	75	Communications Unit, Satellite	Satellite communications device	55
	76	Communications Unit, Radio	Radio communications device, either receiver only, transmitter only or transceiver	56
	77	Steering Column Unit	Device that gathers the operator inputs from switches/levers/etc located in and/or around the steering wheel/column	57
	78	Fan Drive Controller	Controls the main cooling fan operation	58
	79	Seat Control #2	The second PA available for seat controls - must be associated with the passenger seat (NAME Function of 40, Function Instance 1, and an ecu instance of 0), when there are multiple seats with separate controls. If only one seat then may be used for the second ecu of the seat control (Function 40, Function Instance 0, ECU Instance of 1).	40
	80	Parking brake controller	Module controlling the parking brake	9
	81	Aftertreatment system gas intake	Used for exhaust gas measurement such NOx or oxygen, etc.	68
	82	Aftertreatment system gas outlet	Used for exhaust gas measurement such NOx or oxygen, etc.	68
	83	Safety Restraint System	The safety restraint system can be for controlling activation of airbags, belt tensioners, roll over protection systems, etc.	
	84	Cab Display #2	The second Cab Display, this can used for supplemental displays such as retarder display, driver information display, etc.	

Rev	SA	Controller Application	Comments	Associated NAME Function
	85	thru 127 are reserved for future assignment by SAE		
	248	File Server / Printer	On-board file and/or print server	61
(R)	249	Off Board Diagnostic-Service Tool #1	The address for the first off board diagnostic service tool - may only be used for the NAME Function of 129, Industry Group 0, Function Instance 0, and an ECU instance of 0.	
(R)	250	Off Board Diagnostic-Service Tool #2	The second preferred address available for use for the function "Off Board Diagnostic-Service Tool". It should only be used by the "second" Off Board Diagnostic-Service Tool (Function 129, Industry Group 0, Function Instance 1, ECU Instance 0).	
(R)	251	On-Board Data Logger		
	252	Reserved for Experimental Use		
	253	Reserved for OEM		
	254	Null Address		
	255	GLOBAL (All-Any Node)		

Table B3
J1939 Preferred Addresses
Industry Group #1 – On-Highway Equipment

Rev	SA	ECU-Module	Definition
	128	thru 160 are reserved for future assignment by SAE but available for use by self configurable ECUs	Used for dynamic address assignment
	161	Fifth Wheel Smart Systems	Any systems relative to the operation & status/safety monitoring of the fifth wheel coupler system (including mounting bracket).
	162	Slope Sensor	A device that measures the slope along an axis.
	163	Catalyst Fluid Sensor	The Catalyst Fluid Sensor can measure the catalyst fluid temperature, the catalyst fluid level and the catalyst fluid quality.
	164	On Board Diagnostic Unit #2	Controller used to report On Board Diagnostics
	165	Rear Steering Axle Controller #2	Rear steering controller 2 for axle group
	166	Rear Steering Axle Controller #3	Rear steering controller 3 for axle group
	167	Instrument Cluster #2	A second optional, or auxiliary, gauge display for a vehicle
	168	Trailer #5 Bridge	Bridge for fifth towed Vehicle System (e.g. trailer or dolly)
	169	Trailer #5 Lighting-electrical	
	170	Trailer #5 Brakes (ABS-EBS)	
	171	Trailer #5 Reefer	
	172	Trailer #5 Cargo	
	173	Trailer #5 Chassis-Suspension	
	174	Other Trailer #5 Devices	Recommended address space for subnetwork devices
	175	Other Trailer #5 Devices	Recommended address space for subnetwork devices
	176	Trailer #4 Bridge	Bridge for fourth towed Vehicle System (e.g. trailer or dolly)
	177	Trailer #4 Lighting-electrical	
	178	Trailer #4 Brakes (ABS-EBS)	
	179	Trailer #4 Reefer	
	180	Trailer #4 Cargo	
	181	Trailer #4 Chassis-Suspension	
	182	Other Trailer #4 Devices	Recommended address space for subnetwork devices
	183	Other Trailer #4 Devices	Recommended address space for subnetwork devices
	184	Trailer #3 Bridge	Bridge for third towed Vehicle System (e.g. trailer or dolly)
	185	Trailer #3 Lighting-electrical	
	186	Trailer #3 Brakes (ABS-EBS)	
	187	Trailer #3 Reefer	
	188	Trailer #3 Cargo	
	189	Trailer #3 Chassis-Suspension	
	190	Other Trailer #3 Devices	Recommended address space for subnetwork devices
	191	Other Trailer #3 Devices	Recommended address space for subnetwork devices
	192	Trailer #2 Bridge	Bridge for second towed Vehicle System (e.g. trailer or dolly)
	193	Trailer #2 Lighting-electrical	

Rev	SA	ECU-Module	Definition
	194	Trailer #2 Brakes (ABS-EBS)	
	195	Trailer #2 Reefer	
	196	Trailer #2 Cargo	
	197	Trailer #2 Chassis-Suspension	
	198	Other Trailer #2 Devices	Recommended address space for subnetwork devices
	199	Other Trailer #2 Devices	Recommended address space for subnetwork devices
	200	Trailer #1 Bridge	Bridge for first towed Vehicle System (e.g. trailer or dolly)
	201	Trailer #1 Lighting-electrical	
	202	Trailer #1 Brakes (ABS-EBS)	
	203	Trailer #1 Reefer	
	204	Trailer #1 Cargo	
	205	Trailer #1 Chassis-Suspension	
	206	Other Trailer #1 Devices	Recommended address space for subnetwork devices
	207	Other Trailer #1 Devices	Recommended address space for subnetwork devices
	208 thru 227	are reserved for future assignment by SAE	To be used for individual preassigned addresses
	228	Steering Input Unit	May be used for measuring steering angle, steering torsion, steering force feedback, etc.
	229	Body Controller #2	This is for the second instance of a body controller on a chassis.
	230	Body-to-Vehicle Interface Control	Interface controller managing interaction of vehicle functions and body functions. May be a combination of body signals and gateway functionalities.
	231	Articulation Turntable Control	Controller managing the articulation turntable for joined body buses.
	232	Forward Road Image Processor	Views the road ahead for electronic recognition of several items
	233	Door Controller #3	
	234	Door Controller #4	
	235	Tractor/Trailer Bridge #2	Second tractor mounted bridge leading to trailer(s)
	236	Door Controller #1	cab drivers side or first door
	237	Door Controller #2	cab codrivers side or second door
	238	Tachograph	
	239	Electric Propulsion Control Unit #1	First or only on-board device converting torque commands to current commands in an electric vehicle system
	240	Electric Propulsion Control Unit #2	Second on-board device converting torque commands to current commands in an electric vehicle system
	241	Electric Propulsion Control Unit #3	Third on-board device converting torque commands to current commands in an electric vehicle system
	242	Electric Propulsion Control Unit #4	Fourth on-board device converting torque commands to current commands in an electric vehicle system
	243	Battery Pack Monitor #1	Device to monitor battery pack #1
	244	Battery Pack Monitor #2	Device to monitor battery pack #2
	245	Battery Pack Monitor #3	Device to monitor battery pack #3
	246	Battery Pack Monitor #4	Device to monitor battery pack #4
	247	Auxiliary Power Unit (APU)	Device used to provide auxiliary power, such as electrical, hydraulic, pneumatic, or rotary

Table B4
J1939 Preferred Addresses
Industry Group #2 – Agricultural and Forestry Equipment

Rev	SA	DC	DC Instance	Function	Description	Function Instance	ECU Instance
					All devices in IG2 using preferred addresses shall be self-configurable. IG2 devices shall include the value of the first full 32 bits of NAME field.		
	128			thru 207 are reserved for dynamic address assignment	Used for dynamic address assignment (self-configurable)		
	208			thru 238 are reserved for future assignment by SAE	Used for individual preassigned addresses		
	239	0	0	Depth Control		0	0
	240	0	0	Tractor ECU	Gateway between the power train and the implement bus	0	0
	241	7	0	Tailings Monitoring		0	0
	242	7	0	Header Control		0	0
	243	7	0	Product Loss Monitoring		0	0
	244	7	0	Product Moisture Sensing		0	0
	245	0	0	Non Virtual Terminal Display (Implement Bus)	A non Virtual Terminal cab display connected to the implement bus	0	0
	246	0	0	Operator Controls - Machine Specific		0	0
	247	0	0	Task Control (Mapping Computer)		0	0

Table B5
J1939 Preferred Addresses
Industry Group #3 – Construction Equipment

Rev	SA	ECU-Module	Definition
	128	thru 207 are reserved for future assignment by SAE	Used for dynamic address assignment (self-configurable)
	208	thru 223 are reserved for future assignment	Used for individual preassigned addresses
	224	Rotation Sensor	A device that measures the rotational angle around an axis.
	225	Lift Arm Controller	Controls the lift arms and tilt functions on a construction loader, skid steer loader, or similar machine. Refers to the main elevation and tilt functions of the machine's lift arms but may not include the control of the attachment itself.
	226	Slope Sensor	A device that measures the slope along an axis.
	227	Main Controller - Skid Steer Loader	Primary system controller for skid steer loader
	228	Loader Control	Controls the hydraulic system of the loader attachment of a loader/backhoe, wheel loader, skid steer, or similar vehicle
	229	Laser Tracer	A device that receives a laser strike and reports the vertical and horizontal position.
	230	Land Leveling System Display	This device displays position information at a remote location.
	231	Single Land Leveling System Supervisor	This device is the Land Leveling System Supervisor for a single control loop.
	232	Land Leveling Electric Mast	A device that moves a Sensor to maintain a specific position.
	233	Single Land Leveling System Operator Interface	A component that allows the user to control the Land Leveling System and display information about the operation of the system.
	234	Laser Receiver	A device that receives a laser strike, and reports the specific position.
	235	Supplemental Sensor Processing Unit #1	
	236	Supplemental Sensor Processing Unit #2	
	237	Supplemental Sensor Processing Unit #3	
	238	Supplemental Sensor Processing Unit #4	
	239	Supplemental Sensor Processing Unit #5	
	240	Supplemental Sensor Processing Unit #6	
	241	Engine Monitor #1	
	242	Engine Monitor #2	
	243	Engine Monitor #3	
	244	Engine Monitor #4	
	245	Engine Monitor #5	
	246	Engine Monitor #6	
	247	Engine Monitor #7	

Table B6
J1939 Preferred Addresses
Industry Group #4 – Marine Equipment

Rev	SA	ECU-Module	Definition
	128	thru 207 are reserved for future assignment by SAE	Used for dynamic address assignment (self-configurable)
	208	thru 235 are reserved for future assignment	Used for individual preassigned addresses
	236	Display #1 for Protection System for Marine Engines	The first ecu that provides the display of information and/or indicators associated specifically with the protection system on the first engine of a Marine System.
	237	Protection System for Marine Engines	The first ecu that controls the Protection functions on the first engine of a Marine System.
	238	Alarm System Control #1 for Marine Engines	The first ecu that controls the Alarm functions on the first engine of a Marine System.
	239	Engine #3	The Engine ECU for the third engine within a system.
	240	Engine #4	The Engine ECU for the fourth engine within a system.
	241	Engine #5	The Engine ECU for the fourth engine within a system.
	242	Marine Display #1	The first Marine Display for an engine.
	243	Marine Display #2	The second Marine Display for an engine.
	244	Marine Display #3	The third Marine Display for an engine.
	245	Marine Display #4	The fourth Marine Display for an engine.
	246	Marine Display #5	The fifth Marine Display for an engine.
	247	Marine Display #6	The sixth Marine Display for an engine.

Table B7
J1939 Preferred Addresses
Industry Group #5 – Industrial, Process Control, Stationary Equipment

Rev	SA	ECU-Module	Definition
	128	thru 207 are reserved for future assignment by SAE	Used for dynamic address assignment (self-configurable)
	208	thru 229 are reserved for future assignment	Used for individual preassigned addresses
	230	Generator Voltage Regulator	The voltage regulator controls the generator output voltage
	231	Engine #3	The Engine ECU for the third engine within a system.
	232	Engine #4	The Engine ECU for the fourth engine within a system.
	233	Engine #5	The Engine ECU for the fourth engine within a system.
	234	Generator Set Controller	Used for data collection and control of a generator system
	235	Supplemental Sensor Processing Unit #1	
	236	Supplemental Sensor Processing Unit #2	
	237	Supplemental Sensor Processing Unit #3	
	238	Supplemental Sensor Processing Unit #4	
	239	Supplemental Sensor Processing Unit #5	
	240	Supplemental Sensor Processing Unit #6	
	241	Engine Monitor #1	
	242	Engine Monitor #2	
	243	Engine Monitor #3	
	244	Engine Monitor #4	
	245	Engine Monitor #5	
	246	Engine Monitor #6	
	247	Engine Monitor #7	

Tables B8 through B9
J1939 PREFERRED ADDRESSES
(Industry Groups 6 to 7)
Reserved for future assignment

Table B10
J1939 Manufacturer Codes

Rev	Code	Manufacturer	Location
	0	Reserved	
	1	Allied Signal Inc.	Elyria, OH USA
	2	Allison Transmission, GMC	Indianapolis, IN USA
	3	Ametek, US Gauge Division	Sellersville, PA USA
	4	Ametek-Dixson	Grand Junction, CO USA
	5	AMP Inc.	Harrisburg, PA USA
	6	Berifors Electronics AB	Stockholm, Sweden
	7	Case Corp.	Burr Ridge, IL USA
	8	Caterpillar Inc.	Peoria, IL USA
	9	Chrysler Corp.	Auburn Hills, MI USA
	10	Cummins Inc (formerly Cummins Engine Co.)	Columbus, IN USA
	11	Dearborn Group Inc.	Indianapolis, IN & Farmington Hills, MI USA
	12	Deere & Company, Precision Farming	East Moline, IL USA
	13	Delco Electronics	Kokomo, IN USA
	14	Detroit Diesel Corporation	Detroit, MI USA
	15	Dickey-john Corp.	Auburn, IL USA
	16	Eaton Corp	Southfield, MI USA
	17	Eaton Corp, Corp Res & Dev	Milwaukee, WI USA
	18	Eaton Corp, Transmission Div.	Kalamazoo, MI USA
	19	Eaton Corp. Trucking Info Services	Clemmons, NC USA
	20	Eaton Ltd	Worsley, England
	21	Echlin Inc., Midland Brake Inc.	Kansas City, MO USA
	22	Ford Motor Co., Electronic Concepts & Systems	Dearborn, MI USA
	23	Ford Motor Co., Heavy Truck	Dearborn, MI USA
	24	Ford Motor Co., Vehicle Controls	Dearborn, MI USA
	25	Freightliner LLC	Portland, OR USA
	26	General Motors Corp, Service Technology Grp	Romulus, MI USA
	27	GMC	Troy, MI USA
	28	Grote Ind. Inc.	Madison, IN USA
	29	Hino Motors Ltd.	Tokyo, Japan
	30	Isuzu Motors Ltd	Kawasaki, Japan
	31	J Pollak Corp	Boston, MA USA
	32	Jacobs Vehicle Systems	Bloomfield, CT USA
	33	John Deere	Waterloo, IA USA
	34	Kelsey Hayes Co.	Livonia, MI USA
	35	Kenworth Truck Co.	Kirkland, WA USA
	36	Lucas Ind.	Solihull WMidInd, England
	37	Mack Trucks Inc.	Hagerstown, MD USA
	38	Micro Processor Systems Inc.	Sterling Hts, MI USA

Rev	Code	Manufacturer	Location
	39	Microfirm Inc.	Stillwater, OK USA
	40	Motorola AIEG Inc.	Northbrook, IL USA
	41	Motorola Inc.	Schaumburg, IL USA
	42	International Truck and Engine Corporation - Engine Electronics (formerly Navistar Intl Trans Co., Engine Electronics)	Warrenville, IL USA
	43	International Truck and Engine Corporation - Vehicle Electronics (formerly Navistar Intl Trans Corp.)	Warrenville, IL USA
	44	Nippondenso Co. Ltd.	Kariya Aichi, Japan
	45	PACCAR	Mount Vernon, WA USA
	46	Parasoft Computing Solutions	Winston Salem, NC USA
	47	Phillips Semiconductor	Sunnyvale, CA USA
	48	Pollak Alphabet	El Paso, TX USA
	49	RE America Inc.	Cleveland, OH USA
	50	Robert Bosch Corp	Broadview, IL USA
	51	Robert Bosch GmbH	Stuttgart, Germany
	52	Meritor Automotive, Inc. (formerly Rockwell Automotive)	Troy, MI USA
	53	Rockwell Land Transportation	Cedar Rapids, IA USA
	54	Meritor Wabco	Troy, MI USA
	55	Ryder System Inc.	Miami, FL USA
	56	SAIC	San Diego, CA USA
	57	Sauer-Danfoss Co (formerly Sauer Sundstrand Co.)	Minneapolis, MN USA
	58	SPX Corporation, OTC Div	Owatonna, MN USA
	59	VES Inc.	Rock Hill, SC USA
	60	Volvo Trucks North America Inc.	Greensboro, NC USA
	61	Volvo Truck Corp.	Gothenburg, Sweden
	62	Wabco	Hanover, Germany
	63	ZF Industries Inc.	Vernon Hills, IL USA
	64	unused (formerly SpectraPrecision Laserplane, then SpectraPhysics)	
	65	MAN Nutzfahrzeuge AG	Munich, Germany
	66	John Deere Construction Equipment Division	Dubuque, IA USA
	67	Funk Manufacturing Company	Coffeyville, KS USA
	68	Scania	Södertälje, Sweden
	69	Trimble Navigation	
	70	Flex-coil Limited	Saskatoon, SK Canada
	71	Vansco Electronics Ltd.	Winnipeg, MAN Canada
	72	Sisu Corporation	ESPOO, Finland
	73	LeTourneau, Inc.	Longview, TX USA
	74	Eaton Axle-Brake Division	Kalamazoo, MI USA
	75	Deere & Co, Agricultural Division	
	76	unused (formerly Deere & Co, Construction Division)	
	77	Deere Power Systems Group	
	78	Frank W. Murphy Manufacturing, Inc	Tulsa, OK USA

Rev	Code	Manufacturer	Location
	79	Daimler Benz AG - Engine Division (PBM)	Stuttgart, Germany
	80	Twin Disc, Inc.	Racine, WI USA
	81	Fire Research Corp.	Nesconset, NY USA
	82	Bobcat/Ingersoll-Rand (formerly Melroe/Ingersoll-Rand)	Fargo, ND USA
	83	Eaton VORAD Technologies	San Diego, CA USA
	84	New Holland UK Limited	Basildon, Essex, UK
	85	Kohler Co	Kohler, WI USA
	86	C. E. Niehoff & Company	Evanston, IL USA
	87	J.C. Bamford Excavators Ltd (JCB)	Rocester, Staffordshire, UK
	88	Satloc Precision GPS	Scottsdale, AZ USA
	89	Kverneland Group, Electronics Division	Nieuw-Vennep, Netherlands
	90	Knorr-Bremse Sfn GmbH	Munich, Germany
	91	BSG Bodensee Steuergeraete GmbH	Immenstaad, Germany
	92	Ag-Chem Equipment Co., Inc.	Minnetonka, MN USA
	93	Perkins Engines Company Ltd.	Peterborough, UK
	94	CNH Global N.V.	Racine, WI USA
	95	Pacific Insight Electronics Corp.	Nelson, BC Canada
	96	Mech@tronic IT GmbH	Hetzenhausen, Germany
	97	Ag Leader Technology, Inc.	Ames, IA USA
	98	Mueller-Elektronik GmbH & Co	Salzkotten, Germany
	99	International Transmissions Ltd (ITL)	Wrexham, North Wales, UK
	100	VDO Technik AG	Rüthi, Switzerland
	101	Sensoria	San Diego, CA USA
	102	AGCO GmbH & Co.	Marktoberdorf, Germany
	103	Agrocom GmbH & Co. Agrarsystem KG	Bielefeld, Germany
	104	Claas Selbstfahrende Erntemaschinen GmbH	Harsewinkel, Germany
	105	Kiepe Elektrik GmbH & Co. KG	Duesseldorf, Germany
	106	BAE Systems Controls, Inc.	Johnson City, NY USA
	107	Grimme Landmaschinen GmbH & Co. KG	Damme, Germany
	108	WTK-Elektronik GmbH	Neustadt, Germany
	109	LH Technologies ApS	Aabybro, Denmark
	110	EPIQ Sensor-Nite	Fenton, MI USA
	111	Maschinenfabrik Bernhard Krone GmbH	Spelle, Germany
	112	MECALAC	Annecy le Vieux, France
	113	Stress-Tek, Inc.	Kent, WA USA
	114	EControls, Inc.	San Antonio, TX USA
	115	NACCO Materials Handling Group, Inc.	Portland, OR USA
	116	BEELINE Technologies	Brisbane, QLD Australia
	117	HUSCO International	Waukesha, WI USA
	118	Intron GmbH	Schwaebisch Hall, Germany
	119	IntegriNautics	Menlo Park, CA USA
	120	RDS Technology Ltd	Minchinhampton, Stroud, UK

Rev	Code	Manufacturer	Location
	121	HED (Hydro Electronic Devices, Inc.)	Hartford, WI USA
	122	FG Wilson (Engineering) Limited	Larne, County Antrim, UK
	123	Basler Electric	Highland, IL USA
	124	Hydac Electronic	Saarbruecken, Germany
	125	Nevada Automotive Test Center	Carson City, NV USA
	126	Driver Tech	Salt Lake City, UT USA
	127	Holland USA	Holland, MI USA
	128	Gerhard Duecker GmbH & Co. KG	Stadtlohn, Germany
	129	OMNEX Control Systems Inc.	Port Coquitlam, BC, Canada
	130	Nido - Universal Machines B.V.	Holten, Netherlands
	131	ITT Industries	Eden Prairie, MN USA
	132	Mulag-Fahrzeugwerk	Oppenau, Germany
	133	Bucher Schoerling GmbH	Hannover, Germany
	134	Iris Technology Ltd	Lancaster, Lancs, UK
	135	Airmar Technology Corporation	Milford, NH USA
	136	Komatsu Ltd	Hiratsuka, Kanagawa, Japan
	137	Maretron	Phoenix AZ USA
	138	Georg Fritzmeier GmbH & Co. KG	Grosshelfendorf, Germany
	139	Caterpillar Trimble Control Technologies (CTCT), LLC	Dayton, OH USA
	140	Lowrance Electronics, Inc.	Tulsa, OK USA
	141	Thales Navigation Ltd.	Surrey, UK
	142	TRW Automotive (Commercial Steering Systems)	Lafayette, IN USA
	143	W. Gmeiner GmbH & Co.	Kummersbruck, Germany
	144	Mercury Marine	Fond du Lac, WI USA
	145	MurCal Controls	Palmdale, CA USA
	146	Maxima Technologies	Lancaster, PA USA
	147	Nautibus electronic GmbH	Quern, Germany
	148	Blue Water Data, Inc.	Salem, NJ USA
	149	Holset	Charleston, SC USA
	150	Fleetguard	Nashville, TN USA
	151	Raven Industries Inc. - Flow Controls Division	Sioux Falls, SD USA
	152	Elobau Elektrobauelemente GmbH & Co. KG	Leutkirch, Baden Württemberg, Germany
	153	Woodward, Industrial Controls Division	Fort Collins, CO USA
	154	Westerbeke Corporation	Taunton, MA USA
	155	Vetronix Corporation	Santa Barbara, CA
	156	ITT Industries - Cannon	Shakopee, MN USA
	157	ISSPRO Inc.	Portland, OR USA
	158	Firestone Industrial Products Company	Carmel, IN USA
	159	NTech Industries Inc	Ukiah, CA USA
	160	Nido	Holten, Netherlands
	161	Offshore Systems (UK) Ltd	New Milton, Hampshire, UK
	162	Axiomatic Technologies	Mississauga, ON Canada

Rev	Code	Manufacturer	Location
	163	BRP Inc.	Waukegan, IL USA
	164	DaimlerChrysler Off-Highway	Friedrichshafen, Germany
	165	CPAC Systems AB	Vastra Frolunda, Sweden
	166	Phoenix International	Fargo, ND USA
	167	JLG Industries Inc	McConnellsburg, PA USA
	168	Xantrex	Burnaby, BC Canada
	169	Marlin Technologies Inc.	Horicon, WI USA
	170	Computronics Corporation Ltd.	Bentley, WA Australia
	171	Wachendorff Elektronik GmbH & Co. KG	Geisenheim, Germany
	172	Yanmar Marine USA	Adairsville, GA USA
	173	Ryeso, Inc.	Palmdale, CA USA
	174	AB Volvo Penta	Goteburg, Sweden
	175	Veris Technologies, Inc.	Salina, KS USA
	176	Moritz Aerospace	Dublin, PA USA
	177	Diagnostic Systems Associates	Kalamazoo, MI USA
	178	Siemens VDO Automotive AG	Regensburg, Germany
	179	Midwest Technologies Illinois, LLC	Springfield, IL USA
	180	Smart Power Systems	Reed City, MI USA
	181	Coretronics, Inc.	Eagle, ID USA
	182	Vehicle Systems Engineering B.V.	Veenendaal, Netherlands
	183	KDS Controls, Inc	Troy, MI USA
	184	EIA Electronics	Aartselaar, Belguim
	185	Beede Electrical Instrument Company	Penacook, NH USA
	186	Altronic, Inc	Girard, OH USA
	187	Air-Weigh	Eugene, OR USA
	188	EMP Corp	Escanaba, MI USA
	189	QUALCOMM	San Diego, CA USA
	190	Hella KGaA Hueck & Co	Lippstadt, Germany
	191	XATA Corporation	Burnsville, MN USA
	192	Floscan	Seattle, WA USA
	193	Jeppesen Marine	Portland, OR USA
	194	TriMark Corporation	New Hampton, IA USA
	195	General Engine Products	Livonia, MI USA
	196	LEMKEN GmbH & Co KG	Alpen, Germany
	197	Mechron Power Systems	Ottawa, ON Canada
	198	Mystic Valley Communications	Mystic, CT USA
	199	Actia Corp	Elkhart, IN USA
	200	MGM Brakes	Charlotte, NC USA
	201	Disenos y Tecnologia S.A.	Barcelona, Spain
	202	Curtis Instruments, Inc	Mount Kisco, NY USA
	203	MILtronik GmbH	Hilden, Germany
	204	The Morey Corporation	Woodridge, IL USA
	205	SmarTire Systems Inc	Richmond, BC Canada

Rev	Code	Manufacturer	Location
	206	port GmbH	Halle, Germany
	207	Otto Engineering	Carpentersville, IL USA
	208	Drew Technologies, Inc	Whitmore Lake, MI USA
	209	Bell Equip. Co. SA (PTY) LTD	Richards Bay, South Africa
	210	Iteris, Inc.	Anaheim, CA USA
	211	DNA Group	Raleigh, NC USA
	212	Sure Power Industries, Inc	Tualatin, OR USA
	213	CNH Belgium N.V.	Zedelgem, Belgium
	214	MC elettronica Srl	Fiesso Umbertino, Rovigo, Italy
	215	Aetna Engineering/Fireboy-Xintex	Grand Rapids, MI USA
	216	Paneltronics Inc.	Hialeah Gardens, FL USA
	217	RM Michaelides Software & Elektronik GmbH	Fulda, Germany
	218	Gits Manufacturing Company	Creston, IA USA
	219	Cat OEM Solutions	Mossville, IL USA
	220	Beede Electrical Instrument Company, Inc	Penacook, NH USA
	221	SiE	Kempton/Allgaeu, Germany
	222	Generac Power Systems, Inc.	Waukesha, WI, USA
	1850	Teleflex	Limerick, PA USA
	1851	RayMarine	Portsmouth, Hampshire, UK
	1852	Navionics	Wareham, MA USA
	1853	Japan Radio Co	Seattle, WA USA
	1854	Northstar Technologies	Acton, MA USA
	1855	Furuno USA	Camas, WA USA
	1856	Trimble	Sunnyvale, CA USA
	1857	Simrad	Egersund, Norway
	1858	Litton	Charlottesville, VA USA
	1859	Kvasar AB	Kinnahult, Sweden
	1860	MMP	Fircrest, WA USA
	1861	Vector Cantech	Novi, MI USA
	1862	Sanshin	Shizuoka, Japan
	1863	Thomas G. Faria Co.	Uncasville, CT USA

Table B11
J1939 All Industry Inclusive Names

The NAME fields are described in Section 3.1.3 and in J1939-81, Section 4.1. This table defines the Lower 128 Functions which are independent of the Vehicle System or Industry Group. These functions are used with all 8 Industry Groups, which is a distinction from Industry Group 0 which is an Industry Group itself but applicable to all industries.

Rev	Value	NAME Function	Description
	0	Engine	While the function identifies what is typically the mechanical power source of the machine, the reference tends to be to the management system that controls the torque vs speed vs command (typically throttle) of said power source.
	1	Auxiliary Power Unit (APU)	Power source for operating systems without the use of the prime 'drive' engine.
	2	Electric Propulsion Control	Control system which operates the drive mechanism when it is electrically powered, such as battery-motor, or engine-generator-motor hybrids
	3	Transmission	A mechanical system for alter the speed vs torque output of the engine to a level usable by another system on the machine. Although again the network reference is actually to the system which controls the operation of said transmission.
	4	Battery Pack Monitor	Monitors the condition - charge, temperature, power remaining, etc. for an internal battery pack - typically used with electric propulsion
	5	Shift Control/Console	The device which determines and transmit onto the network the gear, the range, the operating mode or any or all of these that the operator desires for the transmission. (Not to be confused with transmission control which is Transmission)
	6	Power TakeOff - (Main or Rear)	The system which controls the mechanical power derived from a prime engine and used to operate auxiliary items such as compressors in on highway vehicles and such as implements in ag applications. This being the main or rear unit.
	7	Axle - Steering	Adjust attack angle as function of steering
	8	Axle - Drive	
	9	Brakes - System Controller	Controls service braking system electronically – might be any of a number of schemes – may also control (at least partly) the endurance braking system in the sense of an integrated control (application phased in with the service braking system).
	10	Brakes - Steer Axle	Control for actuating the service brakes on a steered axle
	11	Brakes - Drive axle	Control for actuating the service brakes on a drive axle
	12	Retarder - Engine	The control for the retarder capabilities of the engine. There are several types of retarders possible and these are defined within the parameter - Retarder Type, (SPN 901).
	13	Retarder - Driveline	The control for the retarder capabilities of the driveline. There are several types of retarders possible and these are defined within the parameter - Retarder Type, (SPN 901).
	14	Cruise Control	Control system for maintaining the vehicle's speed at a fixed operator selectable value with various over-rides linked to other systems
	15	Fuel System	Controls fuel flow from the tank to the filter to the water-removal/separator to the engine and then back to the tank.
	16	Steering Controller	Controls steering in steer-by-wire

Rev	Value	NAME Function	Description
	17	Suspension - Steer Axle	Control system for the suspension of a steered axle
	18	Suspension - Drive Axle	Control system for the suspension of a driven axle
	19	Instrument Cluster	A gauge display for a vehicle. Typically mounted in the cab within the driver's field of view and generally a somewhat limited display such as: dedicated dials or a small digit 7 segment display. See Cab Display for larger more elaborate display.
	20	Trip Recorder	A system for accumulating data versus travel of the vehicle (machine), since a specific starting point sometimes expressed in terms of distance or time traveled.
	21	Cab Climate Control	A system for controlling the climate within the cab of the vehicle (machine). Note: The operator controls (message) for this system should be designed to allow any source to transmit them.
	22	Aerodynamic Control	Modify drag by altering Body panels – lower air ferrings when dead heading, extend side panels when on interstate
	23	Vehicle Navigation	System associated with the vehicles physical location – may be as simple as display of current location, driving instructions from current to desired location, (do we need a separate guidance?).
	24	Vehicle Security	System for comparing operator provided data sequences against reference to verify that operation or certain operations should be allowed for the particular operator. Also may include functions to prevent unauthorized operations. Examples: unlocking doors, starting engine, ...
	25	Network Interconnect ECU	ECU for connecting different network segments together – may be bridge or gateway - see J1939 –31 for details For any vehicle system (tractor or trailer)
	26	Body Controller	May handle suspension control for the body sections independent from the axle sections - Controls the body (not chassis or cab) components
	27	Power TakeOff (Secondary or Front)	The system which controls the mechanical power derived from a prime engine and used to operate auxiliary items such as compressors in on highway vehicles and such as implements in ag applications. This being the secondary or front unit.
	28	Off Vehicle Gateway	ECU for connecting between vehicle network(s) and an off-vehicle system or network, such as fleet management. Connection may be wireless. Performs Gateway functions, i.e., filters messages, translates between protocols...
	29	Virtual Terminal (in cab)	A general purpose 'intelligent' display with a specific message set (J1939-72 or ISO 11783 –6) specifically mounted in cab for the operators use, which may be connected to the drive train segment of the network or to the implement bus segment which exists in an ag application
	30	Management Computer	Manages vehicle systems, i.e. powertrain.
	31	Propulsion Battery Charger	A device used to charge propulsion batteries in an electric vehicle from an off-board source of electrical energy.
	32	Headway Controller	Forward-looking collision avoidance, collision warning, speed controller, or speed matching
	33	System Monitor	
	34	Hydraulic Pump Controller	Pump which provides hydraulic power to operate installed equipment, such as: Man buckets, cranes, augers, shredders Example vehicles: Digger Derrick – plants telephone poles, Bucket Truck - - thus this is the controller for said pump
	35	Suspension - System Controller	A controller responsible for co-ordinating the over-all suspension of a vehicle. It may cause inter action between the axle suspension controls and the body controller

Rev	Value	NAME Function	Description
	36	Pneumatic - System Controller	
	37	Cab Controller	A controller located in/near vehicle cab to perform functions that are grouped together for convenience and proximity. May handle any number of vehicle specific items but not other specifically NAMED functions, such as: Instrument Cluster. A prime use would be to read cab mounted operator controls (not handled by any other specific device) and to then transmit the associated messages onto the network.
	38	Tire Pressure Control	The device providing centralised tire inflation
	39	Ignition Control Module	A device for altering the ignition of an engine and with which an engine controller may communicate.
	40	Seat Control	A system for controlling the seats (operator and passenger) within the cab of the vehicle (machine). May include position and suspension of seat. Note: The operator controls (message) for the seat system should be designed to allow any source to transmit them.
	41	Lighting - Operator Controls	The controller for sending the operator lighting controls messages when they are coming from a device dedicated to transmitting these specific messages on the network.
	42	Water Pump Control	Controller for a water pump mounted on the vehicle/machine. For Instance – Emergency equipment with pump for pumping water onto fire. A Utilities delivery truck for delivery fluids, such as water to remote areas.
	43	Transmission Display	Display designed specifically to display transmission information, such as the transmission gear.
	44	Exhaust Emission Control	
	45	Vehicle Dynamic Stability Control	
	46	Oil Sensor Unit	
	47	Information System Controller	Information management for the vehicle's application, such as transit passenger/fare monitoring, truck cargo management, etc. Handles grouping and processing data into information displays to be presented to driver. It also enforces the DI rules for interfacing with driver.
	48	Ramp Control	Loading unloading – chairlift, ramps, lifts, or tailgates
	49	Clutch/Converter Control	When transmission is distributed this handles torque converter lock-up or engine - transmission connection
	50	Auxiliary Heater	Primary heat is typically taken from the engine coolant. This is the heater for use without the prime 'drive' engine operating or when it is unable to supply sufficient heat. Can be fuel fired, electrical or other type of heating source and may use air, water, or other transfer media.
	51	Forward-Looking Collision Warning System	A system which detects and warns of impending collision with object in path of present forward travel - Not to be confused with #32, Headway Controller
	52	Chassis Controller	Controls the chassis (not body or cab) components - See web site for RLs definitions of Body, chassis, drivetrain to add – but still do not know what this is ???
	53	Alternator/Charging System	Vehicle's primary on-board charging controller - Alternator used to generate electrical power for vehicle electrical system and storage battery.
	54	Communications Unit, Cellular	Radio communications device designed specifically to communicate via the 'Cellular telephone system'. May be either receiver only, transmitter only or transceiver.

Rev	Value	NAME Function	Description
	55	Communications Unit, Satellite	Radio communications device designed specifically to communicate via some satellite system. May be either receiver only, transmitter only or transceiver.
	56	Communications Unit, Radio	Radio communications device designed specifically to communicate via a terrestrial point to point system. May be either receiver only, transmitter only or transceiver.
	57	Steering Column Unit	Device that gathers the operator inputs from switches/levers/etc located in and/or around the steering wheel/column and transmits the associated messages on the network., when a separate NAME is needed for this device (i.e. other devices might be sending the messages and this device not exist on the network).
	58	Fan Drive Control	Primary control system affecting the operation of the main cooling fan on the engine coolant. Other systems may send commands or requests to this device.
	59	Starter	A mechanical system for initiating rotation in an engine that is stopped. Although here the reference is more to the system that controls the starter than the starter itself.
	60	Cab Display	Cab Display is for a fairly elaborate in cab display, typically capable of greater than 30 'ascii' characters and differentiated from the Instrument Cluster and Virtual Terminal.
	61	File Server / Printer	A printing or file storage unit on the network - A permanent connection may exist and the unit is expected to be able to print (paper type output) or store data (as in magnetic or eeprom devices).
	62	On-Board Diagnostic Unit	A tool which may be permanently mounted on the vehicle and that may not support all of the J1939-73 messages (services).
	63	Engine Valve Controller	Control system used to manipulate the actuation of engine intake and/or exhaust valves in response to other factors
	64	Endurance Braking	Sum of all devices in a vehicle which enable the driver with virtually no friction brake wear / tear to reduce the speed or to maintain the speed on a long descent. May contain energy supplying device(s), control device(s), transmission(s), retarder(s) and energy dissipation device(s). The control may be independent of the service brake system or may be integrated with the service brake control such that both are applied simultaneously or in a phased fashion. An integrated system may also have a control to prevent linking of operation.
	65	Gas Flow Measurement	Provides measurement of gas flow rates and associated parameters.
	66	I/O Controller	Reporting and/or control device for external input and output channels
	67	Electrical System Controller	This may include Load Centers, Fuseboxes, & Power Distribution boards
	68	Aftertreatment system gas measurement	Sensor for measuring gas properties before and after an aftertreatment system. For example measurement of NOx or Oxygen level.
	69	Engine Emission Aftertreatment System	Engine Emission Aftertreatment System
	70	Auxiliary Regeneration Device	Auxiliary Regeneration Device used as part of an after treatment system
	71	Transfer Case Control	The device which controls the selection of the number of drive wheels (for example 2 or 4 wheel drive).
	72	Coolant Valve Controller	Device used to control the flow of coolant (water, oil, air, etc...) for any thermal management system.
	73		thru 127 are reserved

Table B12
J1939 Names

The NAME fields are described in Section 3.1.3 and in J1939-81, Section 4.1. This table defines the Upper 128 Functions which are dependent on the Industry Group and Vehicle System. Due to the dependencies of Vehicle System on Industry Group, and of Function on Vehicle System, the following table is used to define both Vehicle System and Function.

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	0	0	Non-specific System	128	Reserved	
	0	0	Non-specific System	129	Off-board diagnostic-service tool	
	0	0	Non-specific System	130	On-board data logger	
	0	0	Non-specific System	131	PC Keyboard	A user interface similar to a PC keyboard.
	0	0	Non-specific System	132	Safety Restraint System	The safety restraint system can be for controlling activation of airbags, belt tensioners, roll over protection systems, etc.
	0	0	Non-specific System	133	Turbocharger	Turbocharger used on the engine.
	0	0	Non-specific System	134	Ground based speed sensor	Measures actual ground speed of a vehicle with a device such as radar or other such devices.
	0	0	Non-specific System	135	Keypad	An operator input device used to control machine functions or provide data.
	0	0	Non-specific System	136	Humidity sensor	Device which measures air humidity
	0	0	Non-specific System	137	Thermal Management System Controller	This device controls all devices that may be used in a thermal management system including Jacket Water Cooling, Charged Air Cooling, Transmission Cooling, Electronics Cooling, Aux Oil Cooling, etc.
	0	0	Non-specific System	255	Not Available	This assignment can be used until an explicit function has been assigned.
	0	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.
	1	0	Non-specific System	128	Tachograph	
	1	0	Non-specific System	129	Door Controller	
	1	0	Non-specific System	130	Articulation Turntable Control	Control of the articulation turntable for joined body buses.
	1	0	Non-specific System	131	Body-to-Vehicle Interface Control	Interface controller managing interaction of vehicle functions and body functions. May be combination of body signals and gateway functionalities.
	1	0	Non-specific System	132	Slope Sensor	Sensor for measuring a slope along an axis.

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	1	0	Non-specific System	134	Retarder Display	Display module that shows information pertaining to the retarder (driveline or exhaust or engine).
	1	0	Non-specific System	135	Differential Lock Controller	
	1	0	Non-specific System	255	Not Available	This assignment can be used until an explicit function has been assigned.
	1	1	Tractor	128	Forward Road Image Processing	Determine vehicle position from lane markings. Performance, Advisory & Warning only
	1	1	Tractor	129	Fifth Wheel Smart System	Any systems relative to the operation & status/safety monitoring of the fifth wheel coupler system (including mounting bracket).
	1	1	Tractor	130	Catalyst Fluid Sensor	The Catalyst Fluid Sensor can measure the catalyst fluid temperature, the catalyst fluid level and the catalyst fluid quality
	1	1	Tractor	131	Adaptive Front Lighting System	System used to adjust the vehicle front lighting for the current operating conditions (city, highway, country, etc.)
	1	1	Tractor	255	Not Available	This assignment can be used until an explicit function has been assigned.
	1	2	Trailer	255	Not Available	This assignment can be used until an explicit function has been assigned.
	1	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	0	Non-specific System	128	Non Virtual Terminal Display	Implement Bus
	2	0	Non-specific System	129	Operator Controls - Machine Specific	
	2	0	Non-specific System	130	Task Controller (Mapping Computer)	
	2	0	Non-specific System	131	Position Control	
	2	0	Non-specific System	132	Machine Control	
	2	0	Non-specific System	133	Foreign Object Detection	Detection of undesirable objects in the product flow
	2	0	Non-specific System	134	Tractor ECU	
	2	0	Non-specific System	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	1	Tractor	129	Auxiliary Valve Control	The unit knows the parsing and security for the tractor mounted auxiliary valves
	2	1	Tractor	130	Rear Hitch Control	The control of the rear hitch of an agricultural tractor
	2	1	Tractor	131	Front Hitch Control	The control of the front hitch of an agricultural tractor

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	2	1	Tractor	132	Tractor Machine Control	
	2	1	Tractor	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	2	Tillage	132	Tillage Machine Control	
	2	2	Tillage	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	3	Secondary Tillage	132	Secondary Tillage Machine Control	
	2	3	Secondary Tillage	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	4	Planters/ Seeders	128	Seed Rate Control	
	2	4	Planters/ Seeders	129	Section On/ Off Control	
	2	4	Planters/ Seeders	132	Planters/ Seeders Machine Control	
	2	4	Planters/ Seeders	133	Product Flow	Controlling and or monitoring the flow of product.
	2	4	Planters/Seeders	134	Product Level	Controlling and or monitoring the product level.
	2	4	Planters/ Seeders	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	5	Fertilizers	128	Fertilize Rate Control	
	2	5	Fertilizers	129	Section On/ Off Control	
	2	5	Fertilizers	132	Fertilizers Machine Control	
	2	5	Fertilizers	133	Product Flow	Controlling and or monitoring the flow of product.
	2	5	Fertilizers	134	Product Level	Controlling and or monitoring the product level.
	2	5	Fertilizers	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	6	Sprayers	128	Spray Rate Control	
	2	6	Sprayers	129	Section On/ Off Control	
	2	6	Sprayers	130	Product Pressure	Control and or monitoring of product pressure.
	2	6	Sprayers	132	Sprayers Machine Control	
	2	6	Sprayers	133	Product Flow	Controlling and or monitoring the flow of product.
	2	6	Sprayers	134	Product Level	Controlling and or monitoring the product level.
	2	6	Sprayers	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	7	Harvesters	128	Tailing Monitor	
	2	7	Harvesters	129	Header Control	
	2	7	Harvesters	130	Product Loss Monitor	
	2	7	Harvesters	131	Product Moisture Sensor	

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	2	7	Harvesters	132	Harvester Machine Control	
	2	7	Harvesters	133	Product Flow	Controlling and or monitoring the flow of product.
	2	7	Harvesters	134	Product Level	Controlling and or monitoring the product level.
	2	7	Harvesters	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	8	Root Harvesters	132	Root Harvesters Machine Control	
	2	8	Root Harvesters	133	Product Flow	Controlling and or monitoring the flow of product.
	2	8	Root Harvesters	134	Product Level	Controlling and or monitoring the product level.
	2	8	Root Harvesters	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	9	Forage	128	Twine Wrapper Control	Controls such items on a baler such as the twine wrap controls and actuators
	2	9	Forage	132	Forage Machine Control	
	2	9	Forage	133	Product Flow	Controlling and or monitoring the flow of product.
	2	9	Forage	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	10	Irrigation	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	11	Transport/Trailer	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	12	Farm Yard Operations	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	13	Powered Auxiliary Devices	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	14	Special Crops	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	15	Earth Work	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	16	Skidder	255	Not Available	This assignment can be used until an explicit function has been assigned.
	2	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	0	Non-specific system	128	Supplemental Engine Control Sensing	
	3	0	Non-specific system	129	Laser Receiver	

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	3	0	Non-specific system	130	Land Leveling System Operator Interface	A component that allows the user to control the Land Leveling System and display information about the operation of the system.
	3	0	Non-specific system	131	Land Leveling Electric Mast	
	3	0	Non-specific system	132	Single Land Leveling System Supervisor	
	3	0	Non-specific system	133	Land Leveling System Display	
	3	0	Non-specific system	134	Laser Tracer	
	3	0	Non-specific system	135	Loader Control	
	3	0	Non-specific system	136	Slope Sensor	Measures the slope along a axis.
	3	0	Non-specific system	137	Liftarm Control	Controller whose primary purpose is to control the lift arms and tilt functions on a construction loader, skid steer loader, or similar machine. Not a loader attachment.
	3	0	Non-specific system	138	Supplemental Sensor Processing Units	An ECU functioning as an I/O module connected to the bus with the designed purpose of data collection (input or output) and not necessarily containing any control algorithms or processing intelligence.
	3	0	Non-specific system	139	Hydraulic System Planner	Coordinates the functions of a number of valve controllers.
	3	0	Non-specific system	140	Hydraulic Valve Controller	The valve controller will typically control the flow of oil to a specific cylinder.
	3	0	Non-specific system	141	Joystick Control	Joystick Control
	3	0	Non-specific system	142	Rotation Sensor	A device that measures the rotational angle around an axis.
	3	0	Non-specific system	143	Sonic Sensor	A device that measures distance via ultrasonic pulse/echo range techniques.
	3	0	Non-specific system	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	1	Skid Steer Loader	128	Main Controller	
	3	1	Skid Steer Loader	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	2	Articulated Dump Truck	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	3	Backhoe	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	4	Crawler	128	Blade Controller	Controller for blade height.
	3	4	Crawler	255	Not Available	This assignment can be used until an explicit function has been assigned.

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	3	5	Excavator	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	6	Forklift	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	7	Four Wheel Drive Loader	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	8	Grader	128	HFWD Controller	Hydraulic front wheel drive controller
	3	8	Grader	255	Not Available	This assignment can be used until an explicit function has been assigned.
	3	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.
	4	0	Non-specific System	128	Alarm System Control for Marine Engines	The ECU that controls the Alarm functions on an engine of a Marine System.
	4	0	Non-specific System	129	Protection System for Marine Engines	The first ECU that controls the Protection functions on the first engine of a Marine System.
	4	0	Non-specific System	130	Display for Protection System for Marine Engines	The ECU that provides the display of information and/or indicators associated specifically with the protection system on an engine of a Marine System.
	4	0	Non-specific System	255	Not Available	This assignment can be used until an explicit function has been assigned.
	4	10	System tools	255	Not Available	
	4	20	Safety systems	255	Not Available	
	4	25	Gateway	10		
	4	30	Power management and lighting systems	130	Switch	
	4	30	Power management and lighting systems	140	Load	
	4	40	Steering systems	130	Follow-up Controller	
	4	40	Steering systems	140	Mode Controller	
	4	40	Steering systems	150	Automatic Steering Controller	
	4	40	Steering systems	160	Heading Sensors	
	4	50	Propulsion systems	130	Engine room monitoring	
	4	50	Propulsion systems	140	Engine Interface	
	4	50	Propulsion systems	150	Engine Controller	
	4	50	Propulsion systems	160	Engine Gateway	
	4	50	Propulsion systems	170	Control Head	
	4	50	Propulsion systems	180	Actuator	
	4	50	Propulsion systems	190	Gauge Interface	
	4	50	Propulsion systems	200	Gauge Large	

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	4	50	Propulsion systems	210	Gauge Small	
	4	60	Navigation systems	130	Sounder, depth	
	4	60	Navigation systems	140		
	4	60	Navigation systems	145	Global Navigation Satellite System (GNSS)	
	4	60	Navigation systems	150	Loran C	
	4	60	Navigation systems	155	Speed Sensors	
	4	60	Navigation systems	160	Turn Rate Indicator	
	4	60	Navigation systems	170	Integrated Navigation	
	4	60	Navigation systems	200	Radar and/or Radar Plotting	
	4	60	Navigation systems	205	Electronic Chart Display & Information System (ECDIS)	
	4	60	Navigation systems	210	Electronic Chart System (ECS)	
	4	60	Navigation systems	220	Direction Finder	
	4	70	Communications systems	130	Emergency Position Indicating Beacon (EPIRB)	
	4	70	Communications systems	140	Automatic Identification System	
	4	70	Communications systems	150	Digital Selective Calling (DSC)	
	4	70	Communications systems	160	Data Receiver	
	4	70	Communications systems	170	Satellite	
	4	70	Communications systems	180	Radio-Telephone (MF/HF)	
	4	70	Communications systems	190	Radio-Telephone (VHF)	
	4	80	Instrumentation/general systems	130	Time/Date systems	
	4	80	Instrumentation/general systems	140	Voyage Data Recorder	
	4	80	Instrumentation/general systems	150	Integrated Instrumentation	
	4	80	Instrumentation/general systems	160	General Purpose Displays	
	4	80	Instrumentation/general systems	170	General Sensor Box	
	4	80	Instrumentation/general systems	180	Weather Instruments	
	4	80	Instrumentation/general systems	190	Transducer/general	
	4	80	Instrumentation/general systems	200	NMEA 0183 Converter	
	4	90	Environmental (HVAC) systems	255	Not Available	
	4	100	Deck, cargo, and fishing equipment systems	255	Not Available	
	4	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.
	5	0	Industrial-Process Control-Stationary (Gen-Sets)	128	Supplemental Engine Control Sensing	

Rev	IG	Veh Sys	Veh Sys Desc	Func	Func Desc	Notes
	5	0	Industrial-Process Control-Stationary (Gen-Sets)	129	Generator Set Controller	Generator set controller used to collect data and control.
	5	0	Generator Voltage Regulator	130	Generator Voltage Regulator	
	5	0	Industrial-Process Control-Stationary (Gen-Sets)	255	Not Available	This assignment can be used until an explicit function has been assigned.
	5	127	Not Available	255	Not Available	This assignment can be used until an explicit function has been assigned.

APPENDIX C

FAULT REPORTING PARAMETERS

TABLE C1
Suspect Parameter Numbers (SPN)

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	16	Engine Fuel Filter (Suction Side) Differential Pressure (see also SPN 1382)	J1939-71			8	Differential pressure measured across the fuel filter located between the fuel tank and the supply pump.			16		
	18	Engine Extended Range Fuel Pressure	J1939							18		
	19	Engine Extended Range Engine Oil Pressure	J1939							19		
	20	Engine Extended Range Engine Coolant Pressure	J1939							20		
	21	Engine ECU Temperature (use SPN 1136)	J1939-71			16	Temperature of the engine electronic control unit.			21		
	22	Engine Extended Crankcase Blow-by Pressure	J1939-71	65263	2	8	Differential crankcase blow-by pressure as measured through a tube with a venturi.			22		
	23	Generator Oil Pressure	J1939							23		
	24	Generator Coolant Temperature	J1939							24		
	27	Engine Exhaust Gas Recirculation Valve Position	J1939-71	64916	1	16	The position of the exhaust gas recirculation valve expressed as a percentage of full travel.			27		
	28	Accelerator Pedal Position 3	J1939			8	The ratio of actual position of the third analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device.			28		
	29	Accelerator Pedal Position 2	J1939-71	61443	5	8	The ratio of actual position of the second analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device.			29		
	30	Engine Crankcase Blowby Pressure	J1939							30		
	31	Transmission Range Position	J1939							31		
	32	Transmission Splitter Position	J1939				The current position of the splitter cylinder.			32		
	33	Clutch Cylinder Position	J1939							33		

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	36	Clutch Plates	J1939					36				
	37	Transmission Air Tank Pressure	J1939				The pressure of the air in the tank supplying the automatically shifting transmission.	37				
	38	Second Fuel Level (Right Side)	J1939					38				
	39	Tire Pressure Check Interval	J1939-71	65144	1	8	The interval at which the system will check the tire pressures (e.g., 5, 10, 15 min.).	39				
	46	Pneumatic Supply Pressure	J1939-71	65198	1	8	The pneumatic pressure in the main reservoir, sometimes referred to as the wet tank.	46				
	48	Extended Range Barometric Pressure	J1939					48				
	51	Engine Throttle Position	J1939-71	65266	7	8	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.	51				
	52	Engine Intercooler Temperature	J1939-71	65262	7	8	Temperature of liquid found in the intercooler located after the turbocharger.	52				
	53	Transmission Synchronizer Clutch Value	J1939-71	65221	1	8	The current modulated value for the air supply to the synchronizer clutch.	53				
	54	Transmission Synchronizer Brake Value	J1939-71	65221	2	8	The current modulated value for the air supply to the synchronizer brake.	54				
	59	Transmission Shift Finger Gear Position	J1939-71	65223	1	8	The current position of the shift finger in the gear direction.	59				
	60	Transmission Shift Finger Rail Position	J1939-71	65223	2	8	The current position of the shift finger in the rail direction.	60				
	64	Transmission #2 Oil Temperature	J1939				Temperature of transmission #2 lubricant.	64				
	69	Two Speed Axle Switch	J1939-71	65265	1.1	2	Switch signal which indicates the current axle range.	69				
	70	Parking Brake Switch	J1939-71	65265	1.3	2	Switch signal which indicates when the parking brake is set. In general the switch actuated by the operator's park brake control, whether a pedal, lever or other control mechanism.	70				
	72	Engine Blower Bypass Valve Position	J1939-71	65277	1	8	Relative position of the blower bypass valve.	72				
	73	Auxiliary Pump Pressure	J1939-71	65278	1	8	Gage pressure of auxiliary water pump driven as a PTO device.	73				

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	74	Maximum Vehicle Speed Limit	J1939-71	65261	1	8	Maximum vehicle velocity allowed.	74				
	75	Steering Axle Temperature	J1939-71	65273	1	8	Temperature of lubricant in steering axle.	75				
	76	Axle Lift Air Pressure	J1939					76				
	77	Forward Rear Drive Axle Temperature	J1939					77				
	78	Rear Rear Drive Axle Temperature	J1939					78				
	79	Road Surface Temperature	J1939-71	65269	7-8	16	Indicated temperature of road surface over which vehicle is operating.	79				
	80	Washer Fluid Level	J1939-71	65276	1	8	Ratio of volume of liquid to total container volume of fluid reservoir in windshield wash system.	80				
	81	Engine Particulate Trap Inlet Pressure	J1939-71	65270	1	8	Exhaust back pressure as a result of particle accumulation on filter media placed in the exhaust stream.	81				
	82	Engine Air Start Pressure	J1939-71	65246	1	8	Gage pressure of air in an engine starting system that utilizes compressed air to provide the force required to rotate the crankshaft.	82				
	84	Wheel-Based Vehicle Speed	J1939-71	65265	2-3	16	Speed of the vehicle as calculated from wheel or tailshaft speed.	84				
	86	Cruise Control Set Speed	J1939-71	65265	6	8	Value of set (chosen) velocity of velocity control system.	86				
	87	Cruise Control High Set Limit Speed	J1939-71	65261	2	8	Maximum vehicle velocity at which cruise can be set.	87				
	88	Cruise Control Low Set Limit Speed	J1939-71	65261	3	8	Minimum vehicle velocity at which cruise can be set or minimum vehicle velocity for cruise operation before it will exit cruise control operation.	88				
	90	Power Takeoff Oil Temperature	J1939-71	65264	1	8	Temperature of lubricant in device used to transmit engine power to auxiliary equipment.	90				
	91	Accelerator Pedal Position 1	J1939-71	61443	2	8	The ratio of actual position of the analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device.	91				

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	92	Engine Percent Load At Current Speed	J1939-71	61443	3	8	The ratio of actual engine percent torque (indicated) to maximum indicated torque available at the current engine speed, clipped to zero torque during engine braking.	92				
	93	Engine Net Brake Torque	J1939					93				
	94	Engine Fuel Delivery Pressure	J1939-71	65263	1	8	Gage pressure of fuel in system as delivered from supply pump to the injection pump.	94				
	95	Engine Fuel Filter Differential Pressure	J1939-71	65276	3	8	Change in fuel delivery pressure, measured across the filter, due to accumulation of solid or semisolid matter on the filter element.	95				
	96	Fuel Level	J1939-71	65276	2	8	Ratio of volume of fuel to the total volume of fuel storage container.	96				
	97	Water In Fuel Indicator	J1939-71	65279	1.1	2	Signal which indicates the presence of water in the fuel.	97				
	98	Engine Oil Level	J1939-71	65263	3	8	Ratio of current volume of engine sump oil to maximum required volume	98				
	99	Engine Oil Filter Differential Pressure	J1939-71	65276	4	8	Change in engine oil pressure, measured across the filter, due to the filter and any accumulation of solid or semisolid material on or in the filter.	99				
	100	Engine Oil Pressure	J1939-71	65263	4	8	Gage pressure of oil in engine lubrication system as provided by oil pump.	100				
	101	Engine Crankcase Pressure	J1939-71	65263	5-6	16	Gage pressure inside engine crankcase.	101				
	102	Engine Intake Manifold #1 Pressure	J1939-71	65270	2	8	The gage pressure measurement of the air intake manifold.	102				
	103	Engine Turbocharger 1 Speed	J1939-71	65245	2-3	16	Rotational velocity of rotor in the turbocharger.	103				
	104	Engine Turbocharger Lube Oil Pressure 1	J1939-71	65245	1	8	Gage pressure of oil in turbocharger lubrication system.	104				
	105	Engine Intake Manifold 1 Temperature	J1939-71	65270	3	8	Temperature of pre-combustion air found in intake manifold number 1 of engine air supply system.	105				
	106	Engine Air Inlet Pressure	J1939-71	65270	4	8	Absolute air pressure at inlet to intake manifold or air box.	106				

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	107	Engine Air Filter 1 Differential Pressure	J1939-71	65270	5	8	Change in engine air system pressure, measured across the filter, due to the filter and any accumulation of solid foreign matter on or in the filter.	107					
	108	Barometric Pressure	J1939-71	65269	1	8	Absolute air pressure of the atmosphere.	108					
	109	Engine Coolant Pressure	J1939-71	65263	7	8	Gage pressure of liquid found in engine cooling system.	109					
	110	Engine Coolant Temperature	J1939-71	65262	1	8	Temperature of liquid found in engine cooling system.	110					
	111	Engine Coolant Level	J1939-71	65263	8	8	Ratio of volume of liquid found in engine cooling system to total cooling system volume	111					
	112	Engine Coolant Filter Differential Pressure	J1939-71	65270	8	8	Change in coolant pressure, measured across the filter, due to the filter and any accumulation of solid or semisolid matter on or in the filter.	112					
	113	Engine Governor Droop	J1939					113					
	114	Net Battery Current	J1939-71	65271	1	8	Net flow of electrical current into/out of the battery or batteries.	114					
	115	Alternator Current	J1939-71	65271	2	8	Measured output current from Alternator	115					
	116	Brake Application Pressure	J1939-71	65274	1	8	Gage Pressure of compressed air or fluid in vehicle braking system.	116					
	117	Brake Primary Pressure	J1939-71	65274	2	8	Gage pressure of air in the primary, or supply side, of the air brake system	117					
	118	Brake Secondary Pressure	J1939-71	65274	3	8	Gage pressure of air in the secondary, or service side, of the air brake system.	118					
	119	Hydraulic Retarder Pressure	J1939-71	65275	1	8	Gage pressure of oil in hydraulic retarder system.	119					
	120	Hydraulic Retarder Oil Temperature	J1939-71	65275	2	8	Temperature of oil found in a hydraulic retarder.	120					
	122	Engine Retarder Percent	J1939					122					
	123	Clutch Pressure	J1939-71	65272	1	8	Gage pressure of oil within a wet clutch.	123					
	124	Transmission Oil Level	J1939-71	65272	2	8	Ratio of volume of transmission sump oil to recommended volume	124					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	126	Transmission Filter Differential Pressure	J1939-71	65272	3	8	Change in transmission fluid pressure, measured after the filter, due to accumulation of solid or semisolid material on or in the filter.	126				
	127	Transmission Oil Pressure	J1939-71	65272	4	8	Gage pressure of lubrication fluid in transmission, measured after pump.	127				
	129	Engine Injector Metering Rail 2 Pressure (duplicate, use SPN 1349)	J1939-71			16	The gage pressure of fuel in the metering rail #2 as delivered from the supply pump to the injector metering inlet.	129				
	130	Engine Power Specific Fuel Economy	J1939					130				
	131	Engine Exhaust Back Pressure	J1939					131				
	132	Engine Inlet Air Mass Flow Rate	J1939-71	61450	3-4	16	Mass flow rate of fresh air entering the engine air intake, before any EGR mixer, if used.	132				
	133	Engine Average Fuel Rate	J1939					133				
	135	Engine Fuel Delivery Pressure (Absolute)	J1939					135				
	136	Auxiliary Vacuum Pressure Reading	J1939-71	65143	1-2	16	Identifies the current vacuum pressure (relative to atmosphere) that is configured uniquely per application. Not to be used in place of defined parameters.	136				
	137	Auxiliary Gage Pressure Reading 1	J1939-71	65143	3-4	16	Identifies the current gage pressure (relative to atmosphere) that is configured uniquely per application.	137				
	138	Auxiliary Absolute Pressure Reading	J1939-71	65143	5-6	16	Identifies the current absolute pressure (relative to 0 pressure) that is configured uniquely per application.	138				
	141	Trailer, Tag Or Push Channel Tire Pressure Target	J1939-71	65145	1-2	16	The tire pressure control system's target gage pressure for the trailer, tag, or push group of tires.	141				
	142	Drive Channel Tire Pressure Target	J1939-71	65145	3-4	16	The tire pressure control system's target gage pressure for the drive group of tires.	142				
	143	Steer Channel Tire Pressure Target	J1939-71	65145	5-6	16	The tire pressure control system's target gage pressure for the steer group of tires.	143				
	144	Trailer, Tag Or Push Channel Tire Pressure	J1939-71	65146	1-2	16	The latest gage pressure reading of the trailer, tag, or push group of tires, as opposed to the pressure in each tire.	144				

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	145	Drive Channel Tire Pressure	J1939-71	65146	3-4	16	The latest gage pressure reading of the drive group of tires, as opposed to the pressure in each tire.	145					
	146	Steer Channel Tire Pressure	J1939-71	65146	5-6	16	The latest gage pressure reading of the steer group of tires, as opposed to the pressure in each tire.	146					
	147	Engine Average Fuel Economy (Gaseous)	J1939					147					
	148	Engine Instantaneous Fuel Economy (Gaseous)	J1939					148					
	149	Engine Mass Flow Rate (Gaseous)	J1939					149					
	152	Number Of ECU Resets	J1939					152					
	153	Engine High Resolution Crankcase Pressure	J1939					153					
	156	Engine Injector Timing Rail 1 Pressure	J1939-71	65243	5-6	16	The gage pressure of fuel in the timing rail delivered from the supply pump to the injector timing inlet.	156					
	157	Engine Injector Metering Rail 1 Pressure	J1939-71	65243	3-4	16	The gage pressure of fuel in the primary, or first, metering rail as delivered from the supply pump to the injector metering inlet.	157					
	158	Keyswitch Battery Potential	J1939-71	65271	7-8	16	Battery potential measured at the input of the electronic control unit supplied through a keyswitch or similar switching device.	158					
	159	Engine Gas Supply Pressure	J1939-71	65277	2-3	16	Gage pressure of gas supply to fuel metering device.	159					
	160	Main Shaft Speed	J1939-71			16	Rotational velocity of the first intermediate shaft of the transmission.	160					
	161	Transmission Input Shaft Speed	J1939-71	61442	6-7	16	Rotational velocity of the primary shaft transferring power into the transmission. When a torque converter is present, it is the output of the torque converter.	161					
	162	Transmission Requested Range	J1939-71	61445	5-6	16	Range selected by the operator.	162					
	163	Transmission Current Range	J1939-71	61445	7-8	16	Range currently being commanded by the transmission control system.	163					
	164	Engine Injection Control Pressure	J1939-71	65243	1-2	16	The gage pressure of the engine oil in the hydraulic accumulator that powers an intensifier used for fuel injection.	164					
	165	Compass Bearing	J1939-71	65256	1-2	16	Present compass bearing of vehicle.	165					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	166	Engine Rated Power	J1939-71	65214	1-2	16	Net brake power that the engine will deliver continuously, specified for a given application at a rated speed.	166				
	167	Charging System Potential (Voltage)	J1939-71	65271	3-4	16	Electrical potential measured at the charging system output. The charging system may be any device charging the batteries. This includes alternators, generators, solid state charger and other charging devices.	167				
	168	Battery Potential / Power Input 1	J1939-71	65271	5-6	16	This parameter measures the first source of battery potential as measured at the input of the ECM/actuator etc. coming from one or more batteries, irrespective of the distance between the component and the battery.	168				
	169	Cargo Ambient Temperature	J1939-71	65276	5-6	16	Temperature of air inside vehicle container used to accommodate cargo.	169				
	170	Cab Interior Temperature	J1939-71	65269	2-3	16	Temperature of air inside the part of the vehicle that encloses the driver and vehicle operating controls.	170				
	171	Ambient Air Temperature	J1939-71	65269	4-5	16	Temperature of air surrounding vehicle.	171				
	172	Engine Air Inlet Temperature	J1939-71	65269	6	8	Temperature of air entering vehicle air induction system.	172				
	173	Engine Exhaust Gas Temperature	J1939-71	65270	6-7	16	Temperature of combustion byproducts leaving the engine.	173				
	174	Engine Fuel Temperature 1	J1939-71	65262	2	8	Temperature of fuel (or gas) passing through the first fuel control system.	174				
	175	Engine Oil Temperature 1	J1939-71	65262	3-4	16	Temperature of the engine lubricant.	175				
	176	Engine Turbocharger Oil Temperature	J1939-71	65262	5-6	16	Temperature of the turbocharger lubricant.	176				
	177	Transmission Oil Temperature	J1939-71	65272	5-6	16	Temperature of the transmission lubricant.	177				
	178	Front Axle Weight	J1939					178				
	179	Rear Axle Weight	J1939					179				
	180	Trailer Weight	J1939-71	65258	4-5	16	Total mass of freight-carrying vehicle designed to be pulled by truck, including the weight of the contents.	180				
	181	Cargo Weight	J1939-71	65258	6-7	16	The mass of freight carried.	181				

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	182	Engine Trip Fuel	J1939-71	65257	1-4	32	Fuel consumed during all or part of a journey.	182				
	183	Engine Fuel Rate	J1939-71	65266	1-2	16	Amount of fuel consumed by engine per unit of time.	183				
	184	Engine Instantaneous Fuel Economy	J1939-71	65266	3-4	16	Current fuel economy at current vehicle velocity	184				
	185	Engine Average Fuel Economy	J1939-71	65266	5-6	16	Average of instantaneous fuel economy for that segment of vehicle operation of interest.	185				
	186	Power Takeoff Speed	J1939-71	65264	2-3	16	Rotational velocity of device used to transmit engine power to auxiliary equipment.	186				
	187	Power Takeoff Set Speed	J1939-71	65264	4-5	16	Rotational velocity selected by operator for device used to transmit engine power to auxiliary equipment.	187				
	188	Engine Speed At Idle, Point 1 (Engine Configuration)	J1939-71	65251	01-02	16	Stationary low idle speed of engine which includes influences due to engine temperature (after power up) and other stationary changes (calibration offsets, sensor failures, etc).	188				
	189	Engine Rated Speed	J1939-71	65214	3-4	16	The maximum governed rotational velocity of the engine crankshaft under full load conditions.	189				
	190	Engine Speed	J1939-71	61444	4-5	16	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.	190				
	191	Transmission Output Shaft Speed	J1939-71	61442	2-3	16	Calculated speed of the transmission output shaft.	191				
	228	Speed Sensor Calibration	J1939					228				
	229	Total Fuel Used (Gaseous) (duplicate, use SPN 1040)	J1939					229				
	230	Total Idle Fuel Used (Gaseous) (duplicate, use SPN 1010)	J1939					230				
	231	Trip Fuel (Gaseous) (duplicate, use SPN 1039)	J1939					231				
	232	DGPS Differential Correction	J1939					232				

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	233	Unit Number (Power Unit)	J1939-71	65259	d	1600	Owner assigned unit number for the power unit of the vehicle	233				
	234	Software Identification	J1939-71	65242	2-N	1600	Software identification of an electronic module. As an example, this parameter may be represented with ASCII characters MMDDYYaa where MM is the month, DD is the day, YY is the year, and aa is the revision number.	234				
	235	Engine Total Idle Hours	J1939-71	65244	5-8	32	Accumulated time of operation of the engine while under idle conditions.	235				
	236	Engine Total Idle Fuel Used	J1939-71	65244	1-4	32	Accumulated amount of fuel used during vehicle operation while under idle conditions.	236				
	237	Vehicle Identification Number	J1939-71	65260	1	1600	Vehicle Identification Number (VIN) as assigned by the vehicle manufacturer.	237				
	238	Velocity Vector	J1939					238				
	241	Tire Pressure	J1939-71	65268	2	8	Pressure at which air is contained in cavity formed by tire and rim.	241				
	242	Tire Temperature	J1939-71	65268	3-4	16	Temperature at the surface of the tire sidewall.	242				
	244	Trip Distance	J1939-71	65248	1-4	32	Distance traveled during all or part of a journey.	244				
	245	Total Vehicle Distance	J1939-71	65248	5-8	32	Accumulated distance traveled by vehicle during its operation.	245				
	246	Total Vehicle Hours	J1939-71	65255	1-4	32	Accumulated time of operation of vehicle.	246				
	247	Engine Total Hours of Operation	J1939-71	65253	1-4	32	Accumulated time of operation of engine.	247				
	248	Total Power Takeoff Hours	J1939-71	65255	5-8	32	Accumulated time of operation of power takeoff device.	248				
	249	Engine Total Revolutions	J1939-71	65253	5-8	32	Accumulated number of revolutions of engine crankshaft during its operation.	249				
	250	Engine Total Fuel Used	J1939-71	65257	5-8	32	Accumulated amount of fuel used during vehicle operation.	250				
	251	Time	J1939					251				
	252	Date	J1939					252				
	257	Cold Restart Of Specific Component	J1939					257				

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	258	Warm Restart Of Specific Component	J1939					258					
	259	Acknowledgement Of Warm Or Cold Restart	J1939					259					
	354	Relative Humidity	J1939-71	65164	7	8	Measures humidity of combustion air prior to entry into turbocharger	354					
	355	Engine Oil Life	J1939				Measures the condition of the engine lubricating oil	355					
	378	Fare Collection Unit Status	J1939					378					
	380	Articulation Angle	J1939					380					
	383	Vehicle Acceleration	J1939					383					
	407	Axle Group Full Weight Calibration	J1939-71	64873	4-5	16	The full weight calibration measurement of an axle group						
	408	Axle Group Empty Weight Calibration	J1939-71	64873	2-3	16	The empty weight calibration measurement of an axle group	408					
	409	Axle Group Weight	J1939-71	64874	2-3	16	Total mass imposed on the road surface by all the tires in the axle group	409					
	411	Engine Exhaust Gas Recirculation Differential Pressure	J1939-71	65188	5-6	16	Differential pressure across the Exhaust Gas Recirculation (EGR) system	411					
	412	Engine Exhaust Gas Recirculation Temperature	J1939-71	65188	7-8	16	Temperature of Recirculated Exhaust Gas	412					
	413	Net Vehicle Weight Change	J1939-71	64872	4-6	24	Identifies the net vehicle weight change from the time of last vehicle net weight zeroing.	413					
	417	Gross Combination Weight	J1939-71	64872	1-3	24	Total weight of the truck and all the trailers with on-board scales.	417					
	430	Engine Starter Solenoid Voltage	J1939				This is the voltage at the battery terminal of the starter solenoid.	430					
	441	Auxiliary Temperature 1	J1939-71	65164	1	8	Temperature measured by auxiliary temperature sensor #1.	441					
	442	Auxiliary Temperature 2	J1939-71	65164	2	8	Temperature measured by auxiliary temperature sensor #2.	442					
	443	Auxiliary Gage Pressure Reading 2	J1939					443					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	444	Battery Potential / Power Input 2	J1939-71	65165	1-2	16	This parameter measures the second source of battery potential as measured at the input of the ECM/actuator etc. coming from one or more batteries, irrespective of the distance between the component and the battery.	444				
	445	Engine Cylinder Head Temperature Bank B (right bank)	J1939					445				
	446	Engine Cylinder Head Temperature Bank A (left bank)	J1939					446				
	447	Passenger Counter	J1939					447				
	501	Signage Message	J1939					501				
	502	Fare Collection Unit - Point Of Sale	J1939					502				
	503	Fare Collection Unit - Service Detail	J1939					503				
	504	Annunciator Voice Message	J1939					504				
	505	Vehicle Control Head Keyboard Message	J1939					505				
	506	Vehicle Control Head Display Message	J1939					506				
	507	Driver Identification	J1939					507				
	508	Transit Route Identification	J1939					508				
	509	Milepost Identification	J1939-71	64959	2 to n	800	Used to identify the milepost as detected by a milepost sensor	509				
	512	Driver's Demand Engine - Percent Torque	J1939-71	61444	2	8	The requested torque output of the engine by the driver.					
	513	Actual Engine - Percent Torque	J1939-71	61444	3	8	The calculated output torque of the engine.					
	514	Nominal Friction - Percent Torque	J1939-71	65247	1	8	The calculated torque that indicates the amount of torque required by the basic engine itself added by the loss torque of accessories.					
	515	Engine's Desired Operating Speed	J1939-71	65247	2-3	16	An indication by the engine of the optimal operating speed of the engine for the current existing conditions.					
	516	Ground-Based Vehicle Speed	J1939			16	Actual ground speed of the vehicle, measured by a device such as RADAR. (1 km/h = 0.621 mph)					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	517	Navigation-Based Vehicle Speed	J1939-71	65256	3-4	16	Speed of the vehicle as calculated from a device such as a Global Positioning System (GPS).					
	518	Engine Requested Torque/Torque Limit	J1939-71	0	4	8	Parameter provided to the engine or retarder in the torque/speed control message for controlling or limiting the output torque.					
	519	Engine's Desired Operating Speed Asymmetry Adjustment	J1939-71	65247	4	8	This byte is utilized in transmission gear selection routines and indicates the engine's preference of lower versus higher engine speeds should its desired speed not be achievable.					
	520	Actual Retarder - Percent Torque	J1939-71	61440	2	8	Actual braking torque of the retarder as a percent of retarder configuration reference torque SPN 556.					
	521	Brake Pedal Position	J1939-71	61441	2	8	Ratio of brake pedal position to maximum pedal position. Used for electric brake applications.					
	522	Percent Clutch Slip	J1939-71	61442	4	8	Parameter which represents the ratio of input shaft speed to current engine speed (in percent).					
	523	Transmission Current Gear	J1939-71	61445	4	8	The gear currently engaged in the transmission or the last gear engaged while the transmission is in the process of shifting to the new or selected gear.					
	524	Transmission Selected Gear	J1939-71	61445	1	8	The gear that the transmission will attempt to achieve during the current shift if a shift is in progress, or the next shift if one is pending (i.e., waiting for torque reduction to initiate the shift).					
	525	Transmission Requested Gear	J1939-71	256	3	8	Gear requested by the operator, ABS, or engine.					
	526	Transmission Actual Gear Ratio	J1939-71	61445	2-3	16	Actual ratio of input shaft speed to output shaft speed.					
	527	Cruise Control States	J1939-71	65265	7.6	3	This parameter is used to indicate the current state, or mode, of operation by the cruise control device.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	528	Engine Speed At Point 2 (Engine Configuration)	J1939-71	65251	04-05	16	Engine speed of point 2 of the engine torque map (see PGN 65251 and supporting document).					
	529	Engine Speed At Point 3 (Engine Configuration)	J1939-71	65251	07-08	16	Engine speed at point 3 of the engine torque map					
	530	Engine Speed At Point 4 (Engine Configuration)	J1939-71	65251	10-11	16	Engine speed at point 4 of the engine torque map					
	531	Engine Speed At Point 5 (Engine Configuration)	J1939-71	65251	13-14	16	Engine speed at point 5 of the engine torque map					
	532	Engine Speed At High Idle, Point 6 (Engine Configuration)	J1939-71	65251	16-17	16	Engine speed of high idle (point 6) of the engine torque map.					
	533	Engine Maximum Momentary Override Speed, Point 7 (Engine Configuration)	J1939-71	65251	22-23	16	The maximum engine speed above high idle allowed by the engine control during a momentary high idle override.					
	534	Engine Maximum Momentary Override Time Limit (Engine Configuration)	J1939-71	65251	24	8	The maximum time limit allowed to override the engine's high idle speed.					
	535	Engine Requested Speed Control Range Lower Limit (Engine Configuration)	J1939-71	65251	25	8	The minimum engine speed that the engine will allow when operating in a speed control/limit mode.					
	536	Engine Requested Speed Control Range Upper Limit (Engine Configuration)	J1939-71	65251	26	8	The maximum engine speed regardless of load that the engine will allow when operating in a speed control/limit mode, excluding any maximum momentary engine override speed, if supported.					
	537	Engine Requested Torque Control Range Lower Limit (Engine Configuration)	J1939-71	65251	27	8	The minimum engine torque that the engine will allow when operating in a torque control/limit mode.					
	538	Engine Requested Torque Control Range Upper Limit (Engine Configuration)	J1939-71	65251	28	8	The maximum engine torque that the engine will allow when operating in a torque control/limit mode.					
	539	Engine Percent Torque At Idle, Point 1 (Engine Configuration)	J1939-71	65251	03	8	The torque limit that indicates the available engine torque which can be provided by the engine at idle speed.					
	540	Engine Percent Torque At Point 2 (Engine Configuration)	J1939-71	65251	06	8	The torque limit that indicates the available engine torque which can be provided by the engine at point 2 of the engine map					
	541	Engine Percent Torque At Point 3 (Engine Configuration)	J1939-71	65251	09	8	The torque limit that indicates the available engine torque which can be provided by the engine at point 3 of the engine map					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	542	Engine Percent Torque At Point 4 (Engine Configuration)	J1939-71	65251	12	8	The torque limit that indicates the available engine torque which can be provided by the engine at point 4 of the engine map.						
	543	Engine Percent Torque At Point 5 (Engine Configuration)	J1939-71	65251	15	8	The torque limit that indicates the available engine torque which can be provided by the engine at point 5 of the engine map.						
	544	Engine Reference Torque (Engine Configuration)	J1939-71	65251	20-21	16	This parameter is the 100% reference value for all defined indicated engine torque parameters.						
	545	Engine Gain (Kp) Of The Endspped Governor (Engine Configuration)	J1939-71	65251	18-19	16	The endspped governor is defined as a linear line						
	546	Retarder Speed At Idle, Point 1 (Retarder Configuration)	J1939-71	65249	03-04	16							
	547	Retarder Speed At Peak Torque, Point 5 (Retarder Configuration)	J1939-71	65249	15-16	16							
	548	Maximum Retarder Speed, Point 2 (Retarder Configuration)	J1939-71	65249	06-07	16	Maximum speed of retarder						
	549	Retarder Speed At Point 3 (Retarder Configuration)	J1939-71	65249	09-10	16	Retarder speed of point 3 of the engine retarder torque map (see 5.2.4.3).						
	550	Retarder Speed At Point 4 (Retarder Configuration)	J1939-71	65249	12-13	16	Retarder speed of point 4 of the engine retarder torque map (see 5.2.4.3).						
	551	Percent Torque At Idle, Point 1 (Retarder Configuration)	J1939-71	65249	05	8	The torque limit that indicates the available retarder torque which can be provided by the retarder at idle speed.						
	552	Percent Torque At Maximum Speed, Point 2 (Retarder Configuration)	J1939-71	65249	08	8	The torque limit that indicates the available retarder torque which can be provided by the retarder at its maximum speed						
	553	Percent Torque At Point 3 (Retarder Configuration)	J1939-71	65249	11	8	The torque limit that indicates the available retarder torque which can be provided by the retarder at point 3 of the retarder torque map						
	554	Percent Torque At Point 4 (Retarder Configuration)	J1939-71	65249	14	8	The torque limit that indicates the available retarder torque which can be provided by the retarder at point 4 of the retarder torque map						
	555	Percent Torque At Peak Torque, Point 5 (Retarder Configuration)	J1939-71	65249	19	8	The torque limit that indicates the available retarder torque which can be provided by the retarder at point 5 of the retarder torque map						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	556	Reference Retarder Torque (Retarder Configuration)	J1939-71	65249	17-18	16	This parameter is the 100% reference value for all defined indicated retarder torque parameters.					
	557	Retarder Control Method (Retarder Configuration)	J1939-71	65249	02	8	This parameter identifies the number of steps used by the retarder.					
	558	Accelerator Pedal 1 Low Idle Switch	J1939-71	61443	1.1	2	Switch signal which indicates the state of the accelerator pedal 1 low idle switch.					
	559	Accelerator Pedal Kickdown Switch	J1939-71	61443	1.3	2	Switch signal which indicates whether the accelerator pedal kickdown switch is opened or closed.					
	560	Transmission Driveline Engaged	J1939-71	61442	1.1	2	Driveline engaged indicates the transmission controlled portion of the driveline is engaged sufficiently to allow a transfer of torque through the transmission.					
	561	ASR Engine Control Active	J1939-71	61441	1.1	2	State signal which indicates that ASR engine control has been commanded to be active.					
	562	ASR Brake Control Active	J1939-71	61441	1.3	2	State signal which indicates that ASR brake control is active.					
	563	Anti-Lock Braking (ABS) Active	J1939-71	61441	1.5	2	State signal which indicates that the ABS is active.					
	564	Differential Lock State - Central	J1939-71	61446	3.1	2	State used which indicates the condition of the central differential lock					
	565	Differential Lock State - Central Front	J1939-71	61446	3.3	2	State used which indicates the condition of the central front differential lock.					
	566	Differential Lock State - Central Rear	J1939-71	61446	3.5	2	State used which indicates the condition of the central rear differential lock.					
	567	Differential Lock State - Front Axle 1	J1939-71	61446	2.1	2	State used which indicates the condition of the front axle 1 differential lock.					
	568	Differential Lock State - Front Axle 2	J1939-71	61446	2.3	2	State used which indicates the condition of the front axle 2 differential lock.					
	569	Differential Lock State - Rear Axle 1	J1939-71	61446	2.5	2	State used which indicates the condition of the rear axle 1 differential lock.					
	570	Differential Lock State - Rear Axle 2	J1939-71	61446	2.7	2	State used which indicates the condition of the rear axle 2 differential lock.					
	571	Retarder Enable - Brake Assist Switch	J1939-71	61440	1.5	2	Switch signal which indicates whether the operator wishes the retarder to be enabled for vehicle braking assist.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	572	Retarder Enable - Shift Assist Switch	J1939-71	61440	1.7	2	Switch signal which indicates whether the operator wishes the retarder to be enabled for transmission shift assist.					
	573	Transmission Torque Converter Lockup Engaged	J1939-71	61442	1.3	2	State signal which indicates whether the torque converter lockup is engaged.					
	574	Transmission Shift In Process	J1939-71	61442	1.5	2	Indicates that the transmission is in process of shifting from the current gear to the selected gear.					
	575	ABS Off-road Switch	J1939-71	61441	3.1	2	Switch signal which indicates the position of the ABS off-road switch.					
	576	ASR Off-road Switch	J1939-71	61441	3.3	2	Switch signal which indicates the position of the ASR off-road switch.					
	577	ASR "Hill Holder" Switch	J1939-71	61441	3.5	2	Switch signal which indicates the position of the ASR "hill holder" switch.					
	578	Drive Axle Temperature	J1939-71	65273	4	8	Temperature of axle lubricant in drive axle.					
	579	Drive Axle Lift Air Pressure	J1939-71	65273	3	8	Gage pressure of air in system that utilizes compressed air to provide force between axle and frame.					
	580	Altitude	J1939-71	65256	7-8	16	Altitude of the vehicle referenced to sea level at standard atmospheric pressure and temperature.					
	581	Transmission Gear Ratio	J1939-71	65250	3-4	16	The transmission configuration describes the number of forward gears, the number of reverse gears, and the ratio of each gear with the following resolution.					
	582	Axle Weight	J1939-71	65258	2-3	16	Total mass imposed by the tires on the road surface at the specified axle.					
	583	Pitch	J1939-71	65256	5-6	16	Pitch of the vehicle as calculated by the navigation device(s).					
	584	Latitude	J1939-71	65267	1-4	32	Latitude position of the vehicle.					
	585	Longitude	J1939-71	65267	5-8	32	Longitude position of the vehicle					
	586	Make	J1939-71	65259	a	40	Make of the component.					
	587	Model	J1939-71	65259	b	1600	Model of the component					
	588	Serial Number	J1939-71	65259	c	1600	Serial number of the component					
	589	Alternator Speed	J1939-71	65237	1-2	16	Actual rotation speed of the alternator.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	590	Engine Idle Shutdown Timer State	J1939-71	65252	1.7	2	Status signal which indicates the current mode of operation of the idle shutdown timer system.					
	591	Engine Idle Shutdown Timer Function	J1939-71	65252	2.7	2	Parameter which indicates the configuration of the idle shutdown timer system.					
	592	Engine Idle Shutdown Timer Override	J1939-71	65252	1.5	2	Status signal which indicates the status of the override feature of the idle shutdown timer system.					
	593	Engine Idle Shutdown has Shutdown Engine	J1939-71	65252	1.1	2	Status signal which identifies whether or not the engine has been shutdown by the idle shutdown timer system.					
	594	Engine Idle Shutdown Driver Alert Mode	J1939-71	65252	1.3	2	Status signal which indicates the status of the driver alert mode of the idle shutdown timer system.					
	595	Cruise Control Active	J1939-71	65265	4.1	2	Cruise control is switched on.					
	596	Cruise Control Enable Switch	J1939-71	65265	4.3	2	Switch signal which indicates that it is possible to manage the cruise control function.					
	597	Brake Switch	J1939-71	65265	4.5	2	Switch signal which indicates that the driver operated brake foot pedal is being pressed.	0		246		
	598	Clutch Switch	J1939-71	65265	4.7	2	Switch signal which indicates that the clutch pedal is being pressed.	0		245		
	599	Cruise Control Set Switch	J1939-71	65265	5.1	2	Switch signal of the cruise control activator which indicates that the activator is in the position "set."					
	600	Cruise Control Coast (Decelerate) Switch	J1939-71	65265	5.3	2	Switch signal of the cruise control activator which indicates that the activator is in the position "coast (decelerate)."					
	601	Cruise Control Resume Switch	J1939-71	65265	5.5	2	Switch signal of the cruise control activator which indicates that the activator is in the position "resume."					
	602	Cruise Control Accelerate Switch	J1939-71	65265	5.7	2	Switch signal of the cruise control activator which indicates that the activator is in the position "accelerate."					
	603	Brake Pedal Switch #2	J1939					0		247		
	604	Transmission Neutral Switch	J1939-71	65219	2.3	2	Identifies the status of the switch that indicates neutral.	0		226		

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	605	Refrigerant High Pressure Switch	J1939-71	65252	3.5	2	Switch signal which indicates the position of the high pressure switch in the coolant circuit of an air conditioning system.	0		228			
	606	Engine Momentary Overspeed Enable	J1939-71	61442	5.1	2	Command signal used to indicate that the engine speed may be boosted up to the maximum engine overspeed value to accommodate transmission downshifts.						
	607	Progressive Shift Disable	J1939-71	61442	5.3	2	Command signal used to indicate that progressive shifting by the engine should be disallowed.						
	608	J1587 (previously SAE J1708 (J1587) Data Link)	J1939-73	57088	1.5	2	Identifies the action to be performed on the J1587 communications port.	0		250			
	609	Controller #2	J1939					0		233			
	610	Power Connect Device	J1939					0		236			
	611	System Diagnostic Code #1	J1939					0		151			
	612	System Diagnostic Code #2	J1939					0		152			
	613	System Diagnostic Code #3	J1939					0		153			
	614	System Diagnostic Code #4	J1939					0		154			
	615	System Diagnostic Code #5	J1939					0		155			
	616	Auxiliary Analog Input #1	J1939					0		227			
	617	Parking Brake On Actuator	J1939					0		234			
	618	Parking Brake Off Actuator	J1939					0		235			
	619	Parking Brake Actuator	J1939-71	65274	4.1	2	Signal which indicates the current state of the actuator(s) that control the parking brake						
	620	5 Volts DC Supply (obsolete)	J1939				This SPN is obsolete. SPNs 3509-3514 should be used instead.	0		232			
	621	Antenna Electronics	J1939					219		2			
	622	J1922 (previously SAE J1922 Data Link)	J1939-73	57088	1.3	2	Identifies the action to be performed on the J1922 communications port.	0		249			
	623	Red Stop Lamp	J1939-73	65226	1.5			0		238			
	624	Amber Warning Lamp	J1939-73	65226	1.3			0		239			
	625	Proprietary Data Link	J1939					0		248			

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	626	Engine Start Enable Device 1	J1939-71	64966	1.1	2	Devices that assist an Engine in starting, e.g. intake heaters and ether. Primary starting aid.	0		237		
	627	Power Supply (obsolete)	J1939				This SPN is obsolete. SPNs 3597 should be used instead.	0		251		
	628	Program Memory	J1939					0		240		
	629	Controller #1	J1939					0		254		
	630	Calibration Memory	J1939					0		253		
	631	Calibration Module	J1939					0		252		
	632	Engine Fuel Shutoff 1 Control	J1939-71	64914	4.3	2	Control setting for fuel shutoff 1. Second instance is SPN 2807	128		17		
	633	Engine Fuel Actuator 1 Control Command	J1939-71	61466	5-6	16	The control command to fuel actuator 1	128		18		
	634	Engine Throttle Bypass Valve	J1939					128		19		
	635	Engine Timing Actuator #1	J1939					128		20		
	636	Engine Position Sensor	J1939					128		21		
	637	Engine Timing Sensor	J1939					128		22		
	638	Engine Fuel Rack Actuator	J1939				Actuator that positions the fuel rack on a diesel fuel injection pump.	128		23		
	639	J1939 Network #1, Primary Vehicle Network (previously SAE J1939 Data Link)	J1939-73	57088	1.1	2	Identifies the action to be performed on the J1939 Network #1, Primary Vehicle Network" communications port.	0		231		
	640	Engine External Protection Input	J1939					128		25		
	641	Engine Variable Geometry Turbocharger Actuator #1	J1939-71	64931	3	8	Actuator that controls the variable geometry turbocharger geometry.	128		27		
	642	Engine Turbocharger Variable Geometry Actuator #2	J1939					128		28		
	643	Engine External Fuel Command Input	J1939					128		29		
	644	Engine External Speed Command Input	J1939					128		30		
	645	Engine Tachometer Signal Output	J1939					128		31		
	646	Engine Turbocharger 1 Wastegate Drive	J1939				Do not use - Use SPN 1188 for Turbocharger 1 Wastegate Drive data.	128		32		
	647	Engine Fan Clutch Output Device Driver	J1939					128		33		

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	648	Engine Exhaust Back Pressure Sensor	J1939						128	34		
	649	Engine Exhaust Back Pressure Regulator Solenoid	J1939						128	35		
	650	Electronic Drive Unit Power Relay	J1939						128	37		
	651	Engine Injector Cylinder #01	J1939						128	1		
	652	Engine Injector Cylinder #02	J1939						128	2		
	653	Engine Injector Cylinder #03	J1939						128	3		
	654	Engine Injector Cylinder #04	J1939						128	4		
	655	Engine Injector Cylinder #05	J1939						128	5		
	656	Engine Injector Cylinder #06	J1939						128	6		
	657	Engine Injector Cylinder #07	J1939						128	7		
	658	Engine Injector Cylinder #08	J1939						128	8		
	659	Engine Injector Cylinder #09	J1939						128	9		
	660	Engine Injector Cylinder #10	J1939						128	10		
	661	Engine Injector Cylinder #11	J1939						128	11		
	662	Engine Injector Cylinder #12	J1939						128	12		
	663	Engine Injector Cylinder #13	J1939						128	13		
	664	Engine Injector Cylinder #14	J1939						128	14		
	665	Engine Injector Cylinder #15	J1939						128	15		
	666	Engine Injector Cylinder #16	J1939						128	16		
	667	Engine Injector Cylinder #17	J1939						128	47		
	668	Engine Injector Cylinder #18	J1939						128	48		
	669	Engine Injector Cylinder #19	J1939						128	49		
	670	Engine Injector Cylinder #20	J1939						128	50		
	671	Engine Injector Cylinder #21	J1939						128	72		
	672	Engine Injector Cylinder #22	J1939						128	73		
	673	Engine Injector Cylinder #23	J1939						128	74		
	674	Engine Injector Cylinder #24	J1939						128	75		

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	675	Engine Glow Plug Lamp	J1939						128	36		
	676	Engine Glow Plug Relay	J1939						128	38		
	677	Engine Starter Motor Relay	J1939				Activates the starter		128	39		
	678	ECU 8 Volts DC Supply	J1939						128	41		
	679	Engine Injection Control Pressure Regulator	J1939						128	42		
	680	Engine Valve Variable Swirl System	J1939						128	61		
	681	Transmission Gear Shift Inhibit Request	J1939-71	256	1.1	2	Command signal to inhibit gear shifts.					
	682	Transmission Torque Converter Lockup Disable Request	J1939-71	256	1.3	2	Command signal to prevent torque converter lockup, which may cause problems in certain circumstances for ASR.					
	683	Disengage Driveline Request	J1939-71	256	1.5	2	Command signal used to simply disengage the driveline, e.g., to prevent engine drag torque from causing high wheel slip on slippery surfaces.					
	684	Requested Percent Clutch Slip	J1939-71	256	2	8	Parameter which represents the percent clutch slip requested by a device.					
	685	Disengage Differential Lock Request - Front Axle 1	J1939-71	256	4.1	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	686	Disengage Differential Lock Request - Front Axle 2	J1939-71	256	4.3	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	687	Disengage Differential Lock Request - Rear Axle 1	J1939-71	256	4.5	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	688	Disengage Differential Lock Request - Rear Axle 2	J1939-71	256	4.7	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	689	Disengage Differential Lock Request - Central	J1939-71	256	5.1	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	690	Disengage Differential Lock Request - Central Front	J1939-71	256	5.3	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	691	Disengage Differential Lock Request - Central Rear	J1939-71	256	5.5	2	Command signal used to disengage the various differential locks, e.g., to allow an undistributed individual wheel control by ABS.					
	692	ABS Offroad Switch Request	J1939			2	Command signal used by the driver via a dashboard switch to choose the ABS offroad function.					
	693	ASR Offroad Switch Request	J1939			2	Command signal used by the driver via a dashboard switch to choose the ASR offroad function.					
	694	ASR "Hill Holder" Switch Request	J1939			2	Command signal used by the driver via a dashboard switch to choose a special ASR function.					
	695	Engine Override Control Mode	J1939-71	0	1.1	2	The override control mode defines which sort of command is used:					
	696	Engine Requested Speed Control Conditions	J1939-71	0	1.3	2	This mode tells the engine control system the governor characteristics that are desired during speed control.					
	697	Auxiliary PWM Driver #1	J1939								128	57
	698	Auxiliary PWM Driver #2	J1939								128	58
	699	Auxiliary PWM Driver #3	J1939								128	59
	700	Auxiliary PWM Driver #4	J1939								128	60
	701	Auxiliary I/O #01	J1939-71	65241	1.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.				128	26
	702	Auxiliary I/O #02	J1939-71	65241	1.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.				128	40
	703	Auxiliary I/O #03	J1939-71	65241	1.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.				128	51

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description		PID	MID	SID	
	704	Auxiliary I/O #04	J1939-71	65241	1.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.			128	52	
	705	Auxiliary I/O #05	J1939-71	65241	2.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.			128	53	
	706	Auxiliary I/O #06	J1939-71	65241	2.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.			128	54	
	707	Auxiliary I/O #07	J1939-71	65241	2.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.			128	55	
	708	Auxiliary I/O #08	J1939-71	65241	2.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	709	Auxiliary I/O #09	J1939-71	65241	3.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	710	Auxiliary I/O #10	J1939-71	65241	3.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	711	Auxiliary I/O #11	J1939-71	65241	3.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	712	Auxiliary I/O #12	J1939-71	65241	3.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	713	Auxiliary I/O #13	J1939-71	65241	4.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	714	Auxiliary I/O #14	J1939-71	65241	4.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	715	Auxiliary I/O #15	J1939-71	65241	4.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	716	Auxiliary I/O #16	J1939-71	65241	4.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	717	Autoshift High Gear Actuator	J1939						128	43			
	718	Autoshift Low Gear Actuator	J1939						128	44			
	719	Autoshift Neutral Actuator	J1939						128	45			
	720	Autoshift Common Low Side (Return)	J1939						128	46			
	721	Prestroke Sensor	J1939						128	62			
	722	Prestroke Actuator	J1939						128	63			
	723	Engine Speed Sensor #2	J1939						128	64			
	724	Engine Oxygen Sensor Heated	J1939						128	65			
	725	Engine Ignition Control Mode Signal	J1939						128	66			
	726	Engine Ignition Control Timing Signal	J1939						128	67			
	727	Engine Turbocharger Secondary Inlet Pressure	J1939						128	68			
	728	Engine After Cooler-Oil Cooler Coolant Temperature	J1939						128	69			
	729	Engine Inlet Air Heater Driver #1	J1939						128	70			
	730	Engine Inlet Air Heater Driver #2	J1939						128	71			
	731	Engine Knock Sensor	J1939						128	76			
	732	Engine Gas Metering Valve	J1939						128	77			
	733	Engine Rack Position Sensor	J1939				Obsolete - Use SPN 1210		128	24			
	734	Transmission Range Clutch C1 Solenoid	J1939						130	1			
	735	Transmission Range Clutch C2 Solenoid	J1939						130	2			
	736	Transmission Range Clutch C3 Solenoid	J1939						130	3			
	737	Transmission Range Clutch C4 Solenoid	J1939						130	4			
	738	Transmission Range Clutch C5 Solenoid	J1939						130	5			
	739	Transmission Range Clutch C6 Solenoid	J1939						130	6			
	740	Transmission Lockup Clutch Actuator	J1939-71	65223	6.3	2	Identifies the status of the actuator that controls the lockup clutch.		130	7			
	741	Transmission Forward Solenoid Valve	J1939						130	8			
	742	Transmission Low Signal Solenoid Valve	J1939						130	9			

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	743	Retarder Enable Solenoid Valve	J1939						130	10			
	744	Retarder Modulation Solenoid Valve	J1939						130	11			
	745	Retarder Response Solenoid Valve	J1939						130	12			
	746	Differential Lock Solenoid Valve #1	J1939				Operates the first differential lock.		130	13			
	747	Engine/Transmission Match	J1939						130	14			
	748	Transmission Output Retarder	J1939-71	65218	1.1	2	Identifies the status of the transmission output retarder.		130	15			
	749	Transmission Neutral Start Output	J1939						130	16			
	750	Transmission Turbine Speed Sensor	J1939						130	17			
	751	Transmission Primary Shift Selector	J1939						130	18			
	752	Transmission Secondary Shift Selector	J1939						130	19			
	753	Transmission Special Function Inputs	J1939						130	20			
	754	Transmission Range C1 Clutch Pressure Indicator	J1939						130	21			
	755	Transmission Range C2 Clutch Pressure Indicator	J1939						130	22			
	756	Transmission Range C3 Clutch Pressure Indicator	J1939						130	23			
	757	Transmission Range C4 Clutch Pressure Indicator	J1939						130	24			
	758	Transmission Range C5 Clutch Pressure Indicator	J1939						130	25			
	759	Transmission Range C6 Clutch Pressure Indicator	J1939						130	26			
	760	Transmission Lockup Clutch Pressure Indicator (Obsolete - use 740)	J1939						130	27			
	761	Transmission Forward Range Pressure Indicator	J1939						130	28			
	762	Transmission Neutral Range Pressure Indicator	J1939						130	29			
	763	Transmission Reverse Range Pressure Indicator	J1939						130	30			
	764	Retarder Response System Pressure Indicator	J1939						130	31			

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	765	Differential Lock Clutch Pressure Indicator	J1939						130	32			
	766	Transmission Multiple Pressure Indicators	J1939						130	33			
	767	Transmission Reverse Direction Switch	J1939-71	65219	2.1	2	Identifies the status of the switch that indicates reverse direction.		130	34			
	768	Transmission Range High Actuator	J1939-71	65223	5.1	2	Identifies the status of the range high actuator in the auxiliary unit.		130	35			
	769	Transmission Range Low Actuator	J1939-71	65223	5.3	2	Identifies the status of the range low actuator in the auxiliary unit.		130	36			
	770	Transmission Splitter Direct Actuator	J1939-71	65223	5.5	2	Identifies the status of the splitter direct actuator in the auxiliary unit.		130	37			
	771	Transmission Splitter Indirect Actuator	J1939-71	65223	5.7	2	Identifies the status of the splitter indirect actuator in the auxiliary unit.		130	38			
	772	Transmission Shift Finger Rail Actuator 1	J1939-71	65223	4.1	2	Identifies the status of the actuator that moves the shift finger identified as rail actuator #1.		130	39			
	773	Transmission Shift Finger Gear Actuator 1	J1939-71	65223	4.3	2	Identifies the status of the actuator that moves the shift finger identified as gear actuator #1.		130	40			
	774	Transmission Upshift Request Switch	J1939						130	41			
	775	Transmission Downshift Request Switch	J1939						130	42			
	776	Torque Converter Interrupt Actuator	J1939						130	43			
	777	Torque Converter Lockup Actuator	J1939						130	44			
	778	Transmission High Range Sense Switch	J1939-71	65219	1.1	2	Identifies the status of the switch that represents high range.		130	45			
	779	Transmission Low Range Sense Switch	J1939-71	65219	1.3	2	Identifies the status of the switch that represents low range.		130	46			
	780	Transmission Shift Finger Neutral Indicator	J1939-71	65223	3.1	2	Indicates the status of the shift finger in the neutral position.		130	47			
	781	Transmission Shift Finger Engagement Indicator	J1939-71	65223	3.3	2	Identifies the status of the shift finger in the engagement position.		130	48			
	782	Transmission Shift Finger Center Rail Indicator	J1939-71	65223	3.5	2	Identifies the status of the shift finger in the center rail position.		130	49			
	783	Transmission Shift Finger Rail Actuator 2	J1939-71	65223	4.5	2	Identifies the status of the actuator that moves the shift finger identified as rail actuator #2.		130	50			

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	784	Transmission Shift Finger Gear Actuator 2	J1939-71	65223	4.7	2	Identifies the status of the actuator that moves the shift finger identified as gear actuator #2.	130	130	51		
	785	Transmission Hydraulic System	J1939					130	130	52		
	786	Transmission Defuel Actuator	J1939-71	65223	6.5	2	Identifies the status of the actuator that controls the engine defuel mechanism.	130	130	53		
	787	Transmission Inertia Brake Actuator	J1939-71	65223	6.7	2	Identifies the status of the actuator that controls the inertia brake.	130	130	54		
	788	Transmission Clutch Actuator	J1939-71	65223	6.1	2	Identifies the status of the actuator that controls the clutch.	130	130	55		
	789	Wheel Sensor ABS Axle 1 Left	J1939					136	136	1		
	790	Wheel Sensor ABS Axle 1 Right	J1939					136	136	2		
	791	Wheel Sensor ABS Axle 2 Left	J1939					136	136	3		
	792	Wheel Sensor ABS Axle 2 Right	J1939					136	136	4		
	793	Wheel Sensor ABS Axle 3 Left	J1939					136	136	5		
	794	Wheel Sensor ABS Axle 3 Right	J1939					136	136	6		
	795	Pressure Modulation Valve ABS Axle 1 Left	J1939					136	136	7		
	796	Pressure Modulation Valve ABS Axle 1 Right	J1939					136	136	8		
	797	Pressure Modulation Valve ABS Axle 2 Left	J1939					136	136	9		
	798	Pressure Modulation Valve ABS Axle 2 Right	J1939					136	136	10		
	799	Pressure Modulation Valve ABS Axle 3 Left	J1939					136	136	11		
	800	Pressure Modulation Valve ABS Axle 3 Right	J1939					136	136	12		
	801	Retarder Control Relay	J1939					136	136	13		
	802	Relay Diagonal 1	J1939					136	136	14		
	803	Relay Diagonal 2	J1939					136	136	15		
	804	Mode Switch ABS	J1939					136	136	16		
	805	Mode Switch ASR	J1939					136	136	17		
	806	Dif 1 - ASR Valve	J1939					136	136	18		
	807	Dif 2 - ASR Valve	J1939					136	136	19		
	808	Pneumatic Engine Control	J1939					136	136	20		

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	809	Electronic Engine Control (Servomotor)	J1939						136	21			
	810	Speed Signal Input	J1939						136	22			
	811	Warning Light Bulb	J1939						136	23			
	812	ASR Light Bulb	J1939						136	24			
	813	Wheel Sensor ABS Axle 1 Average	J1939						136	25			
	814	Wheel Sensor ABS Axle 2 Average	J1939						136	26			
	815	Wheel Sensor ABS Axle 3 Average	J1939						136	27			
	816	Pressure Modulator, Drive Axle Relay Valve	J1939						136	28			
	817	Pressure Transducer, Drive Axle Relay Valve	J1939						136	29			
	818	Master Control Relay	J1939						136	30			
	819	Trailer Brake Slack Out Of Adjustment Forward Axle Left	J1939						136	31			
	820	Trailer Brake Slack Out Of Adjustment Forward Axle Right	J1939						136	32			
	821	Trailer Brake Slack Out Of Adjustment Rear Axle Left	J1939						136	33			
	822	Trailer Brake Slack Out Of Adjustment Rear Axle Right	J1939						136	34			
	823	Tractor Brake Slack Out Of Adjustment Axle 1 Left	J1939						136	35			
	824	Tractor Brake Slack Out Of Adjustment Axle 1 Right	J1939						136	36			
	825	Tractor Brake Slack Out Of Adjustment Axle 2 Left	J1939						136	37			
	826	Tractor Brake Slack Out Of Adjustment Axle 2 Right	J1939						136	38			
	827	Tractor Brake Slack Out Of Adjustment Axle 3 Left	J1939						136	39			
	828	Tractor Brake Slack Out Of Adjustment Axle 3 Right	J1939						136	40			
	829	Left Fuel Level Sensor	J1939						140	1			
	830	Right Fuel Level Sensor	J1939						140	2			
	831	Engine Fuel Feed Rate Sensor	J1939						140	3			

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	832	Engine Fuel Return Rate Sensor	J1939							140	4		
	833	Fuel Rack Position Sensor	J1939				Obsolete - Use SPN 1210			142	3		
	834	Fuel Rack Actuator	J1939				Obsolete - Use SPN 638			142	4		
	835	Oil Level Indicator Output	J1939							142	5		
	836	Tachometer Drive Output	J1939							142	6		
	837	Speedometer Drive Output	J1939							142	7		
	838	PWM Input (ABS/ASR)	J1939							142	8		
	839	Dead Reckoning Unit	J1939							162	1		
	840	Loran Receiver	J1939							162	2		
	841	Global Positioning System (GPS)	J1939							162	3		
	842	Integrated Navigation Unit	J1939							162	4		
	843	Operator Control Panel (OCP)	J1939							166	1		
	844	Pneumatic Control Unit (PCU)	J1939							166	2		
	845	PCU Steer Solenoid	J1939							166	3		
	846	PCU Drive Solenoid	J1939							166	4		
	847	PCU Trailer, Tag, Or Push Solenoid	J1939							166	5		
	848	PCU Supply Solenoid	J1939							166	6		
	849	PCU Control Solenoid	J1939							166	7		
	850	PCU Deflate Solenoid	J1939							166	8		
	851	Pneumatic - Steer Channel	J1939							166	9		
	852	Pneumatic - Drive Channel	J1939							166	10		
	853	Pneumatic - Trailer, Tag Or Push Channel	J1939							166	11		
	854	Heater Circuit #01	J1939							177	1		
	855	Heater Circuit #02	J1939							177	2		
	856	Heater Circuit #03	J1939							177	3		
	857	Heater Circuit #04	J1939							177	4		
	858	Heater Circuit #05	J1939							177	5		

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	859	Heater Circuit #06	J1939						177	6			
	860	Heater Circuit #07	J1939						177	7			
	861	Heater Circuit #08	J1939						177	8			
	862	Heater Circuit #09	J1939						177	9			
	863	Heater Circuit #10	J1939						177	10			
	864	Heater Circuit #11	J1939						177	11			
	865	Heater Circuit #12	J1939						177	12			
	866	Heater Circuit #13	J1939						177	13			
	867	Heater Circuit #14	J1939						177	14			
	868	Heater Circuit #15	J1939						177	15			
	869	Heater Circuit #16	J1939						177	16			
	870	Heater Regeneration System	J1939						177	17			
	871	Refrigerant Charge	J1939						190	1			
	872	Refrigerant Moisture Level	J1939						190	2			
	873	Non-Condensable Gas In Refrigerant	J1939						190	3			
	874	Refrigerant Flow Control Solenoid	J1939						190	4			
	875	Refrigerant Low Pressure Switch	J1939-71	65252	3.3	2	Switch signal which indicates the position of the low pressure switch in the coolant circuit of an air conditioning system.		190	5			
	876	Compressor Clutch Circuit	J1939						190	6			
	877	Evaporator Thermostat Circuit	J1939						190	7			
	878	Clearance, Side Marker, Identification Lamp Circuit (Black)	J1939						217	9			
	879	Left Turn Lamp Circuit (Yellow)	J1939						217	10			
	880	Stop Lamp Circuit (Red)	J1939						217	11			
	881	Right Turn Lamp Circuit (Green)	J1939						217	12			
	882	Tail Lamp/License Plate Lamp Circuit (Brown)	J1939						217	13			
	883	Auxiliary Lamp Circuit (Blue)	J1939						217	14			
	884	Tractor Mounted Rear Axle Slider Control Unit	J1939						217	15			

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	885	Trailer Mounted Rear Axle Slider Control Unit	J1939						217	16		
	886	Headway Controller Forward Antenna	J1939						219	1		
	887	Headway Controller Brake Input Monitor	J1939						219	3		
	888	Headway Controller Speaker Monitor	J1939						219	4		
	889	Headway Controller Steering Sensor Monitor	J1939						219	5		
	890	Headway Controller Speedometer Monitor	J1939						219	6		
	891	Headway Controller Right Turn Signal Monitor	J1939						219	7		
	892	Headway Controller Left Turn Signal Monitor	J1939						219	8		
	893	Headway Controller Control Display Unit	J1939						219	9		
	894	Headway Controller Right Side Sensor	J1939						219	10		
	895	Headway Controller Left Side Sensor	J1939						219	11		
	896	Headway Controller Rear Sensor	J1939						219	12		
	897	Override Control Mode Priority	J1939-71	0	1.5	2	This field is used as an input to the engine or retarder to determine the priority of the Override Control Mode received in the Torque/Speed Control message (see PGN 0).					
	898	Engine Requested Speed/Speed Limit	J1939-71	0	2-3	16	This is the engine speed which the engine is expected to operate at if the speed control mode is active or the engine speed which the engine is not expected to exceed if the speed limit mode is active.					
	899	Engine Torque Mode	J1939-71	61444	1.1	4	State signal which indicates which engine torque mode is currently generating, limiting, or controlling the torque.					
	900	Retarder Torque Mode	J1939-71	61440	1.1	4	State signal which indicates which retarder torque mode is currently generating, limiting, or controlling the torque.					
	901	Retarder Type	J1939-71	65249	01.1	4	This parameter provides some indication of the retarder dynamics.					
	902	Retarder Location	J1939-71	65249	01.5	4	This parameter defines whether the "torque/speed curve" defined by the retarder configuration message.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	903	Transmission Forward Direction Switch	J1939-71	65219	2.5	2	Identifies the status of the switch that indicates forward direction.					
	904	Front Axle Speed	J1939-71	65215	1-2	16	The average speed of the two front wheels.					
	905	Relative Speed; Front Axle, Left Wheel	J1939-71	65215	3	8	The speed of the front axle, left wheel relative to the front axle speed, SPN 904.					
	906	Relative Speed; Front Axle, Right Wheel	J1939-71	65215	4	8	The speed of the front axle, right wheel relative to the front axle speed, SPN 904.					
	907	Relative Speed; Rear Axle #1, Left Wheel	J1939-71	65215	5	8	The speed of the rear axle #1, left wheel relative to the front axle speed, SPN 904.					
	908	Relative Speed; Rear Axle #1, Right Wheel	J1939-71	65215	6	8	The speed of the rear axle #1, right wheel relative to the front axle					
	909	Relative Speed; Rear Axle #2, Left Wheel	J1939-71	65215	7	8	The speed of the rear axle #2, left wheel relative to the front axle.					
	910	Relative Speed; Rear Axle #2, Right Wheel	J1939-71	65215	8	8	The speed of the rear axle #2, right wheel relative to the front axle					
	911	Service Component Identification	J1939-71	65216	1	8	Identification of component needing service.					
	912	Service Component Identification	J1939-71	65216	4	8	Identification of component needing service.					
	913	Service Component Identification	J1939-71	65216	6	8	Identification of component needing service.					
	914	Service Distance	J1939-71	65216	2-3	16	The distance which can be traveled by the vehicle before the next service inspection is required.					
	915	Service Delay/Calendar Time Based	J1939-71	65216	5	8	The time in weeks until the next vehicle service inspection is required.					
	916	Service Delay/Operational Time Based	J1939-71	65216	7-8	16	The time in vehicle operational time until the next vehicle service inspection is required.					
	917	High Resolution Total Vehicle Distance	J1939-71	65217	1-4	32	Accumulated distance traveled by the vehicle during its operation.					
	918	High Resolution Trip Distance	J1939-71	65217	5-8	32	Distance traveled during all or part of a journey.					
	919	Ambient Light Sensor	J1939						0	223		
	920	Audible Alarm	J1939						0	224		
	921	Green Lamp	J1939						0	225		

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	922	Ride Height Relay	J1939						136	41			
	923	PWM Output	J1939						142	9			
	924	Auxiliary Output #1	J1939						142	10			
	925	Auxiliary Output #2	J1939						142	11			
	926	Auxiliary Output #3	J1939						142	12			
	927	Location	J1939-71	61446	1	8	To identify to which of several similar devices (such as tires or fuel tanks) the information applies.						
	928	Axle Location	J1939-71	65258	1	8	To identify to which of several similar devices (such as tires or fuel tanks) the information applies.						
	929	Tire Location	J1939-71	65268	1	8	Identifies which tire is associated with the parametric data in this PGN.						
	930	Drive Axle Location	J1939-71	65273	2	8	To identify to which of several similar devices (such as tires or fuel tanks) the information applies.						
	931	Engine Fuel Supply Pump Actuator	J1939						128	78			
	932	Brake System Hold Modulator Valve Solenoid Axle 1 Left	J1939						136	42			
	933	Brake System Hold Modulator Valve Solenoid Axle 1 Right	J1939						136	43			
	934	Brake System Hold Modulator Valve Solenoid Axle 2 Left	J1939						136	44			
	935	Brake System Hold Modulator Valve Solenoid Axle 2 Right	J1939						136	45			
	936	Brake System Hold Modulator Valve Solenoid Axle 3 Left	J1939						136	46			
	937	Brake System Hold Modulator Valve Solenoid Axle 3 Right	J1939						136	47			
	938	Brake System Dump Modulator Valve Solenoid Axle 1 Left	J1939						136	48			
	939	Brake System Dump Modulator Valve Solenoid Axle 1 Right	J1939						136	49			
	940	Brake System Dump Modulator Valve Solenoid Axle 2 Left	J1939						136	50			

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	941	Brake System Dump Modulator Valve Solenoid Axle 2 Right	J1939						136	51		
	942	Brake System Dump Modulator Valve Solenoid Axle 3 Left	J1939						136	52		
	943	Brake System Dump Modulator Valve Solenoid Axle 3 Right	J1939						136	53		
	944	Driver Air Bag Ignitor Loop	J1939						232	1		
	945	Passenger Air Bag Ignitor Loop	J1939						232	2		
	946	Left Belt Tensioner Ignitor Loop	J1939						232	3		
	947	Right Belt Tensioner Ignitor Loop	J1939						232	4		
	948	Safety Restraint System Lamp	J1939						232	5		
	949	Automotive Seat Occupancy Sensor - passenger side	J1939						232	6		
	950	Side Collision Detector - Left	J1939						232	7		
	951	Side Bag Ignitor Loop 1 - Left	J1939						232	8		
	952	Side Bag Ignitor Loop 2 - Left	J1939						232	9		
	953	Side Collision Detector - Right	J1939						232	10		
	954	Side Bag Ignitor Loop 1 - Right	J1939						232	11		
	955	Side Bag Ignitor Loop 2 - Right	J1939						232	12		
	956	Rollover Sensor	J1939						232	13		
	957	Number of Forward Gear Ratios	J1939-71	65250	2	8	Number of forward gear ratios in the transmission, provided as part of the configuration.					
	958	Number of Reverse Gear Ratios	J1939-71	65250	1	8	Number of reverse gear ratios in the transmission, provided as part of the transmission configuration.					
	959	Seconds	J1939-71	65254	1	8	Part of a parameter used to represent time.					
	960	Minutes	J1939-71	65254	2	8	Part of a parameter used to represent time.					
	961	Hours	J1939-71	65254	3	8	Part of a parameter used to represent time.					
	962	Day	J1939-71	65254	5	8	Part of a parameter used to represent a calendar date.					

J1939 Reference												J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description					PID	MID	SID
	963	Month	J1939-71	65254	4	8	Part of a parameter used to represent a calendar date.							
	964	Year	J1939-71	65254	6	8	Part of a parameter used to represent a calendar date.							
	965	Number of Software Identification Fields	J1939-71	65242	1	8	Number of software identification designators represented in the software identification parameter group.							
	966	Engine Test Mode Switch	J1939-71	65265	8.5	2	Switch signal which indicates the position of the engine test mode switch.							
	967	Engine Idle Decrement Switch	J1939-71	65265	8.3	2	Switch signal which indicates the position of the idle decrement switch.							
	968	Engine Idle Increment Switch	J1939-71	65265	8.1	2	Switch signal which indicates the position of the idle increment switch.							
	969	Remote Accelerator Enable Switch	J1939-71	61441	4.7	2	Switch signal which indicates that the remote accelerator has been enabled and controls the engine.							
	970	Engine Auxiliary Shutdown Switch	J1939-71	61441	4.5	2	Switch signal which requests that all engine fueling stop.							
	971	Engine Derate Switch	J1939-71	61441	4.3	2	Switch signal used to activate the torque limiting feature of the engine.							
	972	Accelerator Interlock Switch	J1939-71	61441	4.1	2	Switch signal used to disable the accelerator and remote accelerator inputs, causing the engine to return to idle.							
	973	Engine Retarder Selection	J1939-71	61441	5	8	The position of the operator controlled selector, expressed as a percentage and determined by the ratio of the current position of the selector to its maximum possible position.							
	974	Remote Accelerator Pedal Position	J1939-71	61443	4	8	The ratio of actual position of the remote analog engine speed/torque request input device (such as an accelerator pedal or throttle lever) to the maximum position of the input device.							
	975	Estimated Percent Fan Speed	J1939-71	65213	1	8	Estimated fan speed as a ratio of the fan drive (current speed) to the fully engaged fan drive (maximum fan speed).					26		
	976	PTO State	J1939-71	65265	7.1	5	This parameter is used to indicate the current state or mode of operation by the power takeoff (PTO) device.							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	977	Fan Drive State	J1939-71	65213	2.1	4	This parameter is used to indicate the current state or mode of operation by the fan drive.					
	978	Engine Remote PTO Variable Speed Control Switch	J1939-71	65264	6.5	2	Switch signal which indicates that the remote PTO toggle switch is in the enabled (ON) position.					
	979	Engine Remote PTO Preprogrammed Speed Control Switch	J1939-71	65264	6.3	2	Switch signal which indicates that the remote PTO toggle switch is in the enabled (ON) position.					
	980	Engine PTO Enable Switch	J1939-71	65264	6.1	2	Switch signal which indicates that the PTO toggle switch is in the enabled (ON) position and therefore it is possible to manage the PTO control function.					
	981	Engine PTO Accelerate Switch	J1939-71	65264	7.7	2	Switch signal of the PTO control activator which indicates that the activator is in the position "accelerate".					
	982	Engine PTO Resume Switch	J1939-71	65264	7.5	2	Switch signal of the PTO control activator which indicates that the activator is in the position "resume".					
	983	Engine PTO Coast/Decelerate Switch	J1939-71	65264	7.3	2	Switch signal of the PTO control activator which indicates that the activator is in the position "coast/decelerate".					
	984	Engine PTO Set Switch	J1939-71	65264	7.1	2	Switch signal of the PTO control activator which indicates that the activator is in the position "set".					
	985	A/C High Pressure Fan Switch	J1939-71	65252	3.1	2	Switch signal which indicates that the pressure in the coolant circuit of an air conditioning system is high and the fan may be engaged.					
	986	Requested Percent Fan Speed	J1939-71	57344	1	8	Fan speed as a ratio of the actual fan drive (current speed) to the fully engaged fan drive (maximum fan speed).					
	987	Protect Lamp	J1939-73	65226	1.1			0		222		
	988	Trip Group 1	J1939-71	56832	1.1	2	Command signal used to reset the PGNs and parameters as defined in Table SPN988_A.					
	989	Trip Group 2 - Proprietary	J1939-71	56832	1.3	2	Command signal used to reset proprietary parameters associated with a trip but not defined within this document.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	990	Total Compression Brake Distance	J1939-71	65212	01-04	32	Total distance over which the compression brakes have been active for the life of the engine.					
	991	Trip Compression Brake Distance	J1939-71	65212	05-08	32	Total distance over which the compression brakes have been active since the last trip reset.					
	992	Trip Service Brake Distance	J1939-71	65212	09-12	32	Total distance over which the service brakes have been active since the last trip reset.					
	993	Trip Service Brake Applications	J1939-71	65212	13-16	32	Total number of times the service brakes have been activated since the last trip reset.					
	994	Trip Fan On Time	J1939-71	65211	01-04	32	Total time the fan has been on (due to an automatic trigger or manual trigger) since the last trip reset.					
	995	Trip Fan On Time Due to the Engine System	J1939-71	65211	05-08	32	Total time the fan has been on due to engine triggers (i.e., excluding time on due to an operator manual switch or A/C system) since the last trip reset.					
	996	Trip Fan On Time Due to a Manual Switch	J1939-71	65211	09-12	32	Total time the fan has been on due to manual activation by the operator					
	997	Trip Fan On Time Due to the A/C System	J1939-71	65211	13-16	32	Total time the fan has been on due to the A/C system since the last trip reset.					
	998	Trip Distance on VSL	J1939-71	65210	1-4	32	Total distance accumulated while the engine torque mode is road speed governing since the last trip reset.					
	999	Trip Gear Down Distance	J1939-71	65210	5-8	32	Total distance accumulated while the vehicle has operated in the gear which is one gear down from top gear					
	1000	Trip Distance in Top Gear	J1939-71	65210	9-12	32	Total distance accumulated while the vehicle has operated in top gear for a calibrated minimum time since the last trip reset.					
	1001	Trip Drive Fuel Used	J1939-71	65209	01-04	32	Total fuel consumed while the engine speed is greater than zero, vehicle speed is greater than or equal to 2 km/h, and neither the PTO or the remote PTO is controlling the engine power output, since the last trip reset.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1002	Trip PTO Moving Fuel Used	J1939-71	65209	05-08	32	Total fuel consumed while the PTO or remote PTO is in the hold state, the engine speed is greater than zero, and vehicle speed is greater than or equal to 2 km/h, since the last trip reset.					
	1003	Trip PTO Non-moving Fuel Used	J1939-71	65209	09-12	32	Total fuel consumed while the PTO or remote PTO is in the hold state, the engine speed is greater than zero, and vehicle speed is less than 2 km/h, since the last trip reset.					
	1004	Trip Vehicle Idle Fuel Used	J1939-71	65209	13-16	32	Total fuel consumed while neither the PTO or remote PTO is in the hold state, the engine speed is greater than zero, and vehicle speed is less than 2 km/h, since the last trip reset.					
	1005	Trip Cruise Fuel Used	J1939-71	65209	17-20	32	Total fuel consumed while the engine is in the cruise hold state since the last trip reset.					
	1006	Trip Drive Fuel Economy	J1939-71	65209	21-22	16	Trip drive fuel economy is equal to the distance traveled by vehicle in the drive state					
	1007	Trip Drive Fuel Used (Gaseous)	J1939-71	65208	01-04	32	Total fuel consumed while the engine speed is greater than zero					
	1008	Trip PTO Moving Fuel Used (Gaseous)	J1939-71	65208	05-08	32	Total fuel consumed while the PTO or remote PTO is in the hold state, the engine speed is greater than zero, and vehicle speed is greater than or equal to 2 km/h, since the last trip reset.					
	1009	Trip PTO Non-moving Fuel Used (Gaseous)	J1939-71	65208	09-12	32	Total fuel consumed while the PTO or remote PTO is in the hold state, the engine speed is greater than zero, and vehicle speed is less than to 2 km/h, since the last trip reset.					
	1010	Trip Vehicle Idle Fuel Used (Gaseous)	J1939-71	65208	13-16	32	Total fuel consumed while neither the PTO or remote PTO is active, the engine speed is greater than zero, and vehicle speed is less than to 2 km/h, since the last trip reset.					
	1011	Trip Cruise Fuel Used (Gaseous)	J1939-71	65208	17-20	32	Total fuel consumed while the engine is in the cruise hold state since the last trip reset.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1012	Trip Drive Fuel Economy (Gaseous)	J1939-71	65208	21-22	16	Trip drive fuel economy is equal to the distance traveled by vehicle in the drive state					
	1013	Trip Maximum Engine Speed	J1939-71	65207	1-2	16	Maximum engine speed achieved since the last trip reset.					
	1014	Trip Average Engine Speed	J1939-71	65207	3-4	16	Average speed of the engine since the last trip reset.					
	1015	Trip Drive Average Load Factor	J1939-71	65207	5	8	Average engine load factor while engine speed is greater than zero.					
	1016	Total Drive Average Load Factor	J1939-71	65207	6	8	Average engine load factor while engine speed is greater than zero.					
	1017	Total Engine Cruise Time	J1939-71	65207	7-10	32	Total time that the engine has operated in the cruise hold state, excluding time in accelerator override, over the life of the engine.					
	1018	Trip Maximum Vehicle Speed	J1939-71	65206	1-2	16	Maximum vehicle speed achieved while the engine speed is greater than zero and the accelerator pedal position (APS) is at a value greater than 0%, since the last trip reset.					
	1019	Trip Cruise Distance	J1939-71	65206	3-6	32	Total distance that the engine has operated in the cruise hold state, excluding time in accelerator override, since the last trip reset.					
	1020	Trip Number of Hot Shutdowns	J1939-71	65205	1-2	16	Total number of hot shutdowns since the last trip reset. A hot shutdown is based on operation at high load or high engine speed or for long operating periods without allowing the engine to cool sufficiently.					
	1021	Trip Number of Idle Shutdowns	J1939-71	65205	3-4	16	Total number of times the engine has been shutdown due to idling too long (at normal idle or fast idle) since the last trip reset.					
	1022	Trip Number of Idle Shutdown Overrides	J1939-71	65205	5-6	16	Total number of times an operator disables idle shutdown to prevent an engine shutdown, since the last trip reset.					
	1023	Trip Sudden Decelerations	J1939-71	65205	7-8	16	Total number of decelerations whenever the vehicle deceleration is more than XYZ km/h/sec (where XYZ is a calibratable threshold), since the last trip reset.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1024	Trip Time in VSL	J1939-71	65204	01-04	32	Total time accumulated when the engine has operated on the vehicle speed limiter (VSL) while not in the cruise hold state, since the last trip reset.					
	1025	Trip Time in Top Gear	J1939-71	65204	05-08	32	Total time accumulated when the vehicle has operated in top gear for a calibrated minimum time, since the last trip reset.					
	1026	Trip Time in Gear Down	J1939-71	65204	09-12	32	Total time accumulated when the vehicle has operated in one gear down from the top gear for a calibrated minimum time, since the last trip reset.					
	1027	Trip Time in Derate by Engine	J1939-71	65204	13-16	32	Total time accumulated when the engine final fueling has been derated due to an engine protection algorithm, since the last reset.					
	1028	Total Engine PTO Fuel Used	J1939-71	65203	1-4	32	Total fuel used while the PTO or remote PTO is in the hold state and engine speed is above zero, over the life of the engine.					
	1029	Trip Average Fuel Rate	J1939-71	65203	5-6	16	Average fuel rate, equal to trip fuel divided by trip time while the engine speed is above zero, since the last trip reset.					
	1030	Total Engine PTO Fuel Used (Gaseous)	J1939-71	65202	1-4	32	Total fuel used while the PTO or remote PTO is in the hold state and engine speed is above zero, over the life of the engine.					
	1031	Trip Average Fuel Rate (Gaseous)	J1939-71	65202	5-6	16	Average fuel rate, equal to trip fuel divided by trip time while the engine speed is above zero, since the last trip reset.					
	1032	Total ECU Distance	J1939-71	65201	1-4	32	Total distance accumulated over the life of the ECU. When the ECU is replaced this value shall be reset.					
	1033	Total ECU Run Time	J1939-71	65201	5-8	32	Total time accumulated over the life of the ECU, from ignition switch ON to ignition switch OFF. When the ECU is replaced this value shall be reset.					
	1034	Trip Cruise Time	J1939-71	65200	01-04	32	Total time accumulated while the engine is in the cruise hold state, excluding time in accelerator override, since the last trip reset.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1035	Trip PTO Time	J1939-71	65200	05-08	32	Total time accumulated while the engine is in the PTO or remote PTO hold state since the last trip reset.					
	1036	Trip Engine Running Time	J1939-71	65200	09-12	32	Total time accumulated while the engine speed is greater than zero since the last trip reset.					
	1037	Trip Idle Time	J1939-71	65200	13-16	32	Total time accumulated while the engine speed is greater than zero, both the PTO and remote PTO is inactive, and the vehicle speed is less than 2 km/h, since the last trip reset.					
	1038	Trip Air Compressor On Time	J1939-71	65200	17-20	32	Total time that the air compressor is on and compressing air since the last trip reset.					
	1039	Trip Fuel (Gaseous)	J1939-71	65199	1-4	32	Total fuel consumed (trip drive fuel + trip PTO moving fuel + trip PTO non-moving fuel + trip idle fuel) since the last trip reset.					
	1040	Total Fuel Used (Gaseous)	J1939-71	65199	5-8	32	Total fuel consumed (trip drive fuel + trip PTO moving fuel + trip PTO non-moving fuel + trip idle fuel) over the life of the engine.					
	1041	Start Signal Indicator	J1939					0	219			
	1042	Electronic Tractor/Trailer Interface (ISO 11992)	J1939					0	220			
	1043	Internal Sensor Voltage Supply	J1939					0	221			
	1044	Hydraulic Pump Motor	J1939					136	54			
	1045	Brake Light Switch 1	J1939					136	55			
	1046	Brake Light Switch 2	J1939					136	56			
	1047	Electronic Pressure Control Axle 1	J1939					136	57			
	1048	Pneumatic Back-up Pressure Control Axle 1	J1939					136	58			
	1049	Brake Pressure Sensing Axle 1	J1939					136	59			
	1050	Electronic Pressure Control Axle 2	J1939					136	60			
	1051	Pneumatic Back-up Pressure Control Axle 2	J1939					136	61			
	1052	Brake Pressure Sensing Axle 2	J1939					136	62			
	1053	Electronic Pressure Control Axle 3	J1939					136	63			

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1054	Pneumatic Back-up Pressure Control Axle 3	J1939						136	64			
	1055	Brake Pressure Sensing Axle 3	J1939						136	65			
	1056	Electronic Pressure Control, Trailer Control	J1939						136	66			
	1057	Pneumatic Back-up Pressure Control, Trailer Control	J1939						136	67			
	1058	Brake Pressure Sensing, Trailer Control	J1939						136	68			
	1059	Axle Load Sensor	J1939						136	69			
	1060	Lining Wear Sensor Axle 1 Left	J1939						136	70			
	1061	Lining Wear Sensor Axle 1 Right	J1939						136	71			
	1062	Lining Wear Sensor Axle 2 Left	J1939						136	72			
	1063	Lining Wear Sensor Axle 2 Right	J1939						136	73			
	1064	Lining Wear Sensor Axle 3 Left	J1939						136	74			
	1065	Lining Wear Sensor Axle 3 Right	J1939						136	75			
	1066	Brake Signal Transmitter	J1939						136	76			
	1067	Brake Signal Sensor 1	J1939						136	77			
	1068	Brake Signal Sensor 2	J1939						136	78			
	1069	Tire Dimension Supervision	J1939						136	79			
	1070	Vehicle Deceleration Control	J1939						136	80			
	1071	Cooling Fan Drive Output	J1939						143	27			
	1072	Engine (Compression) Brake Output #1	J1939				Engine Compression Brake driver circuit (includes the ECM driver and solenoid coil).	143	28				
	1073	Engine (Compression) Brake Output #2	J1939				Engine Compression Brake driver circuit (includes the ECM driver and solenoid coil).	143	29				
	1074	Engine (Exhaust) Brake Output	J1939					143	30				
	1075	Engine Electric Lift Pump for Engine Fuel Supply	J1939										
	1076	Engine Fuel Injection Pump Fuel Control Valve	J1939										
	1077	Engine Fuel Injection Pump Controller	J1939										

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description		PID	MID	SID	
	1078	Engine Fuel Injection Pump Speed/Position Sensor	J1939									
	1079	Sensor Supply Voltage 1 (+5V DC) (obsolete)	J1939				This SPN is obsolete. SPNs 3509-3514 should be used instead.					
	1080	Sensor Supply Voltage 2 (+5V DC) (obsolete)	J1939				This SPN is obsolete. SPNs 3509-3514 should be used instead.					
	1081	Engine Wait to Start Lamp	J1939-71	65252	4.1	2	Lamp signal which indicates that the engine is too cold to start and the operator should wait until the signal becomes inactive (turns off).					
	1082	Engine Coolant Load Increase	J1939-71	61440	4.1	2	Status of an event, external to the engine, that may increase the nominal temperature of the engine coolant liquid.					
	1083	Auxiliary I/O Channel #1	J1939-71	65241	5-6	16	Auxiliary channel of data (16 bit) read by the ECU. This data is in A/D counts and is manufacturer specific.					
	1084	Auxiliary I/O Channel #2	J1939-71	65241	7-8	16	Auxiliary channel of data (16 bit) read by the ECU. This data is in A/D counts and is manufacturer specific.					
	1085	Intended Retarder Percent Torque	J1939-71	61440	3	8	Braking torque of retarder that the retarder is currently trying to achieve.					
	1086	Parking and/or Trailer Air Pressure	J1939-71	65198	2	8	The pneumatic pressure in the circuit or reservoir for the parking brake and/or the trailer supply.					
	1087	Service Brake Circuit 1 Air Pressure	J1939-71	65198	3	8	The pneumatic pressure in the primary service brake circuit or reservoir, supplying the rear axle.					
	1088	Service Brake Circuit 2 Air Pressure	J1939-71	65198	4	8	The pneumatic pressure in the secondary service brake circuit or reservoir, supplying the front axle.					
	1089	Auxiliary Equipment Supply Pressure	J1939-71	65198	5	8	The pneumatic pressure in the auxiliary circuit.					
	1090	Air Suspension Supply Pressure	J1939-71	65198	6	8	The pneumatic pressure in the circuit for the electronically controlled air suspension system.					
	1091	Brake Application Pressure High Range, Front Axle, Left Wheel	J1939-71	65197	1	8	The brake application pressure for the left wheel on the front axle.					
	1092	Brake Application Pressure High Range, Front Axle, Right Wheel	J1939-71	65197	2	8	The brake application pressure for the right wheel on the front axle.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1093	Brake Application Pressure High Range, Rear Axle #1, Left Wheel	J1939-71	65197	3	8	The brake application pressure for the left wheel on the rear axle #1.						
	1094	Brake Application Pressure High Range, Rear Axle #1, Right Wheel	J1939-71	65197	4	8	The brake application pressure for the right wheel on the rear axle #1.						
	1095	Brake Application Pressure High Range, Rear Axle #2, Left Wheel	J1939-71	65197	5	8	The brake application pressure for the left wheel on the rear axle #2.						
	1096	Brake Application Pressure High Range, Rear Axle #2, Right Wheel	J1939-71	65197	6	8	The brake application pressure for the right wheel on the rear axle #2.						
	1097	Brake Application Pressure High Range, Rear Axle #3, Left Wheel	J1939-71	65197	7	8	The brake application pressure for the left wheel on the rear axle #3.						
	1098	Brake Application Pressure High Range, Rear Axle #3, Right Wheel	J1939-71	65197	8	8	The brake application pressure for the right wheel on the rear axle #3.						
	1099	Brake Lining Remaining, Front Axle, Left Wheel	J1939-71	65196	1	8	The percentage of brake lining which can still be measured for the left wheel on the front axle.						
	1100	Brake Lining Remaining, Front Axle, Right Wheel	J1939-71	65196	2	8	The percentage of brake lining which can still be measured for the right wheel on the front axle.						
	1101	Brake Lining Remaining, Rear Axle #1, Left Wheel	J1939-71	65196	3	8	The percentage of brake lining which can still be measured for the left wheel on the rear axle #1.						
	1102	Brake Lining Remaining, Rear Axle #1, Right Wheel	J1939-71	65196	4	8	The percentage of brake lining which can still be measured for the right wheel on the rear axle #1.						
	1103	Brake Lining Remaining, Rear Axle #2, Left Wheel	J1939-71	65196	5	8	The percentage of brake lining which can still be measured for the left wheel on the rear axle #2.						
	1104	Brake Lining Remaining, Rear Axle #2, Right Wheel	J1939-71	65196	6	8	The percentage of brake lining which can still be measured for the right wheel on the rear axle #2.						
	1105	Brake Lining Remaining, Rear Axle #3, Left Wheel	J1939-71	65196	7	8	The percentage of brake lining which can still be measured for the left wheel on the rear axle #3.						
	1106	Brake Lining Remaining, Rear Axle #3, Right Wheel	J1939-71	65196	8	8	The percentage of brake lining which can still be measured for the right wheel on the rear axle #3.						
	1107	Engine Protection System Timer State	J1939-71	65252	5.7	2	Status signal which indicates the current mode of the engine protection system timer system. See Figure SPN1107_A.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1108	Engine Protection System Timer Override	J1939-71	65252	5.5	2	Status signal which indicates the status of the override feature of the engine protection system timer.					
	1109	Engine Protection System Approaching Shutdown	J1939-71	65252	5.3	2	Status signal which indicates that engine shutdown is imminent.					
	1110	Engine Protection System has Shutdown Engine	J1939-71	65252	5.1	2	Status signal which indicates whether or not the engine protection system has shutdown the engine.					
	1111	Engine Protection System Configuration	J1939-71	65252	6.7	2	Parameter which indicates the configuration of the engine shutdown system.					
	1112	Engine (Compression) Brake Output #3	J1939				Engine Compression Brake driver circuit (includes the ECM driver and solenoid coil).	128	82			
	1113	Recommended Gear	J1939-71	65195	1	8	The transmission calculates this gear continuously.					
	1114	Lowest Possible Gear	J1939-71	65195	3	8	The transmission calculates this gear continuously. Together with the highest possible gear (see SPN 1115), it enables a management computer to know the exact range of available gears.					
	1115	Highest Possible Gear	J1939-71	65195	2	8	The transmission calculates this gear continuously. Together with the lowest possible gear (see SPN 1114), it enables a management computer to know the exact range of available gears.					
	1116	Engine Gaseous Fuel Correction Factor	J1939-71	65194	1	8	A correction to a predefined gaseous fuel energy (expressed in energy per unit volume) represented as a percentage.					
	1117	Engine Desired Rated Exhaust Oxygen	J1939-71	65193	1-2	16	The desired amount of oxygen in the exhaust at rated conditions represented as a percentage by volume with respect to the total volume of exhaust gases leaving the engine.					
	1118	Engine Desired Exhaust Oxygen	J1939-71	65193	3-4	16	The desired amount of oxygen in the exhaust represented as a percentage by volume with respect to the total volume of exhaust gases leaving the engine.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1119	Engine Actual Exhaust Oxygen	J1939-71	65193	5-6	16	The actual amount of oxygen in the exhaust represented as a percentage by volume with respect to the total volume of exhaust gases leaving the engine.					
	1120	Articulation Angle	J1939-71	65192	1	8	Angle of deflection of an articulated transit vehicle. A right turn is indicated with a positive angle and a left turn is indicated with a negative angle.					
	1121	EBS Brake Switch	J1939-71	61441	1.7	2	Switch signal which indicates that the brake pedal is being pressed. The EBS brake switch is independent of the brake light switch and has no provisions for external connections.					
	1122	Engine Alternator Bearing 1 Temperature	J1939-71	65191	1	8	Temperature of the bearing inside the alternator. Bearing 1 is the left or rear bearing.					
	1123	Engine Alternator Bearing 2 Temperature	J1939-71	65191	2	8	Temperature of the bearing inside the alternator. Bearing 2 is the right or front bearing.					
	1124	Engine Alternator Winding 1 Temperature	J1939-71	65191	3	8	Temperature of the windings inside the alternator.					
	1125	Engine Alternator Winding 2 Temperature	J1939-71	65191	4	8	Temperature of the windings inside the alternator.					
	1126	Engine Alternator Winding 3 Temperature	J1939-71	65191	5	8	Temperature of the windings inside the alternator.					
	1127	Engine Turbocharger 1 Boost Pressure	J1939-71	65190	1-2	16	Gage pressure of air measured downstream of the compressor discharge side of the turbocharger.					
	1128	Engine Turbocharger 2 Boost Pressure	J1939-71	65190	3-4	16	Gage pressure of air measured downstream of the compressor discharge side of the turbocharger.					
	1129	Engine Turbocharger 3 Boost Pressure	J1939-71	65190	5-6	16	Gage pressure of air measured downstream of the compressor discharge side of the turbocharger.					
	1130	Engine Turbocharger 4 Boost Pressure	J1939-71	65190	7-8	16	Gage pressure of air measured downstream of the compressor discharge side of the turbocharger.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1131	Engine Intake Manifold 2 Temperature	J1939-71	65189	1	8	Temperature of pre-combustion air found in intake manifold number 2 of engine air supply system.						
	1132	Engine Intake Manifold 3 Temperature	J1939-71	65189	2	8	Temperature of pre-combustion air found in intake manifold number 3 of engine air supply system.						
	1133	Engine Intake Manifold 4 Temperature	J1939-71	65189	3	8	Temperature of pre-combustion air found in intake manifold number 4 of engine air supply system.						
	1134	Engine Intercooler Thermostat Opening	J1939-71	65262	8	8	The current position of the thermostat used to regulate the temperature of the engine intercooler.						
	1135	Engine Oil Temperature 2	J1939-71	65188	1-2	16	Temperature of the engine lubricant.						
	1136	Engine ECU Temperature	J1939-71	65188	3-4	16	Temperature of the engine electronic control unit.						
	1137	Engine Exhaust Gas Port 1 Temperature	J1939-71	65187	1-2	16	Temperature at the cylinder exhaust port of the engine.						
	1138	Engine Exhaust Gas Port 2 Temperature	J1939-71	65187	3-4	16	Temperature at the cylinder exhaust port of the engine.						
	1139	Engine Exhaust Gas Port 3 Temperature	J1939-71	65187	5-6	16	Temperature at the cylinder exhaust port of the engine.						
	1140	Engine Exhaust Gas Port 4 Temperature	J1939-71	65187	7-8	16	Temperature at the cylinder exhaust port of the engine.						
	1141	Engine Exhaust Gas Port 5 Temperature	J1939-71	65186	1-2	16	Temperature at the cylinder exhaust port of the engine.						
	1142	Engine Exhaust Gas Port 6 Temperature	J1939-71	65186	3-4	16	Temperature at the cylinder exhaust port of the engine.						
	1143	Engine Exhaust Gas Port 7 Temperature	J1939-71	65186	5-6	16	Temperature at the cylinder exhaust port of the engine.						
	1144	Engine Exhaust Gas Port 8 Temperature	J1939-71	65186	7-8	16	Temperature at the cylinder exhaust port of the engine.						
	1145	Engine Exhaust Gas Port 9 Temperature	J1939-71	65185	1-2	16	Temperature at the cylinder exhaust port of the engine.						
	1146	Engine Exhaust Gas Port 10 Temperature	J1939-71	65185	3-4	16	Temperature at the cylinder exhaust port of the engine.						
	1147	Engine Exhaust Gas Port 11 Temperature	J1939-71	65185	5-6	16	Temperature at the cylinder exhaust port of the engine.						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1148	Engine Exhaust Gas Port 12 Temperature	J1939-71	65185	7-8	16	Temperature at the cylinder exhaust port of the engine.						
	1149	Engine Exhaust Gas Port 13 Temperature	J1939-71	65184	1-2	16	Temperature at the cylinder exhaust port of the engine.						
	1150	Engine Exhaust Gas Port 14 Temperature	J1939-71	65184	3-4	16	Temperature at the cylinder exhaust port of the engine.						
	1151	Engine Exhaust Gas Port 15 Temperature	J1939-71	65184	5-6	16	Temperature at the cylinder exhaust port of the engine.						
	1152	Engine Exhaust Gas Port 16 Temperature	J1939-71	65184	7-8	16	Temperature at the cylinder exhaust port of the engine.						
	1153	Engine Exhaust Gas Port 17 Temperature	J1939-71	65183	1-2	16	Temperature at the cylinder exhaust port of the engine.						
	1154	Engine Exhaust Gas Port 18 Temperature	J1939-71	65183	3-4	16	Temperature at the cylinder exhaust port of the engine.						
	1155	Engine Exhaust Gas Port 19 Temperature	J1939-71	65183	5-6	16	Temperature at the cylinder exhaust port of the engine.						
	1156	Engine Exhaust Gas Port 20 Temperature	J1939-71	65183	7-8	16	Temperature at the cylinder exhaust port of the engine.						
	1157	Engine Main Bearing 1 Temperature	J1939-71	65182	1-2	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1158	Engine Main Bearing 2 Temperature	J1939-71	65182	3-4	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1159	Engine Main Bearing 3 Temperature	J1939-71	65182	5-6	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1160	Engine Main Bearing 4 Temperature	J1939-71	65182	7-8	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1161	Engine Main Bearing 5 Temperature	J1939-71	65181	1-2	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1162	Engine Main Bearing 6 Temperature	J1939-71	65181	3-4	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1163	Engine Main Bearing 7 Temperature	J1939-71	65181	5-6	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1164	Engine Main Bearing 8 Temperature	J1939-71	65181	7-8	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1165	Engine Main Bearing 9 Temperature	J1939-71	65180	1-2	16	Temperature of the main bearing which supports the crankshaft of the engine.						
	1166	Engine Main Bearing 10 Temperature	J1939-71	65180	3-4	16	Temperature of the main bearing which supports the crankshaft of the engine.						

J1939 Reference													J1587 Reference		
Rev	SPN	SPN Name		SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description		PID	MID	SID			
	1167	Engine Main Bearing 11 Temperature		J1939-71	65180	5-6	16	Temperature of the main bearing which supports the crankshaft of the engine.							
	1168	Engine Turbocharger Lube Oil Pressure 2		J1939-71	65179	1	8	Gage pressure of oil in turbocharger lubrication system.							
	1169	Engine Turbocharger 2 Speed		J1939-71	65179	2-3	16	Rotational velocity of rotor in the turbocharger.							
	1170	Engine Turbocharger 3 Speed		J1939-71	65179	4-5	16	Rotational velocity of rotor in the turbocharger.							
	1171	Engine Turbocharger 4 Speed		J1939-71	65179	6-7	16	Rotational velocity of rotor in the turbocharger.							
	1172	Engine Turbocharger 1 Compressor Inlet Temperature		J1939-71	65178	1	16	Temperature of the air entering the compressor side of the turbocharger.							
	1173	Engine Turbocharger 2 Compressor Inlet Temperature		J1939-71	65178	2	16	Temperature of the air entering the compressor side of the turbocharger.							
	1174	Engine Turbocharger 3 Compressor Inlet Temperature		J1939-71	65178	3	16	Temperature of the air entering the compressor side of the turbocharger.							
	1175	Engine Turbocharger 4 Compressor Inlet Temperature		J1939-71	65178	4	16	Temperature of the air entering the compressor side of the turbocharger.							
	1176	Engine Turbocharger 1 Compressor Inlet Pressure		J1939-71	65177	1-2	16	Gage pressure of the air entering the compressor side of the turbocharger.							
	1177	Engine Turbocharger 2 Compressor Inlet Pressure		J1939-71	65177	3-4	16	Gage pressure of the air entering the compressor side of the turbocharger.							
	1178	Engine Turbocharger 3 Compressor Inlet Pressure		J1939-71	65177	5-6	16	Gage pressure of the air entering the compressor side of the turbocharger.							
	1179	Engine Turbocharger 4 Compressor Inlet Pressure		J1939-71	65177	7-8	16	Gage pressure of the air entering the compressor side of the turbocharger.							
	1180	Engine Turbocharger 1 Turbine Inlet Temperature		J1939-71	65176	1-2	16	Temperature of the combustion by-products entering the turbine side of the turbocharger.							
	1181	Engine Turbocharger 2 Turbine Inlet Temperature		J1939-71	65176	3-4	16	Temperature of the combustion by-products entering the turbine side of the turbocharger.							
	1182	Engine Turbocharger 3 Turbine Inlet Temperature		J1939-71	65176	5-6	16	Temperature of the combustion by-products entering the turbine side of the turbocharger.							
	1183	Engine Turbocharger 4 Turbine Inlet Temperature		J1939-71	65176	7-8	16	Temperature of the combustion by-products entering the turbine side of the turbocharger.							

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1184	Engine Turbocharger 1 Turbine Outlet Temperature	J1939-71	65175	1-2	16	Temperature of the combustion by-products exiting the turbine side of the turbocharger.						
	1185	Engine Turbocharger 2 Turbine Outlet Temperature	J1939-71	65175	3-4	16	Temperature of the combustion by-products exiting the turbine side of the turbocharger.						
	1186	Engine Turbocharger 3 Turbine Outlet Temperature	J1939-71	65175	5-6	16	Temperature of the combustion by-products exiting the turbine side of the turbocharger.						
	1187	Engine Turbocharger 4 Turbine Outlet Temperature	J1939-71	65175	7-8	16	Temperature of the combustion by-products exiting the turbine side of the turbocharger.						
	1188	Engine Turbocharger 1 Wastegate Drive	J1939-71	65174	1	8	Position of the wastegate drive.		128	32			
	1189	Engine Turbocharger 2 Wastegate Drive	J1939-71	65174	2	8	Position of the wastegate drive.		128	88			
	1190	Engine Turbocharger 3 Wastegate Drive	J1939-71	65174	3	8	Position of the wastegate drive.						
	1191	Engine Turbocharger 4 Wastegate Drive	J1939-71	65174	4	8	Position of the wastegate drive.						
	1192	Engine Turbocharger Wastegate Actuator Control Air Pressure	J1939-71	65174	5	8	Gage pressure of the air used to control the actuator which opens and closes the wastegate valve.						
	1193	Engine Operation Time Since Rebuild	J1939-71	65173	1-4	32	The time in engine operation since the last engine rebuild.						
	1194	Anti-theft Encryption Seed Present Indicator	J1939-71	56320	1.1	2	Indicates the presence of the encryption seed random number.						
	1195	Anti-theft Password Valid Indicator	J1939-71	56320	1.3	2	Indicates the presence of a validated password.			217			
	1196	Anti-theft Component Status States	J1939-71	56320	1.5	2	Indicates whether or not the component can be started.						
	1197	Anti-theft Modify Password States	J1939-71	56320	1.7	2	This parameter is used to indicate whether a password request was successfully performed, or if the request could not be performed due to system constraints or if the request was not a valid request.						
	1198	Anti-theft Random Number	J1939-71	56320	2-8	56	A seven byte random numeric code provided by the component in response to an anti-theft request.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1199	Anti-theft Encryption Indicator States	J1939-71	56576	1.2	2	This parameter is used to indicate if a random number seed is being requested, or if an encrypted password is being provided to the component.					
	1200	Anti-theft Desired Exit Mode States	J1939-71	56576	1.4	2	This parameter is used to specify the desired triggers that are to be used by the component in deciding when to transition to the Locked state.					
	1201	Anti-theft Command States	J1939-71	56576	1.6	3	This parameter is used to identify the specific requests being sent to the component.					
	1202	Anti-theft Password Representation	J1939-71	56576	2	56	This parameter is the seven byte numeric code (i.e., 'encrypted password' or 'key') that is generated based on the encryption algorithm, the password supplied by the end user, and the random number seed given by the component.					
	1203	Engine Auxiliary Coolant Pressure	J1939-71	65172	1	8	Gage pressure of coolant found in the intercooler which is located after the turbocharger.					
	1204	Electrical Load	J1939-71	65171	1-2	16	Electrical power delivered by the engine to the electrical system connected to the generator.					
	1205	Safety Wire Status	J1939-71	65171	3.1	2	Status signal which indicates that the safety wire has been activated. When the safety wire is activated, the engine will not operate. This is used for maintenance purposes.					
	1206	Engine Turning Gear Engaged	J1939-71			2	Status signal which indicates that the turning gear is engaged. The turning gear is used to turn the flywheel/crankshaft, for maintenance purposes, while the engine is not running.					
	1207	Engine ECU Temperature (OBSOLETE use SPN 1136)	J1939-71			16	Temperature of the engine electronic control unit.					
	1208	Engine Pre-filter Oil Pressure	J1939-71	65170	1	8	Gage pressure of the engine oil before the oil reaches the oil filter.					
	1209	Engine Exhaust Gas Pressure	J1939-71	65170	2-3	16	Gage pressure of the exhaust gases as measured at the turbine inlet of the turbocharger.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1210	Engine Fuel Rack Position	J1939-71	65170	4	8	Measured position of the engine fuel rack.						
	1211	Engine Build Hours Reset	J1939-71	56832	3-1	2	Command signal used to reset the engine rebuild hours.						
	1212	Engine Auxiliary Coolant Temperature	J1939-71	65172	2	8	Temperature of coolant found in the intercooler which is located after the turbocharger.						
	1213	Malfunction Indicator Lamp	J1939-73	65226	1.7	2							
	1214	Suspect Parameter Number	J1939-73	65226	3-4, 5.5								
	1215	Failure Mode Identifier	J1939-73	65226	5.1								
	1216	Occurrence Count	J1939-73	65226	6.1								
	1217	Freeze Frame Length	J1939-73	65229	1								
	1218	Active Trouble Codes	J1939-73	65230	1								
	1219	Previously Active Trouble Codes	J1939-73	65230	2								
	1220	OBD Compliance	J1939-73	65230	3								
	1221	Continuously Monitored Systems Support/Status	J1939-73	65230	4								
	1222	Non-continuously Monitored Systems Support	J1939-73	65230	5								
	1223	Non-continuously Monitored Systems Status	J1939-73	65230	7								
	1224	Test Identifier	J1939-73	58112	1								
	1225	Test Type/Component Identifier	J1939-73	65232	2								
	1226	Test Value	J1939-73	65232	3-4								
	1227	Test Limit Maximum	J1939-73	65232	5-6								
	1228	Test Limit Minimum	J1939-73	65232	7-8								
	1229	Test Identifiers Supported	J1939-73	65234	1								
	1230	Current Data Link	J1939-73	57088	1.7	2	Identifies the action to be performed on the communications port that this parameter was received on.						
	1231	J1939 Network #2	J1939-73	57088	2.7	2	Identifies the action to be performed on the J1939 Network #2 communications port.						
	1232	ISO 9141	J1939-73	57088	2.5	2	Identifies the action to be performed on the ISO 9141 communications port.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1233	J1850	J1939-73	57088	2.3	2	Identifies the action to be performed on the J1850 communications port.					
	1234	Other, Manufacturer Specified Port	J1939-73	57088	2.1	2	Identifies the action to be performed on the "Other, Manufacturer Specified Port" communications port.					
	1235	J1939 Network #3	J1939-73	57088	3.7	2	Identifies the action to be performed on the J1939 Network #3 communications port.					
	1236	Hold Signal	J1939-73	57088	4.5	4	Indicator to all nodes that the communication ports that have been acted upon by the Stop Start Broadcast PGN are remaining in the modified state.					
	1237	Engine Shutdown Override Switch	J1939-71	65265	8.7	2	Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending engine shutdown.					
	1238	Traction Control Override Switch	J1939-71	61441	3.7	2	Switch signal which indicates the position of the traction control override switch.					
	1239	Engine Fuel Leakage 1	J1939-71	65169	1.1	2	Status signal which indicates fuel leakage in the fuel rail of the engine. Location can be either before or after the fuel pump.					
	1240	Engine Fuel Leakage 2	J1939-71	65169	1.3	2	Status signal which indicates fuel leakage in the fuel rail of the engine. Location can be either before or after the fuel pump.					
	1241	Engine Gas Mass Flow Rate 1	J1939-71	65170	5-6	16	Gas mass flow rate delivered to an engine through its first fuel control system.					
	1242	Instantaneous Estimated Brake Power	J1939-71	65170	7-8	16	Estimate of the power developed by the engine.					
	1243	ABS Fully Operational	J1939-71	61441	6.1	2	Signal which indicates whether an ABS system is fully operational or whether its functionality is reduced by a defect or by an intended action					
	1244	Engine Fuel Actuator 2 Control Command	J1939-71	61466	7-8	16	The control command to fuel actuator 2			128		18
	1245	Engine Timing Actuator #2	J1939				Timing actuator for rear time actuator.					84
	1246	Number of Engine Torque History Records	J1939-71	65168	01	8	Number of torque history records contained in the engine torque history PGN.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1247	Engine Power	J1939-71	65168	02-03	16	Advertised engine power capability. Advertised power is what a customer will find on a sales sheet for an engine with a certain calibration.					
	1248	Engine Peak Torque 1	J1939-71	65168	04-05	16	Maximum torque output of the current ECU calibration when the engine operates on torque curve 1.					
	1249	Engine Peak Torque 2	J1939-71	65168	06-07	16	Maximum torque output of the current ECU calibration when the engine operates on torque curve 2.					
	1250	Calibration Record Start Month	J1939-71	65168	08	8	Calendar month timestamp when an ECU record was established.					
	1251	Calibration Record Start Day	J1939-71	65168	09	8	Calendar day timestamp when an ECU record was established.					
	1252	Calibration Record Start Year	J1939-71	65168	10	8	Calendar year timestamp when an ECU record was established.					
	1253	Calibration Record Duration Time	J1939-71	65168	11-14	32	Duration in hours for which the engine operated in the conditions captured in the current record.					
	1254	Torque Limiting Feature Status	J1939-71	65168	15.1	2	Status of an ECU feature which limits the torque output of the engine.					
	1255	Transmission Gear Ratio 1	J1939-71	65168	16-17	16	Gear ratio value stored in the ECU that is used to define a range of transmission gears for which a limit is applied to the engine output torque.					
	1256	Engine Torque Limit 1, Transmission	J1939-71	65168	18-19	16	Limit applied to the engine output torque during vehicle operation in transmission gear ratios numerically greater than transmission gear ratio 1					
	1257	Transmission Gear Ratio 2	J1939-71	65168	20-21	16	Gear ratio value stored in the ECU that is used to define a range of transmission gears for which a limit is applied to the engine output torque.					
	1258	Engine Torque Limit 2, Transmission	J1939-71	65168	22-23	16	Limit applied to the engine output torque during vehicle operation in transmission gear ratios numerically less than or equal to transmission gear ratio 1 and numerically greater than transmission gear ratio 2.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1259	Transmission Gear Ratio 3	J1939-71	65168	24-25	16	Gear ratio value stored in the ECU that is used to define a range of transmission gears for which a limit is applied to the engine output torque.					
	1260	Engine Torque Limit 3, Transmission	J1939-71	65168	26-27	16	Limit applied to the engine output torque during vehicle operation in transmission gear ratios numerically less than or equal to transmission gear ratio 2 and numerically greater than transmission gear ratio 3					
	1261	Engine Torque Limit 4, Transmission	J1939-71	65168	28-29	16	Limit applied to the engine output torque during vehicle operation in transmission gear ratios numerically less than or equal to transmission gear ratio 3					
	1262	Engine Torque Limit 5, Switch	J1939-71	65168	30-31	16	Limit applied to the engine output torque based on activation of an ECU switch input.					
	1263	Engine Torque Limit 6, Axle Input	J1939-71	65168	32-33	16	Limit applied to the engine output torque based on the maximum allowable axle input torque.					
	1264	Engine Extended Crankcase Blow-by Pressure - duplicate (see SPN 22)	J1939-71			8	Differential crankcase blow-by pressure as measured through a tube with a venturi.	22				
	1265	Engine Oil Burn Valve	J1939				Valve to control the flow of oil to be burned off in the engine.				85	
	1266	Engine Oil Replacement Valve	J1939				Valve to control the replacement oil to the engine.				86	
	1267	Idle Shutdown Vehicle Accessories Relay Driver Circuit	J1939				When Idle Shutdown System is activated, the relay will shutdown off accessories.				87	
	1268	Engine Ignition Coil #1	J1939				Coil for high voltage spark plug in gas engines.					
	1269	Engine Ignition Coil #2	J1939				Coil for high voltage spark plug in gas engines.					
	1270	Engine Ignition Coil #3	J1939				Coil for high voltage spark plug in gas engines.					
	1271	Engine Ignition Coil #4	J1939				Coil for high voltage spark plug in gas engines.					
	1272	Engine Ignition Coil #5	J1939				Coil for high voltage spark plug in gas engines.					
	1273	Engine Ignition Coil #6	J1939				Coil for high voltage spark plug in gas engines.					

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1274	Engine Ignition Coil #7	J1939				Coil for high voltage spark plug in gas engines.						
	1275	Engine Ignition Coil #8	J1939				Coil for high voltage spark plug in gas engines.						
	1276	Engine Ignition Coil #9	J1939				Coil for high voltage spark plug in gas engines.						
	1277	Engine Ignition Coil #10	J1939				Coil for high voltage spark plug in gas engines.						
	1278	Engine Ignition Coil #11	J1939				Coil for high voltage spark plug in gas engines.						
	1279	Engine Ignition Coil #12	J1939				Coil for high voltage spark plug in gas engines.						
	1280	Engine Ignition Coil #13	J1939				Coil for high voltage spark plug in gas engines.						
	1281	Engine Ignition Coil #14	J1939				Coil for high voltage spark plug in gas engines.						
	1282	Engine Ignition Coil #15	J1939				Coil for high voltage spark plug in gas engines.						
	1283	Engine Ignition Coil #16	J1939				Coil for high voltage spark plug in gas engines.						
	1284	Engine Ignition Coil #17	J1939				Coil for high voltage spark plug in gas engines.						
	1285	Engine Ignition Coil #18	J1939				Coil for high voltage spark plug in gas engines.						
	1286	Engine Ignition Coil #19	J1939				Coil for high voltage spark plug in gas engines.						
	1287	Engine Ignition Coil #20	J1939				Coil for high voltage spark plug in gas engines.						
	1288	Engine Ignition Coil #21	J1939				Coil for high voltage spark plug in gas engines.						
	1289	Engine Ignition Coil #22	J1939				Coil for high voltage spark plug in gas engines.						
	1290	Engine Ignition Coil #23	J1939				Coil for high voltage spark plug in gas engines.						
	1291	Engine Ignition Coil #24	J1939				Coil for high voltage spark plug in gas engines.						
	1292	Engine Ignition Control Module #1	J1939				Electronic control unit for an ignition system.						

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1293	Engine Ignition Control Module #2	J1939				Electronic control unit for an ignition system.					
	1294	Engine Spark Plug 1	J1939-71	64887	1-2	16	The measured voltage of the spark event on Cylinder #1					
	1295	Engine Spark Plug 2	J1939-71	64887	3-4	16	The measured voltage of the spark event on Cylinder #2					
	1296	Engine Spark Plug 3	J1939-71	64887	5-6	16	The measured voltage of the spark event on Cylinder #3					
	1297	Engine Spark Plug 4	J1939-71	64887	7-8	16	The measured voltage of the spark event on Cylinder #4					
	1298	Engine Spark Plug 5	J1939-71	64886	1-2	16	The measured voltage of the spark event on Cylinder #5					
	1299	Engine Spark Plug 6	J1939-71	64886	3-4	16	The measured voltage of the spark event on Cylinder #6					
	1300	Engine Spark Plug 7	J1939-71	64886	5-6	16	The measured voltage of the spark event on Cylinder #7					
	1301	Engine Spark Plug 8	J1939-71	64886	7-8	16	The measured voltage of the spark event on Cylinder #8					
	1302	Engine Spark Plug 9	J1939-71	64885	1-2	16	The measured voltage of the spark event on Cylinder #9					
	1303	Engine Spark Plug 10	J1939-71	64885	3-4	16	The measured voltage of the spark event on Cylinder #10					
	1304	Engine Spark Plug 11	J1939-71	64885	5-6	16	The measured voltage of the spark event on Cylinder #11					
	1305	Engine Spark Plug 12	J1939-71	64885	7-8	16	The measured voltage of the spark event on Cylinder #12					
	1306	Engine Spark Plug 13	J1939-71	64884	1-2	16	The measured voltage of the spark event on Cylinder #13					
	1307	Engine Spark Plug 14	J1939-71	64884	3-4	16	The measured voltage of the spark event on Cylinder #14					
	1308	Engine Spark Plug 15	J1939-71	64884	5-6	16	The measured voltage of the spark event on Cylinder #15					
	1309	Engine Spark Plug 16	J1939-71	64884	7-8	16	The measured voltage of the spark event on Cylinder #16					
	1310	Engine Spark Plug 17	J1939-71	64883	1-2	16	The measured voltage of the spark event on Cylinder #17					
	1311	Engine Spark Plug 18	J1939-71	64883	3-4	16	The measured voltage of the spark event on Cylinder #18					

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1312	Engine Spark Plug 19	J1939-71	64883	5-6	16	The measured voltage of the spark event on Cylinder #19						
	1313	Engine Spark Plug 20	J1939-71	64883	7-8	16	The measured voltage of the spark event on Cylinder #20						
	1314	Engine Spark Plug 21	J1939-71	64882	1-2	16	The measured voltage of the spark event on Cylinder #21						
	1315	Engine Spark Plug 22	J1939-71	64882	3-4	16	The measured voltage of the spark event on Cylinder #22						
	1316	Engine Spark Plug 23	J1939-71	64882	5-6	16	The measured voltage of the spark event on Cylinder #23						
	1317	Engine Spark Plug 24	J1939-71	64882	7-8	16	The measured voltage of the spark event on Cylinder #24						
	1318	Engine Exhaust Temperature Bank Imbalance	J1939				The imbalance between two banks of of exhaust port temperatures.						
	1319	Engine Intake Manifold Pressure Bank Imbalance	J1939				Imbalance between two banks of intake pressure manifolds						
	1320	Engine External Shutdown Air Supply Pressure	J1939-71	65167	1-2	16	Pressure of the air used to shut off the fuel supply to the engine.						
	1321	Engine Starter Solenoid Lockout Relay Driver Circuit	J1939				This relay is in series with the engine starter moto relay and controlled by engine ECM to prevent starter engagement						
	1322	Engine Misfire for Multiple Cylinders	J1939				When a misfire occurs in any one of the cylinders						
	1323	Engine Misfire Cylinder #1	J1939				Engine misfire detected in cylinder						
	1324	Engine Misfire Cylinder #2	J1939				Engine misfire detected in cylinder						
	1325	Engine Misfire Cylinder #3	J1939				Engine misfire detected in cylinder						
	1326	Engine Misfire Cylinder #4	J1939				Engine misfire detected in cylinder						
	1327	Engine Misfire Cylinder #5	J1939				Engine misfire detected in cylinder						
	1328	Engine Misfire Cylinder #6	J1939				Engine misfire detected in cylinder						
	1329	Engine Misfire Cylinder #7	J1939				Engine misfire detected in cylinder						
	1330	Engine Misfire Cylinder #8	J1939				Engine misfire detected in cylinder						
	1331	Engine Misfire Cylinder #9	J1939				Engine misfire detected in cylinder						
	1332	Engine Misfire Cylinder #10	J1939				Engine misfire detected in cylinder						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1333	Engine Misfire Cylinder #11	J1939				Engine misfire detected in cylinder					
	1334	Engine Misfire Cylinder #12	J1939				Engine misfire detected in cylinder					
	1335	Engine Misfire Cylinder #13	J1939				Engine misfire detected in cylinder					
	1336	Engine Misfire Cylinder #14	J1939				Engine misfire detected in cylinder					
	1337	Engine Misfire Cylinder #15	J1939				Engine misfire detected in cylinder					
	1338	Engine Misfire Cylinder #16	J1939				Engine misfire detected in cylinder					
	1339	Engine Misfire Cylinder #17	J1939				Engine misfire detected in cylinder					
	1340	Engine Misfire Cylinder #18	J1939				Engine misfire detected in cylinder					
	1341	Engine Misfire Cylinder #19	J1939				Engine misfire detected in cylinder					
	1342	Engine Misfire Cylinder #20	J1939				Engine misfire detected in cylinder					
	1343	Engine Misfire Cylinder #21	J1939				Engine misfire detected in cylinder					
	1344	Engine Misfire Cylinder #22	J1939				Engine misfire detected in cylinder					
	1345	Engine Misfire Cylinder #23	J1939				Engine misfire detected in cylinder					
	1346	Engine Misfire Cylinder #24	J1939				Engine misfire detected in cylinder					
	1347	Engine Fuel Pump Pressurizing Assembly #1	J1939				The pumping assembly of the fuel system					
	1348	Engine Fuel Pump Pressurizing Assembly #2	J1939				The pumping assembly of the fuel system					
	1349	Engine Injector Metering Rail 2 Pressure	J1939-71	65243	7-8	16	The gage pressure of fuel in the metering rail #2 as delivered from the supply pump to the injector metering inlet.	129				
	1350	Time Since Last Service	J1939-71	65166	2-3	16	The vehicle operation time since the last service was performed.					
	1351	Air Compressor Status	J1939-71	65198	7.1	2	Indicates whether the air compressor is actively compressing air.					
	1352	Engine Cylinder 1 Knock Level	J1939-71	61463	1	8	Used to indicate the level of knock for engine cylinder 1 (replaces 1352)					
	1353	Engine Cylinder 2 Knock Level	J1939-71	61463	2	8	Used to indicate the level of knock for engine cylinder 2					
	1354	Engine Cylinder 3 Knock Level	J1939-71	61463	3	8	Used to indicate the level of knock for engine cylinder 3					
	1355	Engine Cylinder 4 Knock Level	J1939-71	61463	4	8	Used to indicate the level of knock for engine cylinder 4					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1356	Engine Cylinder 5 Knock Level	J1939-71	61463	5	8	Used to indicate the level of knock for engine cylinder 5					
	1357	Engine Cylinder 6 Knock Level	J1939-71	61463	6	8	Used to indicate the level of knock for engine cylinder 6					
	1358	Engine Cylinder 7 Knock Level	J1939-71	61463	7	8	Used to indicate the level of knock for engine cylinder 7					
	1359	Engine Cylinder 8 Knock Level	J1939-71	61463	8	8	Used to indicate the level of knock for engine cylinder 8					
	1360	Engine Cylinder 9 Knock Level	J1939-71	61464	1	8	Used to indicate the level of knock for engine cylinder 9					
	1361	Engine Cylinder 10 Knock Level	J1939-71	61464	2	8	Used to indicate the level of knock for engine cylinder 10					
	1362	Engine Cylinder 11 Knock Level	J1939-71	61464	3	8	Used to indicate the level of knock for engine cylinder 11					
	1363	Engine Cylinder 12 Knock Level	J1939-71	61464	4	8	Used to indicate the level of knock for engine cylinder 12					
	1364	Engine Cylinder 13 Knock Level	J1939-71	61464	5	8	Used to indicate the level of knock for engine cylinder 13					
	1365	Engine Cylinder 14 Knock Level	J1939-71	61464	6	8	Used to indicate the level of knock for engine cylinder 14					
	1366	Engine Cylinder 15 Knock Level	J1939-71	61464	7	8	Used to indicate the level of knock for engine cylinder 15					
	1367	Engine Cylinder 16 Knock Level	J1939-71	61464	8	8	Used to indicate the level of knock for engine cylinder 16					
	1368	Engine Cylinder 17 Knock Level	J1939-71	61465	1	8	Used to indicate the level of knock for engine cylinder 17					
	1369	Engine Cylinder 18 Knock Level	J1939-71	61465	2	8	Used to indicate the level of knock for engine cylinder 18					
	1370	Engine Cylinder 19 Knock Level	J1939-71	61465	3	8	Used to indicate the level of knock for engine cylinder 19					
	1371	Engine Cylinder 20 Knock Level	J1939-71	61465	4	8	Used to indicate the level of knock for engine cylinder 20					
	1372	Engine Cylinder 21 Knock Level	J1939-71	61465	5	8	Used to indicate the level of knock for engine cylinder 21					
	1373	Engine Cylinder 22 Knock Level	J1939-71	61465	6	8	Used to indicate the level of knock for engine cylinder 22					
	1374	Engine Cylinder 23 Knock Level	J1939-71	61465	7	8	Used to indicate the level of knock for engine cylinder 23					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1375	Engine Cylinder 24 Knock Level	J1939-71	61465	8	8	Used to indicate the level of knock for engine cylinder 24					
	1376	Battery 2 Potential (Voltage) (duplicate - see also SPN 444)	J1939-71			16	The voltage for isolated battery #2.					
	1377	Engine Synchronization Switch	J1939-71	64971	1.3	2	This is the On/Off operation of the Multiple Unit Synchronization functionality. When it is enabled (i.e. On) the master engine will synchronize one or more slave engines to operate at the same speed.					
	1378	Engine Oil Change Interval	J1939				The engine oil change interval time has expired		128	115		
	1379	Service Component Identification	J1939-71	65166	1	8	Identification of component needing service.					
	1380	Engine Oil Level Remote Reservoir	J1939-71	65130	1	8	Ratio of current volume of engine oil in a remote reservoir to the maximum required volume.	17				
	1381	Engine Fuel Supply Pump Inlet Pressure	J1939-71	65130	2	8	Absolute pressure of fuel at the fuel supply pump inlet.					
	1382	Engine Fuel Filter (suction side) Differential Pressure	J1939-71	65130	3	8	Differential pressure measured across the fuel filter located between the fuel tank and the supply pump.	16				
	1383	Engine was Shut Down Hot	J1939				Abrupt engine shutdown when hot		128	116		
	1384	Engine has Been Shut Down from Data Link Information	J1939				Engine commanded to shutdown via the datalink		128	117		
	1385	Auxiliary Temperature #1 (duplicate see also SPN 441)	J1939-71			8	Temperature measured by auxiliary temperature sensor #1 or #2. Not to be used in place of existing SPNs.					
	1386	Auxiliary Temperature #2 (duplicate see also SPN 442)	J1939-71			8	Temperature measured by auxiliary temperature sensor #1 or #2. Not to be used in place of existing SPNs.					
	1387	Auxiliary Pressure #1	J1939-71	65164	3	8	Pressure measured by auxiliary pressure sensor #1. Not to be used in place of existing SPNs.					
	1388	Auxiliary Pressure #2	J1939-71	65164	4	8	Pressure measured by auxiliary pressure sensor #2. Not to be used in place of existing SPNs.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1389	Engine Fuel Specific Gravity	J1939-71	65202	7-8	16	This parameter conveys the specific gravity of the gaseous fuel being used by the engine.					
	1390	Engine Fuel Valve 1 Inlet Absolute Pressure	J1939-71	65163	1-2	16	The absolute pressure of gas on the inlet side of the first system control valve.					
	1391	Engine Fuel Valve Differential Pressure	J1939-71	65163	3-4	16	The differential pressure between the inlet and the outlet of a gaseous fuel valve.					
	1392	Engine Air to Fuel Differential Pressure	J1939-71	65163	5-6	16	The differential pressure between the gaseous fuel and the air intake manifold.					
	1393	Engine Cylinder #1 Ignition Transformer Secondary Output	J1939-71	65160	1	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1394	Engine Cylinder #2 Ignition Transformer Secondary Output	J1939-71	65160	2	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1395	Engine Cylinder #3 Ignition Transformer Secondary Output	J1939-71	65160	3	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1396	Engine Cylinder #4 Ignition Transformer Secondary Output	J1939-71	65160	4	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1397	Engine Cylinder #5 Ignition Transformer Secondary Output	J1939-71	65160	5	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1398	Engine Cylinder #6 Ignition Transformer Secondary Output	J1939-71	65160	6	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1399	Engine Cylinder #7 Ignition Transformer Secondary Output	J1939-71	65160	7	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1400	Engine Cylinder #8 Ignition Transformer Secondary Output	J1939-71	65160	8	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1401	Engine Cylinder #9 Ignition Transformer Secondary Output	J1939-71	65161	1	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1402	Engine Cylinder #10 Ignition Transformer Secondary Output	J1939-71	65161	2	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1403	Engine Cylinder #11 Ignition Transformer Secondary Output	J1939-71	65161	3	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1404	Engine Cylinder #12 Ignition Transformer Secondary Output	J1939-71	65161	4	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1405	Engine Cylinder #13 Ignition Transformer Secondary Output	J1939-71	65161	5	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1406	Engine Cylinder #14 Ignition Transformer Secondary Output	J1939-71	65161	6	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1407	Engine Cylinder #15 Ignition Transformer Secondary Output	J1939-71	65161	7	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1408	Engine Cylinder #16 Ignition Transformer Secondary Output	J1939-71	65161	8	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1409	Engine Cylinder #17 Ignition Transformer Secondary Output	J1939-71	65162	1	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1410	Engine Cylinder #18 Ignition Transformer Secondary Output	J1939-71	65162	2	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1411	Engine Cylinder #19 Ignition Transformer Secondary Output	J1939-71	65162	3	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1412	Engine Cylinder #20 Ignition Transformer Secondary Output	J1939-71	65162	4	8	This parameter indicates the relative intensity of the secondary output voltage of the ignition transformer.					
	1413	Engine Cylinder #1 Ignition Timing	J1939-71	65154	1-2	16	The ignition timing of the cylinder.					
	1414	Engine Cylinder #2 Ignition Timing	J1939-71	65154	3-4	16	The ignition timing of the cylinder.					
	1415	Engine Cylinder #3 Ignition Timing	J1939-71	65154	5-6	16	The ignition timing of the cylinder.					
	1416	Engine Cylinder #4 Ignition Timing	J1939-71	65154	7-8	16	The ignition timing of the cylinder.					
	1417	Engine Cylinder #5 Ignition Timing	J1939-71	65155	1-2	16	The ignition timing of the cylinder.					
	1418	Engine Cylinder #6 Ignition Timing	J1939-71	65155	3-4	16	The ignition timing of the cylinder.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1419	Engine Cylinder #7 Ignition Timing	J1939-71	65155	5-6	16	The ignition timing of the cylinder.						
	1420	Engine Cylinder #8 Ignition Timing	J1939-71	65155	7-8	16	The ignition timing of the cylinder.						
	1421	Engine Cylinder #9 Ignition Timing	J1939-71	65156	1-2	16	The ignition timing of the cylinder.						
	1422	Engine Cylinder #10 Ignition Timing	J1939-71	65156	3-4	16	The ignition timing of the cylinder.						
	1423	Engine Cylinder #11 Ignition Timing	J1939-71	65156	5-6	16	The ignition timing of the cylinder.						
	1424	Engine Cylinder #12 Ignition Timing	J1939-71	65156	7-8	16	The ignition timing of the cylinder.						
	1425	Engine Cylinder #13 Ignition Timing	J1939-71	65157	1-2	16	The ignition timing of the cylinder.						
	1426	Engine Cylinder #14 Ignition Timing	J1939-71	65157	3-4	16	The ignition timing of the cylinder.						
	1427	Engine Cylinder #15 Ignition Timing	J1939-71	65157	5-6	16	The ignition timing of the cylinder.						
	1428	Engine Cylinder #16 Ignition Timing	J1939-71	65157	7-8	16	The ignition timing of the cylinder.						
	1429	Engine Cylinder #17 Ignition Timing	J1939-71	65158	1-2	16	The ignition timing of the cylinder.						
	1430	Engine Cylinder #18 Ignition Timing	J1939-71	65158	3-4	16	The ignition timing of the cylinder.						
	1431	Engine Cylinder #19 Ignition Timing	J1939-71	65158	5-6	16	The ignition timing of the cylinder.						
	1432	Engine Cylinder #20 Ignition Timing	J1939-71	65158	7-8	16	The ignition timing of the cylinder.						
	1433	Engine Desired Ignition Timing #1	J1939-71	65159	1-2	16	A programmable timing value specific to the engine's application. Factors affecting this value include both fuel type and the nature of the load being driven.						
	1434	Engine Desired Ignition Timing #2	J1939-71	65159	3-4	16	A programmable timing value specific to the engine's application. Factors affecting this value include both fuel type and the nature of the load being driven.						
	1435	Engine Desired Ignition Timing #3	J1939-71	65159	5-6	16	A programmable timing value specific to the engine's application. Factors affecting this value include both fuel type and the nature of the load being driven.						
	1436	Engine Actual Ignition Timing	J1939-71	65159	7-8	16	The actual ignition timing at the current engine conditions. This parameter may or may not be equal to one of the desired timing parameters (see SPNs 1433-1435), depending on the status of the engine.						
	1437	Road Speed Limit Status	J1939-71	61443	1.5	2	Status (active or not active) of the system used to limit maximum vehicle velocity.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1438	ABS/EBS Amber Warning Signal (Powered Vehicle)	J1939-71	61441	6-5	2	This parameter commands the ABS/EBS amber/yellow optical warning signal					
	1439	EBS Red Warning Signal	J1939-71	61441	6-3	2	This parameter commands the EBS red optical warning signal					
	1440	Engine Fuel Flow Rate 1	J1939-71	65153	1-2	16	The rate at which the fuel is flowing through a fuel valve.					
	1441	Engine Fuel Flow Rate 2	J1939-71	65153	3-4	16	The rate at which the fuel is flowing through a fuel valve.					
	1442	Engine Fuel Valve 1 Position	J1939-71	65153	5	8	The position of a gaseous fuel valve that is metering the fuel flow to the engine.					
	1443	Engine Fuel Valve 2 Position	J1939-71	65153	6	8	The position of a gaseous fuel valve that is metering the fuel flow to the engine.					
	1444	Engine Cylinder #1 Combustion Time	J1939-71	65147	1-2	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1445	Engine Cylinder #2 Combustion Time	J1939-71	65147	3-4	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1446	Engine Cylinder #3 Combustion Time	J1939-71	65147	5-6	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1447	Engine Cylinder #4 Combustion Time	J1939-71	65147	7-8	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1448	Engine Cylinder #5 Combustion Time	J1939-71	65148	1-2	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1449	Engine Cylinder #6 Combustion Time	J1939-71	65148	3-4	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1450	Engine Cylinder #7 Combustion Time	J1939-71	65148	5-6	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1451	Engine Cylinder #8 Combustion Time	J1939-71	65148	7-8	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1452	Engine Cylinder #9 Combustion Time	J1939-71	65149	1-2	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1453	Engine Cylinder #10 Combustion Time	J1939-71	65149	3-4	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1454	Engine Cylinder #11 Combustion Time	J1939-71	65149	5-6	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1455	Engine Cylinder #12 Combustion Time	J1939-71	65149	7-8	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1456	Engine Cylinder #13 Combustion Time	J1939-71	65150	1-2	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1457	Engine Cylinder #14 Combustion Time	J1939-71	65150	3-4	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1458	Engine Cylinder #15 Combustion Time	J1939-71	65150	5-6	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1459	Engine Cylinder #16 Combustion Time	J1939-71	65150	7-8	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1460	Engine Cylinder #17 Combustion Time	J1939-71	65151	1-2	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1461	Engine Cylinder #18 Combustion Time	J1939-71	65151	3-4	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1462	Engine Cylinder #19 Combustion Time	J1939-71	65151	5-6	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1463	Engine Cylinder #20 Combustion Time	J1939-71	65151	7-8	16	The amount of time from when the ignition of the fuel is initiated to when the fuel is completely ignited.					
	1464	Engine Desired Combustion Time	J1939-71	65152	1-2	16	The desired combustion time based upon engine load and speed lookup maps.					
	1465	Engine Average Combustion Time	J1939-71	65152	3-4	16	The average combustion time of all cylinders of an engine.					
	1466	Steer Channel Mode	J1939-71	65144	2-1	4	Indicates the functional mode of steer channel of the tire pressure control system.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1467	Trailer/tag Channel Mode	J1939-71	65144	3.1	4	Indicates the functional mode of trailer/tag channel of the tire pressure control system.					
	1468	Drive Channel Mode	J1939-71	65144	3.5	4	Indicates the functional mode of trailer/tag channel of the tire pressure control system.					
	1469	PCU Drive Solenoid Status	J1939-71	65144	4.1	2	Current state of the drive solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1470	PCU Steer Solenoid Status	J1939-71	65144	4.3	2	Current state of the steer solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1471	Tire Pressure Supply Switch Status	J1939-71	65144	4.5	2	Current state of an open/closed type switch used to determine if adequate pressure exists for system implementation.					
	1472	PCU Deflate Solenoid Status	J1939-71	65144	5.1	2	Current state of the deflate solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1473	PCU Control Solenoid Status	J1939-71	65144	5.3	2	Current state of the control solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1474	PCU Supply Solenoid Status	J1939-71	65144	5.5	2	Current state of the supply solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1475	PCU Trailer, Tag or Push Solenoid Status	J1939-71	65144	5.7	2	Current state of the trailer, tag, or push solenoid used to implement a tire pressure control system in its pneumatic control unit (PCU).					
	1476	Engine Oil Specific Resistance	J1939			8	Engine oil specific resistance used to describe the engine oil quality.					
	1477	Engine Oil Kinematic Viscosity	J1939			8	Engine oil kinematic viscosity used to describe the engine oil quality.					
	1478	Engine Oil Relative Dielectricity	J1939			8	Engine oil relative dielectricity used to describe the engine oil quality.					
	1479	Security Entity Type	J1939-73	54272	2.1							
	1480	Source Address of Controlling Device for Retarder Control	J1939-71	61440	5	8	The source address of the SAE J1939 device currently controlling the retarder.					
	1481	Source Address of Controlling Device for Brake Control	J1939-71	61441	7	8	The source address of the SAE J1939 device currently controlling the brake system.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1482	Source Address of Controlling Device for Transmission Control	J1939-71	61442	8	8	The source address of the SAE J1939 device currently controlling the transmission.					
	1483	Source Address of Controlling Device for Engine Control	J1939-71	61444	6	8	The source address of the SAE J1939 device currently controlling the engine.					
	1484	Other ECUs Have Reported Fault Codes Affecting Operation	J1939				Indication of fault codes for other devices	0	216			
	1485	ECM Main Relay	J1939					0	218			
	1486	Concave Position	J1939				Combine Concave Clearance Measurement					
	1487	Illumination Brightness Percent	J1939-71	53248	1	8	Commanded Backlight Brightness Level					
	1488	Thresher Speed	J1939-74			16	Speed of the thresher such as found in a combine					
	1489	Cleaning Fan Speed	J1939-74			8	The speed of the cleaning fan					
	1490	Header Backshaft Speed	J1939-74			16	The speed of the feederhouse. The feederhouse is the entry point of crop into the combine					
	1491	Instrument Panel #1 Backlighting Driver	J1939				First Tailings Sensor circuit					
	1492	Instrument Panel #2 Backlighting Driver	J1939				Second Tailings Sensor circuit					
	1493	Tailings System	J1939				Tailings Elevator Paddles (e.g., missing)					
	1494	Tailings Sensor #1	J1939				Drive circuit which engages the unloading auger system					
	1495	Tailings Sensor #2	J1939				Drive circuit which engages the unloading header system					
	1496	Tailings Elevator Paddles	J1939				Drive circuit which engages the unloading separator system					
	1497	Unloading Auger Drive	J1939-74			2	The mode of the unloading Auger driver					
	1498	Header Drive	J1939-74			2	The mode of the Header driver					
	1499	Separator Drive	J1939-74			2	The mode of the Separator driver					
	1500	Tachometer Module Switch Matrix	J1939				Switch input matrix that controls monitoring functions of the tachometer module					
	1501	Grain Loss Module Switch Matrix	J1939				Switch input matrix that controls monitoring functions of the grain loss module					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1502	Automatic Header Control Switch Matrix	J1939				Switch input matrix that controls monitoring functions of the automatic header module					
	1503	Arm Rest Switch Matrix	J1939				Switch input matrix for the module located in the arm rest					
	1504	Operator Seat Switch	J1939			2	This switch senses the presence of the operator in the seat					
	1505	Automatic Header Sensitivity Adjustment	J1939-74			8	A control system parameter. This is the sensitivity adjustment to the automatic header control loop.					
	1506	Automatic Header Rate Adjustment Input	J1939-74			8	An adjustment to the response rate of the automatic header control loop.					
	1507	Discharge Beater Speed Disable Adjustment	J1939				Input to adjust the discharge beater speed					
	1508	Hydraulic Reservoir Temperature	J1939-74			8	The temperature of the hydraulic fluid, measured in the hydraulic reservoir.					
	1509	Thresher Separator Hydraulic Drive 1 Temperature	J1939-74			8	The temperature of the hydraulic fluid in the Thresher Separator Hydraulic Drive #1 gear case					
	1510	Chopper Vane Angle Adjustment	J1939-74			8	The control adjustment of the chopper vane angle					
	1511	Right side Cleaning Shoe Relative Grain Loss	J1939-74			8	A scalar that represents an amount of grain loss exiting the right side of the cleaning shoe					
	1512	Left side Cleaning Shoe Relative Grain Loss	J1939-74			8	A scalar that represents an amount of grain loss exiting the left side of the cleaning shoe					
	1513	Right side Separator Relative Grain Loss	J1939-74			8	The amount of grain loss at the right side of the separator					
	1514	Left side Separator Relative Grain Loss	J1939-74			8	The amount of grain loss at the left side of the separator					
	1515	Header Height System	J1939				General fault in the system that controls the header					
	1516	Header	J1939				Mechanical problem with the header system					
	1517	Header Lift Cylinder Pressure	J1939-74			8	The pressure in the header lift cylinder					
	1518	Header Sensor Identification	J1939-74			8	The system identification of the header sensor configuration.					
	1519	Header Raise Valve Drive	J1939-74			2	The mode of the Header raise valve driver					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1520	Header Lower Valve Drive	J1939-74			2	The mode of the Header lower valve driver					
	1521	Header Tilt Left Valve Drive	J1939-74			2	The mode of the Header tilt left valve driver					
	1522	Header Tilt Right Valve Drive	J1939-74			2	The mode of the Header tilt right valve driver					
	1523	Header Lift Cylinder Pressure Diverted Valve Drive	J1939-74			2	The mode of the diverted valve driver, related to the Header lift cylinder pressure					
	1524	Reel Position Forward Actuator	J1939-74			2	The mode of the Reel position forward actuator					
	1525	Reel Position Aft Actuator	J1939-74			2	The mode of the Reel position aft actuator					
	1526	Reel Position Raise Actuator	J1939-74			2	The mode of the Reel position raise actuator					
	1527	Reel Position Lower Actuator	J1939-74			2	The mode of the Reel position lower actuator					
	1528	Header Drop Rate Control Valve Drive	J1939-74			2	The mode of the driver for the valve which controls the drop rate of the header					
	1529	Header Lift Cylinder Accumulator Shutoff Valve Drive	J1939-74			2	The mode of the driver for the Header Lift Cylinder Accumulator Shutoff Valve					
	1530	Unloading auger flow bypass valve drive	J1939-74			2	The mode of the driver for the unloading auger flow bypass valve					
	1531	Reel Drive Motor Speed Increase Valve Drive	J1939-74			2	The mode of the driver for the reel drive motor speed increase valve.					
	1532	Reel Drive Motor Speed Decrease Valve Drive	J1939-74			2	The mode of the driver for the reel drive motor speed decrease valve.					
	1533	Feederhouse Angle	J1939				Circuit and sensor for measuring the feederhouse angle parameter					
	1534	Header Leftmost Height	J1939-74			16	Height of: Left (or left side of) header, measured relative to the ground					
	1535	Header Rightmost Height	J1939-74			16	Height of: right (or right side of) header, measured relative to the ground					
	1536	Header Center Height	J1939-74			16	Height of: center (or center of the) header, measured relative to the ground					
	1537	Reel Fore-Aft Position	J1939-74			8	A mechanical range of adjustment to position the reel along this axis. 0% to be toward the rear of the machine, 100% toward the front end.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1538	Reel Up-Down Position	J1939-74			8	A mechanical range of adjustment to position the reel along this axis. 0% to be toward the ground & 100% will be in the vertical upward direction					
	1539	Header Lateral Tilt Angle	J1939-74			8	The lateral tilt angle of the header (feederhouse) relative to the combine chassis. Negative angle is a CCW rotation from straight ahead. A Positive angle is CW from straight ahead					
	1540	Reel Speed Actuator Position	J1939-74			8	The position of the Reel speed actuator.					
	1541	Reel Speed	J1939-74			16	The rotational velocity of the Reel. The Reel is a device on the platform that pushes the crop onto the header.					
	1542	ECU Power Supply Voltage #2 (obsolete)	J1939				This SPN is obsolete. SPNs 3598 should be used instead.					
	1543	ECU Power Supply Voltage #3 (obsolete)	J1939				This SPN is obsolete. SPNs 3599 should be used instead.					
	1544	Hydro Handle Matrix Switch	J1939				Multi-function handle circuit					
	1545	Reserved for assignment										
	1546	HVAC Coolant Valve Position Sensor	J1939				Circuit and sensor associated with providing the HVAC coolant valve position parameter					
	1547	A/C Evaporator Temperature	J1939				Circuit and sensor associated with providing the HVAC coolant valve position parameter					
	1548	HVAC Duct Temperature	J1939				Circuit and sensor associated with providing the HVAC duct temperature parameter					
	1549	HVAC Water Valve Drive	J1939				Output circuit that drives this valve					
	1550	Reserved for assignment										
	1551	A/C Pressurizer Drive Circuit	J1939				Output circuit that drives this valve					
	1552	Operator Input device for Cab Climate Control	J1939				Circuit and sensor for measuring the HVAC temperature setpoint parameter					
	1553	HVAC Blower Motor Speed Adjustment	J1939				Circuit and sensor for measuring the HVAC blower motor speed adjustment parameter					
	1554	Clean Grain Elevator Speed	J1939-74			16	The speed of the clean grain elevator					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1555	Moisture Sensor Cell Frequency	J1939				Critical parameter of moisture sensor					
	1556	Datalog Memory Card	J1939				Removable memory pack					
	1557	Reserved for assignment										
	1558	Programming Error, Device Refused to Enter Programming Mode	J1939				Device to be programmed is reporting that it cannot be programmed					
	1559	Programming Error, Device Timed Out While Entering the Programming Mode	J1939				Tool timed out waiting for device to enter program mode					
	1560	Programming Error, Device Timed Out While Erasing	J1939				Tool timed out waiting for device to erase					
	1561	Programming Error, Device Timed Out While Programming	J1939				Tool timed out waiting for device to program					
	1562	Programming Error, Device did not Accept Program Line	J1939				Device to be programmed reporting that it cannot accept program block					
	1563	Incompatible Monitor/Controller	J1939				An incompatible device has been detected on the network					
	1564	CCD Data Link	J1939									
	1565	Armrest Status	J1939				Parameter associated with the armrest module status					
	1566	Armrest Rotary Inputs	J1939				Parameter associated with the armrest module rotary inputs					
	1567	Header Height Control Mode Selector Switches	J1939				Parameter associated with the header height control mode selector switches					
	1568	Engine Torque Curve Selection	J1939				The mechanism used to select different torque curves. This SPN would be used to indicate a problem has been encountered with the device that indicates the desired torque curve					
	1569	Engine Protection Torque Derate	J1939				Torque has been derated for protection of the engine					
	1570	Implement Disconnected	J1939				A previously connected implement is no longer connected					
	1571	Display Conflict	J1939				Multiple controllers contending for a display resource (region)					
	1572	Display Overload	J1939				Display not able to keep up with display commands					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1573	LED Display Data #1	J1939-71	65142	1	8	Informs display devices how to display the current vertical position.					
	1574	Laser Strike Vertical Deviation	J1939-71	65141	1-2	16	The calculated distance from the laser strike position to the current land leveling system reference point.					
	1575	Modify Leveling System Set Point	J1939-71	65140	1-2	16	Used to control and coordinate the set point for the leveling system.					
	1576	Mast Position	J1939-71	65139	1-2	16	Used to monitor the position of the sensor attached to the land leveling mast.					
	1577	Blade Duration and Direction	J1939-71	65138	1-2	16	Used to indicate the duration and direction that the land leveling system blade moves.					
	1578	Blade Control Mode	J1939-71	65138	3	8	Allows the user to select the type of blade control for the land leveling system.					
	1579	Laser Tracer Target Deviation	J1939-71	65137	1-2	16	The calculated distance for the laser target to the current laser tracer reference point.					
	1580	Laser Tracer Vertical Distance	J1939-71	65137	3-4	16	The elevation of the laser tracer sensor in a laser leveling system.					
	1581	Laser Tracer Horizontal Deviation	J1939-71	65137	5	8	The calculated percent deviation between the target distance and the center of the laser tracer.					
	1582	LED Display Data #2	J1939-71	65137	6	8	Informs display devices how to display the current position of the laser tracer.					
	1583	Laser Tracer Information	J1939-71	65137	7	8	Provides the status of the laser tracer to the operator.					
	1584	Service Component Identification	J1939-71	56832	2	8	Identification of component needing service.					
	1585	Powered Vehicle Weight	J1939-71	65136	1-2	16	Total mass imposed by the tires of the powered vehicle on the road surface. Does not include the trailer.					
	1586	Speed of forward vehicle	J1939-71	65135	1	8	Absolute velocity of the preceding vehicle situated within 250 m in the same lane and moving in the same direction.					
	1587	Distance to forward vehicle	J1939-71	65135	2	8	Distance to the preceding vehicle situated within 250 m in the same lane and moving in the same direction.					
	1588	Adaptive Cruise Control Set Speed	J1939-71	65135	3	8	Value of the desired (chosen) velocity of the adaptive cruise control system.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description				PID	MID	SID
	1589	Adaptive cruise control set distance mode	J1939-71	65135	4.4	3	Selected distance mode for adaptive cruise control.						
	1590	Adaptive Cruise Control Mode	J1939-71	65135	4.1	3	This parameter is used to indicate the current state, or mode, of operation by the Adaptive Cruise Control (ACC) device.						
	1591	Road curvature	J1939-71	65135	5-6	16	Estimated value of the current road curvature for use by the adaptive cruise control system. Positive values are used for left curves. Curvature is the inverse of the radius and is zero for straight roads.						
	1592	Front Axle, Left Wheel Speed	J1939-71	65134	1-2	16	High resolution measurement of the speed of the left wheel on the front axle.						
	1593	Front axle, right wheel speed	J1939-71	65134	3-4	16	High resolution measurement of the speed of the right wheel on the front axle.						
	1594	Rear axle, left wheel speed	J1939-71	65134	5-6	16	High resolution measurement of the speed of the left wheel on the rear axle.						
	1595	Rear axle, right wheel speed	J1939-71	65134	7-8	16	High resolution measurement of the speed of the right wheel on the rear axle.						
	1596	Security Entity Length	J1939-73	54272	1, 2, 5								
	1597	Data Security Parameter	J1939-73	54272	3								
	1598	Reserved for assignment											
	1599	Seed	J1939-73	55296	7-8								
	1600	Reserved for assignment											
	1601	Local minute offset	J1939-71	65254	7	8	Local offset in minutes from a reference time.						
	1602	Local hour offset	J1939-71	65254	8	8	Local offset in hours from a reference time.						
	1603	Adjust seconds	J1939-71	54528	1	8	Part of the parameter used to set the time.						
	1604	Adjust minutes	J1939-71	54528	2	8	Part of the parameter used to set the time.						
	1605	Adjust hours	J1939-71	54528	3	8	Part of the parameter used to set the time.						
	1606	Adjust month	J1939-71	54528	4	8	Part of a parameter used to set a calendar date.						
	1607	Adjust day	J1939-71	54528	5	8	Part of a parameter used to set a calendar date.						
	1608	Adjust year	J1939-71	54528	6	8	Part of a parameter used to set a calendar date.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1628	Reserved for Certification seed/key length	J1939-73									
	1629	Reserved for Certification signature	J1939-73									
	1630	Reserved for Certification public key	J1939-73									
	1631	Reserved for Certification vehicle identification number	J1939-73									
	1632	Engine Torque Limit Feature	J1939-71	65168	15.3	3	Torque limit rating described in the current record					
	1633	Cruise Control Pause Switch	J1939-71	65265	1.5	2	Switch signal which indicates the position of the Cruise Control Pause Switch used on Remote Cruise Control applications					
	1634	Calibration Verification Number	J1939-73	54016	1-4		Checksum of entire calibration, including code and data. Excludes RAM parameters, nonvolatile parameters that change during the life cycle of the module (hours of operation, freeze frame data, etc), or non emissions related parameters that may be changed					
	1635	Calibration Identification	J1939-73	54016	5-20							
	1636	Engine Intake Manifold 1 Air Temperature (High Resolution)	J1939-71	65129	1-2	16	Temperature of pre-combustion air found in intake manifold of engine air supply system. The higher resolution is required for control purposes.					
	1637	Engine Coolant Temperature (High Resolution)	J1939-71	65129	3-4	16	Temperature of liquid found in engine cooling system. The higher resolution is required for control purposes.					
	1638	Hydraulic Temperature	J1939-71	65128	1	8	Temperature of the hydraulic fluid.					
	1639	Fan Speed	J1939-71	65213	3-4	16	The speed of the fan associated with engine coolant system.					
	1640	Length/Number Requested	J1939-73	55552	1, 2.6							
	1641	Pointer Type	J1939-73	55552	2.5							
	1642	Command	J1939-73	55552	2.1							
	1643	Pointer Extension	J1939-73	55552	6							
	1644	Pointer	J1939-73	55552	3-5							
	1645	Key/User_Level	J1939-73	55552	7-8							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1646	Status (for DM 15)	J1939-73	55296	2.5							
	1647	EDCP Extension	J1939-73									
	1648	Error Indicator/EDC Parameter	J1939-73	55296	3-5							
	1649	Length/Number Allowed ¹	J1939-73	55296	1, 2.6							
	1649	Length/Number Allowed ¹	J1939-73	55296	6							
	1650	Number of Occurrences of Raw Binary Data	J1939-73	55040	1							
	1651	Raw Binary Data	J1939-73	55040	2							
	1652	Boot Load Data	J1939-73	54784	1-8							
	1653	Vehicle Limiting Speed Governor Enable Switch	J1939-71	57344	5.7	2	Switch signal which enables the Vehicle Limiting Speed Governor (VLSG) such that the vehicle speed may be either increased or decreased when the engine is off idle.					
	1654	Vehicle Limiting Speed Governor Increment Switch	J1939-71	57344	5.5	2	Switch signal which increases the Vehicle Limiting Speed Governor (VLSG).					
	1655	Vehicle Limiting Speed Governor Decrement Switch	J1939-71	57344	5.3	2	Switch signal which decreases the Vehicle Limiting Speed Governor (VLSG).					
	1656	Engine Automatic Start Enable Switch	J1939-71	57344	6.7	2	Switch signal which enables the idle management system to be enabled. When this system is enabled with the engine in an idle mode and safe operating conditions existing, then the engine may be started or stopped automatically.					
	1657	Engine Injector Needle Lift Sensor #1	J1939				The injector needle lift sensor used to detect the initial movement of the injector component which correlates the start of fuel injection #1					
	1658	Engine Injector Needle Lift Sensor #2	J1939				The injector needle lift sensor used to detect the initial movement of the injector component which correlates the start of fuel injection #2					
	1659	Engine Coolant System Thermostat	J1939				Electronic thermostat that will divert the coolant to the radiator at the preset temperature.					
	1660	Engine Automatic Start Alarm	J1939				An audio alarm which is activated just before the Engine Automatic Start Feature is engaged					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1661	Engine Automatic Start Lamp	J1939				A visible indication to the driver/operator that the Engine Automatic Start Feature is engaged						
	1662	Cab Interior Temperature Thermostat	J1939				Thermostat for driver/operator to set the desired cab temperature						
	1663	Engine Automatic Start Safety Interlock Circuit	J1939				Multiple inputs, e.g. hood and parking brake positions and neutral transmission switch, which determines whether Engine Automatic feature may be activated or not						
	1664	Engine Automatic Start Failed (Engine)	J1939				Conditions that prevent the engine from starting.e.g. Engine Automatic Start Safety Interlock Circuit						
	1665	Engine Turbocharger Oil Level Switch	J1939-71	65245	4.7	2	Switch signal which indicates the presence of oil at the turbocharger						
	1666	Automatic Gear Shifting Enable Switch	J1939-71	57344	6.5	2							
	1667	Retarder Requesting Brake Light	J1939-71	61440	4.3	2	Indicates that whether the retarder is requesting that the brake lights are illuminated.						
	1668	J1939 Network #4	J1939										
	1669	J1939 Network #5	J1939										
	1670	J1939 Network #6	J1939										
	1671	J1939 Network #7	J1939										
	1672	J1939 Network #8	J1939										
	1673	J1939 Network #9	J1939										
	1674	J1939 Network #10	J1939										
	1675	Engine Starter Mode	J1939-71	61444	7.1	4	There are several phases in a starting action and different reasons, why a start cannot take place.						
	1676	Auxiliary Heater Water Pump Status	J1939-71	65133	5.1	2	Parameter indicating whether the auxiliary heater water pump is running						
	1677	Auxiliary Heater Mode	J1939-71	65133	4.1	4	State of the auxiliary heater						
	1678	Cab Ventilation	J1939-71	65133	5.3	2	Indicates whether the cab is being ventilated or not.						
	1679	Engine Heating Zone	J1939-71	65133	5.5	2	Parameter indicating whether the engine zone is being heated						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1680	Cab Heating Zone	J1939-71	65133	5.7	2	Parameter indicating whether the cab zone is being heated.					
	1681	Battery Main Switch Hold State	J1939-71	65126	1.1	2	Indicating whether the battery main switch is held due to an external request or not					
	1682	Battery Main Switch Hold Request	J1939-71	57344	4.3	2	Request to hold the battery main switch					
	1683	Auxiliary Heater Mode Request	J1939-71	57344	7.1	4	Request to activate the auxiliary heater.					
	1684	Auxiliary Heater Coolant Pump Request	J1939-71	57344	4.1	2	Indicates whether to activate the auxiliary heater coolant water pump.					
	1685	Request Engine Zone Heating	J1939-71	57344	7.5	2	Request to activate engine zone heating					
	1686	Request Cab Zone Heating	J1939-71	57344	7.7	2	Request to activate cab zone heating					
	1687	Auxiliary Heater Output Coolant Temperature	J1939-71	65133	1	8	Temperature of the auxiliary heater output coolant (i.e. water in a water heater system.)					
	1688	Auxiliary Heater Input Air Temperature	J1939-71	65133	2	8	Temperature of the input air in an auxiliary heater system.					
	1689	Auxiliary Heater Output Power Percent	J1939-71	65133	3	8	Current auxiliary heater output power, relative to the auxiliary heater maximum output power.					
	1690	Auxiliary Heater Maximum Output Power	J1939-71	65127	1-2	16	The maximum output power of the auxiliary heater.					
	1691	Cab Interior Temperature Command	J1939-71	57344	2-3	16	Parameter used to command a certain cab interior temperature.					
	1692	Engine Desired Absolute Intake Manifold Pressure (Turbo Boost Limit)	J1939-71	65194	2-3	16	The desired absolute intake manifold pressure of the engine.					
	1693	Engine Turbocharger Wastegate Valve Position	J1939-71	65194	4	8	The position of the turbocharger wastegate valve (not the electronic wastegate control valve).					
	1694	Engine Gas Mass Flow Sensor Fueling Correction	J1939-71	65194	5	8	The amount of fuel the Gas Mass Flow Sensor is sensing should be added or subtracted compared to the maximum amount of fuel the control system allows the sensor to add or subtract.					
	1695	Engine Exhaust Gas Oxygen Sensor Fueling Correction	J1939-71	65193	7	8	The amount of fueling change required by the system based on the measured Exhaust Oxygen value					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1696	Engine Exhaust Gas Oxygen Sensor Closed Loop Operation	J1939-71	65193	8.7	2	Indicates whether the engine is using the Exhaust Gas Oxygen sensor to control the air/fuel ratio.					
	1697	CTI Wheel End Electrical Fault	J1939-71	65268	5.5	2	Indicates the status of electrical fault on CTI wheel interface					
	1698	CTI Tire Status	J1939-71	65268	5.3	2	Indicates the status of the tire					
	1699	CTI Wheel Sensor Status	J1939-71	65268	5.1	2	Indicates whether the wheel is being monitored by the CTI controller.					
	1700	Lane Departure Imminent, Left Side	J1939-71	61447	1.7	2	Indicates departure imminent on left side of lane.					
	1701	Lane Departure Imminent, Right Side	J1939-71	61447	1.5	2	Indicates departure imminent on right side of lane					
	1702	Lane Departure Indication Enable Status	J1939-71	65115	1.7	2	Indicates whether Lane departure indication is active					
	1703	Lane Tracking Speaker - Right Side	J1939				Lane tracking right side output diagnostic object					
	1704	Lane Tracking Speaker - Left Side	J1939				Lane tracking left side output diagnostic object					
	1705	Forward View Imager System	J1939				Forward Imager system condition					
	1706	SPN Conversion Method	J1939-73	65226	6.8							
	1709	Transmission Controller Power Relay	J1939									
	1710	Lane Tracking Status Left Side	J1939-71	65115	1.5	2	Indicates whether left side is tracking lane					
	1711	Lane Tracking Status Right Side	J1939-71	65115	1.3	2	Indicates whether right side is tracking lane.					
	1712	Engine Extended Range Requested Speed Control Range Upper Limit (Engine configuration)	J1939-71	65251	29-30	16	The maximum engine speed regardless of load that the engine will allow when operating in a speed control/limit mode, excluding any maximum momentary engine override speed, if supported.					
	1713	Hydraulic Oil Filter Restriction Switch	J1939-71	65128	2.1	2	This switch indicates whether hydraulic oil filter is clogged. This is not the transmission oil filter restriction switch, which is SPN 3359.					
	1714	Operator Seat Direction Switch	J1939-71	57344	4.5	2	Senses whether the operator seat is in the forward driving position.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1715	Drivers Demand Retarder - Percent Torque	J1939-71	61440	6	8	The Drivers demand retarder – percent torque is the maximum torque selected by the driver when one or more modes are selected by the driver					
	1716	Retarder Selection, non-engine	J1939-71	61440	7	8	The "Retarder Selection, non-engine" is the position of the driver's selector for retarders that are not part of the engine system, expressed as percent and determined by the ratio of current position to the maximum possible position.					
	1717	Actual Maximum Available Retarder - Percent Torque	J1939-71	61440	8	8	This is the maximum amount of torque that the retarder can immediately deliver.					
	1718	Damper Stiffness Request Front Axle	J1939-71	53760	4	8	Demand value for the shock absorber control at the front axle.					
	1719	Damper Stiffness Request Rear Axle	J1939-71	53760	5	8	Demand value for the shock absorber control at the rear axle.					
	1720	Damper Stiffness Request Lift / Tag Axle	J1939-71	53760	6	8	Demand value for the shock absorber control at the lift or tag axle					
	1721	Relative Level Front Axle Left	J1939-71	65113	1-2	16	Information of the height at the left side of the front axle referred to normal level 1					
	1722	Relative Level Front Axle Right	J1939-71	65113	3-4	16	Information of the height at the right side of the front axle referred to normal level 1					
	1723	Relative Level Rear Axle Right	J1939-71	65113	7-8	16	Information of the height at the left side of the rear axle referred to normal level 1					
	1724	Relative Level Rear Axle Left	J1939-71	65113	5-6	16	Information of the height at the left side of the rear axle referred to normal level 1					
	1725	Bellow Pressure Front Axle Left	J1939-71	65112	1-2	16	Information of the pressure of the air suspension bellow at the left side of the front axle					
	1726	Bellow Pressure Front Axle Right	J1939-71	65112	3-4	16	Information of the pressure of the air suspension bellow at the right side of the front axle					
	1727	Bellow Pressure Rear Axle Left	J1939-71	65112	5-6	16	Information of the pressure of the air suspension bellow at the left side of the rear axle					
	1728	Bellow Pressure Rear Axle Right	J1939-71	65112	7-8	16	Information of the pressure of the air suspension bellow at the right side of the rear axle					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1729	Damper Stiffness Front Axle	J1939-71	65111	1	8	Damper stiffness information of the shock absorber control at the front axle					
	1730	Damper Stiffness Rear Axle	J1939-71	65111	2	8	Damper stiffness information of the shock absorber control at the rear axle					
	1731	Damper Stiffness Lift / Tag Axle	J1939-71	65111	3	8	Damper stiffness information of the shock absorber control at the lift of tag axle					
	1732	Level Preset Front Axle Left	J1939-71	53504	1-2	16	Set value for nominal level 'preset level' at the left side of the front axle. This value is referred to 'Normal level 1'.					
	1733	Nominal Level Rear Axle	J1939-71	65114	1.5	4	Signal which indicates the nominal (desired) height of the rear axle to be controlled by the suspension system.					
	1734	Nominal Level Front Axle	J1939-71	65114	1.1	4	Signal which indicates the nominal (desired) height of the front axle to be controlled by the suspension system.					
	1735	Level Preset Rear Axle Right	J1939-71	53504	7-8	16	Set value for nominal level 'preset level' at the right side of the rear axle. This value is referred to 'Normal level 1'.					
	1736	Above Nominal Level Rear Axle	J1939-71	65114	2.7	2	Signal which indicates whether the actual height of the rear axle is above the nominal (desired) level of the rear axle.					
	1737	Above Nominal Level Front Axle	J1939-71	65114	2.5	2	Signal which indicates whether the actual height of the front axle is above the nominal (desired) level of the front axle.					
	1738	Below Nominal Level Front Axle	J1939-71	65114	2.1	2	Signal which indicates whether the actual height of the front axle is below the nominal (desired) level for the front axle.					
	1739	Lifting Control Mode Front Axle	J1939-71	65114	3.5	2	Signal which indicates the actual lifting level change at the front axle					
	1740	Lowering Control Mode Front Axle	J1939-71	65114	3.1	2	Signal which indicates the actual lowering level change at the front axle					
	1741	Level Control Mode	J1939-71	65114	4.5	4	Signal which indicates the actual control mode of the air suspension system					
	1742	Kneeling Information	J1939-71	65114	4.1	4	Signal which indicates the actual level change in case of kneeling function					
	1743	Lift Axle 1 Position	J1939-71	65114	5.7	2	Signal which indicates the position / load condition of lift axle / tag axle #1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1744	Door Release	J1939-71	65114	5.5	2	Signal which indicates that the doors may be opened.					
	1745	Vehicle Motion Inhibit	J1939-71	65114	5.3	2	Signal which indicates whether vehicle motion is inhibited.					
	1746	Security Device	J1939-71	65114	5.1	2	The signal which indicates the status of the security device. An example of a security device is a curbstone feeler installed beneath the doors of a bus.					
	1747	Kneeling Control Mode Request	J1939-71	53760	1.7	2	Command signal to select the kneeling functionality					
	1748	Kneeling Request Right Side	J1939-71	53760	1.5	2	Command signal to activate the kneeling functionality on the right side of the vehicle					
	1749	Kneeling Request Left Side	J1939-71	53760	1.3	2	Command signal to activate the kneeling functionality on the left side of the vehicle					
	1750	Nominal Level Request Rear Axle	J1939-71	53760	2.5	4	Command signal to activate a level of the rear axle programmed and/or memorized in the ECU					
	1751	Nominal Level Request Front Axle	J1939-71	53760	2.1	4	Command signal to activate a level of the front axle programmed and/or memorized in the ECU					
	1752	Lift Axle 1 Position Command	J1939-71	53760	3.5	2	Signal to command the position/load condition of lift/tag axle #1.					
	1753	Level Control Mode Request	J1939-71	53760	3.1	4	Command signal to activate a level control mode					
	1754	Below Nominal Level Rear Axle	J1939-71	65114	2.3	2	Signal which indicates whether the actual height of the rear axle is below the nominal (desired) level for the rear axle.					
	1755	Lowering Control Mode Rear Axle	J1939-71	65114	3.3	2	Signal which indicates the actual lowering level change at the rear axle					
	1756	Lifting Control Mode Rear Axle	J1939-71	65114	3.7	2	Signal which indicates the actual lifting level change at the rear axle					
	1757	Level Preset Front Axle Right	J1939-71	53504	3-4	16	Set value for nominal level 'preset level' at the right side of the front axle. This value is referred to 'Normal level 1'.					
	1758	Level Preset Rear Axle Left	J1939-71	53504	5-6	16	Set value for nominal level 'preset level' at the left side of the rear axle. This value is referred to 'Normal level 1'.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1759	Blade Height Set Point - High Resolution	J1939-71	65140	3-6	32	High resolution for the laser guided blade set point. The high resolution required for more accurate control and 'accurate' unit conversions.					
	1760	Gross Combination Vehicle Weight	J1939-71	65136	3-4	16	The total weight of the truck and all attached trailers.					
	1761	Catalyst Tank Level	J1939-71	65110	1	8	A special catalyst uses chemical substance to reach legal requirement for NOX emissions. Currently indicates the level of the chemical substance within the catalyst tank. This substance is used to reduce NOX emissions.					
	1762	Hydraulic Pressure	J1939-71	61448	1-2	16	Hydraulic pressure measured at the output of the hydraulic pump.					
	1763	Engine Hydraulic Pressure Governor Mode Indicator	J1939-71	61448	3.1	2	Mode for governor operation is hydraulic pressure control					
	1764	Engine Hydraulic Pressure Governor Switch	J1939-71	61448	3.3	2	Switch that sets the mode of hydraulic governor					
	1765	Engine Requested Fuel Valve 1 Position	J1939-71	65153	7	8	The requested position of the fuel valve 1 that is metering the gaseous fuel flow.					
	1766	Engine Requested Fuel Valve 2 Position	J1939-71	65153	8	8	The requested position of the fuel valve 2 that is metering the gaseous fuel flow as requested by the Engine Control Unit.					
	1767	Specific Heat Ratio	J1939-71	65109	1-2	16	The specific heat ratio of the fuel.					
	1768	Engine Low Limit Threshold for Maximum RPM from Engine	J1939-71	65108	1	8	Minimum allowable value for maximum continuous RPM from engine					
	1769	Engine High Limit Threshold for Minimum Continuous Engine RPM	J1939-71	65108	2	8	Maximum allowable value for minimum continuous RPM from engine					
	1770	Engine Low Limit Threshold for Maximum Torque from Engine	J1939-71	65108	3	8	Minimum allowable value for maximum continuous torque from engine					
	1771	Engine High Limit Threshold for Minimum Continuous Torque from Engine	J1939-71	65108	4	8	Maximum allowable value for minimum continuous torque from engine					
	1772	Engine Maximum Continuous RPM	J1939-71	65108	5	8	Applied limit for maximum continuous engine RPM					
	1773	Engine Minimum Continuous RPM	J1939-71	65108	6	8	Applied limit for minimum continuous engine RPM					
	1774	Engine Maximum Continuous Torque	J1939-71	65108	7	8	Applied limit for maximum continuous engine torque.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1775	Engine Minimum Continuous Torque	J1939-71	65108	8	8	Applied limit for minimum continuous engine torque					
	1776	Low Limit Threshold for Maximum RPM from Retarder	J1939-71	65107	1	8	Minimum allowable value for maximum continuous retarder speed					
	1777	High Limit Threshold for Minimum Continuous RPM from Retarder	J1939-71	65107	2	8	Maximum allowable value for minimum continuous retarder speed					
	1778	Low Limit Threshold for Maximum Torque from Retarder	J1939-71	65107	3	8	Minimum allowable value for maximum continuous retarder torque.					
	1779	High Limit Threshold for Minimum Continuous Torque from Retarder	J1939-71	65107	4	8	Maximum allowable value for minimum continuous retarder torque.					
	1780	Maximum Continuous Retarder Speed	J1939-71	65107	5	8	Applied limit for maximum continuous retarder RPM					
	1781	Minimum Continuous Retarder Speed	J1939-71	65107	6	8	Applied limit for minimum continuous retarder RPM					
	1782	Maximum Continuous Retarder Torque	J1939-71	65107	7	8	Applied limit for maximum continuous retarder torque.					
	1783	Minimum Continuous Retarder Torque	J1939-71	65107	8	8	Applied limit for minimum continuous retarder torque					
	1784	Engine Speed Limit Request - Minimum Continuous	J1939-71	52992	1	8	Requested minimum continuous engine speed					
	1785	Engine Speed Limit Request - Maximum Continuous	J1939-71	52992	2	8	Requested maximum continuous engine speed					
	1786	Engine Torque Limit Request - Minimum Continuous	J1939-71	52992	3	8	Requested minimum continuous engine torque (operating range: 0 to 125%)					
	1787	Engine Torque Limit Request - Maximum Continuous	J1939-71	52992	4	8	Requested maximum continuous engine torque (operating range: 0 to 125%)					
	1788	Minimum Continuous Retarder Speed Limit Request	J1939-71	52992	5	8	Requested minimum continuous retarder speed					
	1789	Maximum Continuous Retarder Speed Limit Request	J1939-71	52992	6	8	Requested maximum continuous retarder speed					
	1790	Minimum Continuous Retarder Torque Limit Request	J1939-71	52992	7	8	Requested minimum continuous retarder torque (operating range: -125 to 0%)					
	1791	Maximum Continuous Retarder Torque Limit Request	J1939-71	52992	8	8	Requested maximum continuous retarder torque (operating range: -125 to 0%)					
	1792	Tractor-Mounted Trailer ABS Warning Signal	J1939-71	61441	8.7	2	This parameter commands the tractor-mounted trailer ABS optical warning signal.				137 - 23	139

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1793	ATC/ASR Information Signal	J1939-71	61441	6.7	2	This parameter commands the ATC/ASR driver information signal, for example a dash lamp.					
	1794	Engine Moment of Inertia	J1939-71	65251	31-32	16	Moment of inertia for the engine, including items driven full-time by the engine such as fuel, oil and cooling pumps.					
	1795	Alternator Current (High Range/Resolution)	J1939-71	65106	1-2	16	This parameter indicates the amount of electrical current output from the alternator of the main vehicle.					
	1796	ACC Distance Alert Signal	J1939-71	65135	7.5	2	Signal to indicate to the operator that the ACC system is not able to maintain the distance to the target.					
	1797	ACC System Shutoff Warning	J1939-71	65135	7.3	2	Signal to warn the driver of system deactivation due to non-driver actions. Example: Attempting to control vehicle speed below or above limits of ACC. This signal may be used to activate warning sounds or indicators.					
	1798	ACC Target Detected	J1939-71	65135	7.1	2	Signal to indicate to the driver that the ACC system has detected a target.					
	1799	Requested ACC Distance Mode	J1939-71	65105	1.6	3	The Requested Distance Control Mode to the ACC system from the operators interface.					
	1800	Battery 1 Temperature	J1939-71	65104	1	8	Temperature of the battery 1.					
	1801	Battery 2 Temperature	J1939-71	65104	2	8	Temperature of the battery 2.					
	1802	Engine Intake Manifold 5 Temperature	J1939-71	65189	4	8	Temperature of pre-combustion air found in intake manifold number 5 of engine air supply system.					
	1803	Engine Intake Manifold 6 Temperature	J1939-71	65189	5	8	Temperature of pre-combustion air found in intake manifold number 6 of engine air supply system.					
	1804	Engine Start Enable Device 2	J1939-71	64966	1.3	2	Devices that assist an engine in starting, e.g. intake heaters, ether, or an alternate/secondary starting aid.					
	1805	LED Display Mode Control	J1939-71	65142	2.1	4	This parameter informs the system what the selected Display mode will be.					
	1806	LED Display Deadband Control	J1939-71	65142	2.5	4	This parameter informs the system what the selected Display deadband will be.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1807	Steering Wheel Angle	J1939-71	61449	1-2	16	The main operator's steering wheel angle (on the steering column, not the actual wheel angle).					
	1808	Yaw Rate	J1939-71	61449	4-5	16	Indicates the rotation about the vertical axis.					
	1809	Lateral Acceleration	J1939-71	61449	6-7	16	Indicates a lateral acceleration of the vehicle.					
	1810	Longitudinal Acceleration	J1939-71	61449	8	8	Indicates the longitudinal acceleration of the vehicle.					
	1811	Steering Wheel Turn Counter	J1939-71	61449	3.1	6	Indicates number of steering wheel turns, absolute position or relative position at ignition on. Positive values indicate left turns.					
	1812	Steering Wheel Angle Sensor Type	J1939-71	61449	3.7	2	Indicates whether the steering wheel angle sensor is capable of absolute measuring of the number of steering wheel turns or not (relative measuring to position at ignition on).					
	1813	VDC Information Signal	J1939-71	65103	1.1	2	This parameter commands the VDC information signal, for example a dash lamp.					
	1814	VDC Fully Operational	J1939-71	65103	1.3	2	Signal that indicates whether VDC is fully operational or whether its functionality is reduced by a permanent or temporary (e.g. low voltage) defect					
	1815	VDC brake light request	J1939-71	65103	1.5	2	Indicates whether VDC requests to turn the vehicle brake lights on					
	1816	ROP Engine Control active	J1939-71	65103	2.1	2	State Signal which indicates that the Roll Over Prevention (ROP) has commanded engine control to be active.					
	1817	YC Engine Control active	J1939-71	65103	2.5	2	State Signal which indicates that the Yaw Control (YC) has commanded engine control to be active.					
	1818	ROP Brake Control active	J1939-71	65103	2.3	2	State signal which indicates that Roll over Prevention (ROP) has activated brake control.					
	1819	YC Brake Control active	J1939-71	65103	2.7	2	State signal which indicates that Yaw Control (YC) has activated brake control.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1820	Ramp / Wheel Chair Lift Position	J1939-71	65102	1.5	2	Signal which indicates the actual position of the ramp / wheel chair lift					
	1821	Position of doors	J1939-71	65102	1.1	4	Signal which indicates the actual position of the doors					
	1822	Lift Axle 2 Position	J1939-71	65114	6.7	2	Signal which indicates the position / load condition of lift axle / tag axle #2.					
	1823	Rear Axle in Bumper Range	J1939-71	65114	6.3	2	Signal which indicates that the vehicle height at the rear axle is within the bumper range					
	1824	Front Axle in Bumper Range	J1939-71	65114	6.1	2	Signal which indicates that the vehicle height at the front axle is within the bumper range.					
	1825	Suspension Remote control 2	J1939-71	65114	7.3	2	Signal which indicates that the suspension system is controlled by remote control #2. Remote control is an external unit to operate the suspension system.					
	1826	Suspension Remote Control 1	J1939-71	65114	7.1	2	Signal which indicates that the suspension system is controlled by remote control #1. Remote control is an external unit to operate the suspension system.					
	1827	Suspension Control Refusal Information	J1939-71	65114	8.1	4	Signal which indicates that the air suspension control cannot perform a request due to the operating conditions. It also provides a reason for the refusal.					
	1828	Lift Axle 2 Position Command	J1939-71	53760	3.7	2	Signal to command the position / load condition of lift / tag axle #2.					
	1829	Kneeling Command - Rear Axle	J1939-71	53760	7.3	2	Command signal to activate the kneeling functionality at the rear axle of the vehicle					
	1830	Kneeling Command - Front Axle	J1939-71	53760	7.1	2	Command signal to activate the kneeling functionality at the front axle of the vehicle					
	1831	Electronic Shock Absorber Control Mode - Lift/Tag Axle	J1939-71	65111	4.5	2	Signal which indicates the current mode of operation of the electronic shock absorber control at the lift/tag axle					
	1832	Electronic Shock Absorber Control Mode - Rear Axle	J1939-71	65111	4.3	2	Signal which indicates the current mode of operation of the electronic shock absorber control at the rear axle					
	1833	Electronic Shock Absorber Control Mode - Front Axle	J1939-71	65111	4.1	2	Signal which indicates the current mode of operation of the electronic shock absorber control at the front axle					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1834	Engine Total Average Fuel Rate	J1939-71	65101	1-2	16	Average fuel rate, equal to total fuel used divided by total engine hours, over the life of the engine					
	1835	Engine Total Average Fuel Economy	J1939-71	65101	3-4	16	Average fuel economy, equal to total vehicle distance divided by total fuel used, over the life of the engine					
	1836	Trailer ABS Status	J1939-71	61441	8.5	2	State signal which indicates that ABS in the trailer is actively controlling the brakes.	209				
	1837	Convoy Driving Lamp Select	J1939-71	65100	1.7	2	Black Out Convoy Driving Lamp Selection					
	1838	Convoy Lamp Select	J1939-71	65100	1.5	2	Black Out Convoy Lamp Selection					
	1839	Front Black Out Marker Lamp Select	J1939-71	65100	1.3	2	Front Black Out Marker Lamp Selection					
	1840	Rear Black Out Marker Select	J1939-71	65100	1.1	2	Rear Black Out Marker Selection					
	1841	Black Out Brake/Stop Lamp Select	J1939-71	65100	3.7	2	Black Out Brake/Stop Lamp Selection					
	1842	Black Out Work Lamp Select	J1939-71	65100	4.7	2	Black Out Work Lamp Selection					
	1843	Night Vision Illuminator Select	J1939-71	65100	4.1	2	Night Vision Illuminator Selection					
	1844	Operators Black Out Intensity Selection	J1939-71	65100	8	8	Operators Selection of lamp intensity in black out mode					
	1845	Transmission Torque Limit	J1939-71	65099	1-2	16	Parameter provided to the engine from the transmission as a torque limit to be invoked by the engine in the event that J1939 communication with the transmission is lost.					
	1846	Engine Default Torque Limit	J1939-71	65251	33-34	16	This parameter is broadcast by the engine to verify reception of the Transmission Torque Limit parameter (SPN 1845).					
	1849	Transmission Requested Range Display Flash State	J1939-71	65098	1.7	2	State signal indicating a transmission request for the display of the Transmission Requested Range parameter (SPN 162) to flash or not to flash.					
	1850	Transmission Requested Range Display Blank State	J1939-71	65098	1.5	2	State signal indicating a transmission request for the display of the Transmission Requested Range parameter (SPN162) to be blanked or not blanked.					
	1851	Transmission Shift Inhibit Indicator	J1939-71	65098	2.7	2	State signal indicating a transmission request for the Shift Inhibit Indicator to be active or inactive.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1852	Transmission Mode 1	J1939-71	256	6.1	2	Indicates whether transmission mode 1 is enabled.					
	1853	Transmission Mode 2	J1939-71	256	6.3	2	Indicates whether transmission mode 2 is enabled.					
	1854	Transmission Mode 3	J1939-71	256	6.5	2	Indicates whether transmission mode 3 is enabled.					
	1855	Transmission Mode 4	J1939-71	256	6.7	2	Indicates whether transmission mode 4 is enabled.					
	1856	Seat Belt Switch	J1939-71	57344	4.7	2	State of switch used to determine if Seat Belt is buckled					
	1857	Winch Oil Pressure Switch	J1939-71	65128	2.3	2	State of switch used to determine if Winch Oil Pressure is above desired minimum					
	1858	Intermittent Wiper Control	J1939				Output driver for an intermittent windshield wiper motor					
	1859	Ground Based Implement Speed	ISO 11783-7	65097	1-2	16	Actual ground speed of a machine, measured by a sensor such as RADAR.					
	1860	Ground Based Implement Distance	ISO 11783-7	65097	3-6	32	Actual distance travelled by a machine based on measurements from a sensor such as RADAR					
	1861	Ground Based Direction	ISO 11783-7	65097	8.1	2	A measured signal indicating either forward or reverse as the direction of travel. When speed is zero, indicate the last travel direction until a different direction is detected.					
	1862	Wheel Based Speed	ISO 11783-7	65096	1-2	16	A value of the speed of a machine as calculated from the measured wheel or tail shaft speed.					
	1863	Wheel Based Distance	ISO 11783-7	65096	3-6	32	The distance travelled by a machine as calculated from wheel or tail shaft speed.					
	1864	Wheel Based Direction	ISO 11783-7	65096	8.1	2	A measured signal indicating either forward or reverse as the direction of travel.					
	1865	Key Switch NOT OFF	ISO 11783-7	65096	8.3	2	Indicates the Key Switch of the tractor or power unit is NOT in the Off position.					
	1866	Maximum Time of Tractor Power	ISO 11783-7	65096	7	8	The maximum time of remaining tractor or power unit supplied electrical power at the current load.					
	1867	Maintain ECU Power	ISO 11783-7	65095	1.7	2	Request to the Tractor ECU to maintain ECU_PWR power for the next 2 seconds.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1868	Maintain Acuator Power	ISO 11783-7	65095	1.5	2	Request to the Tractor ECU to maintain PWR power for the next 2 seconds.					
	1869	Implement Transport State	ISO 11783-7	65095	2.7	2	Indicates the transport state of an implement connected to a tractor or power unit.					
	1870	Implement Park State	ISO 11783-7	65095	2.5	2	Indicates the state of an implement where it may be disconnected from a tractor or power unit.					
	1871	Implement Work State	ISO 11783-7	65095	2.3	2	Indicates that an implement is connected to a tractor or power unit and is ready for work					
	1872	Front Hitch Position	ISO 11783-7	65094	1	8	The measured position of the front three-point-hitch.					
	1873	Rear Hitch Position	ISO 11783-7	65093	1	8	The measured position of the rear three-point-hitch.					
	1874	Front Hitch Position Command	ISO 11783-7	65090	1	8	Command to allow the position of the front three-point-hitch to be set.					
	1875	Rear Hitch Position Command	ISO 11783-7	65090	2	8	Command to allow the position of the rear three-point-hitch to be set.					
	1876	Front Hitch In-work Indication	ISO 11783-7	65094	2.7	2	A measured signal indicating that the front hitch is positioned below (in-work) or above (out-of-work) an adjustable switching threshold.					
	1877	Rear Hitch In-work Indication	ISO 11783-7	65093	2.7	2	A measured signal indicating that the rear hitch is positioned below (in-work) or above (out-of-work) an adjustable switching threshold.					
	1878	Front Draft	ISO 11783-7	65094	4-5	16	The apparent horizontal force applied to the front hitch by an implement.					
	1879	Rear Draft	ISO 11783-7	65093	4-5	16	The apparent horizontal force applied to the rear hitch by an implement.					
	1880	Front Nominal Lower Link Force	ISO 11783-7	65094	3	8	This measurement provides an indication of draft at the lower links of the front three point hitch.					
	1881	Rear Nominal Lower Link Force	ISO 11783-7	65093	3	8	This measurement provides an indication of draft at the lower links of the front three point hitch.					
	1882	Front PTO output shaft speed	ISO 11783-7	65092	1-2	16	The measured rotational speed of the front power take off (PTO) output shaft.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1883	Rear PTO output shaft speed	ISO 11783-7	65091	1-2	16	The measured rotational speed of the rear power take off (PTO) output shaft.					
	1884	Front PTO Output Shaft Speed Set Point	ISO 11783-7	65092	3-4	16	The measured value of the set point of the rotational speed of the front power take off (PTO) output shaft.					
	1885	Rear PTO Output Shaft Speed Set Point	ISO 11783-7	65091	3-4	16	The measured value of the set point of the rotational speed of the rear power take off (PTO) output shaft.					
	1886	Front PTO Output Shaft Speed Set Point Command	ISO 11783-7	65090	3-4	16	The command to set the rotational speed of the front power take off (PTO) output shaft.					
	1887	Rear PTO Output Shaft Speed Set Point Command	ISO 11783-7	65090	5-6	16	The command to set the rotational speed of the rear power take off (PTO) output shaft.					
	1888	Front Power Take Off Engagement	ISO 11783-7	65092	5.7	2	A measured signal indicating that the front power take off is engaged or disengaged.					
	1889	Front Power Take Off Mode	ISO 11783-7	65092	5.5	2	A measured signal indicating that the front power take off mode is either 540 or 1000 rpm.					
	1890	Rear Power Take Off Mode	ISO 11783-7	65091	5.5	2	A measured signal indicating that the rear power take off mode is either 540 or 1000 rpm.					
	1891	Front Power Take Off Economy Mode	ISO 11783-7	65092	5.3	2	A measured signal indicating that the front power take off economy mode is engaged or disengaged.					
	1892	Rear Power Take Off Economy Mode	ISO 11783-7	65091	5.3	2	A measured signal indicating that the rear power take off economy mode is engaged or disengaged.					
	1893	Front Power Take Off Engagement Command	ISO 11783-7	65090	7.7	2	The command to engage or disengage the front power take off .					
	1894	Rear Power Take Off Engagement Command	ISO 11783-7	65090	7.5	2	The command to engage or disengage the rear power take off .					
	1895	Front Power Take Off Mode Command	ISO 11783-7	65090	8.7	2	The command to select the mode of the front power take off .					
	1896	Rear Power Take Off Mode Command	ISO 11783-7	65090	8.5	2	The command to select the mode of the rear power take off .					
	1897	Front Power Take Off Economy Mode Command	ISO 11783-7	65090	8.3	2	The command to engage or disengage the front power take off's economy mode.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1898	Rear Power Take Off Economy Mode Command	ISO 11783-7	65090	8.1	2	The command to engage or disengage the rear power take off's economy mode.					
	1899	Aux Valve 0 Extend Port Measured Flow	ISO 11783-7	65056	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1900	Aux Valve 0 Retract Port Measured Flow	ISO 11783-7	65056	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1901	Aux Valve 0 Extend Port Estimated Flow	ISO 11783-7	65040	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1902	Aux Valve 0 Retract Port Estimated Flow	ISO 11783-7	65040	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1903	Aux Valve 0 State	ISO 11783-7	65040	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1904	Aux Valve 0 Extend Port Pressure	ISO 11783-7	65056	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1905	Aux Valve 0 Retract Port Pressure	ISO 11783-7	65056	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1906	Aux Valve 0 Return Port Pressure	ISO 11783-7	65056	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1907	Aux Valve 0 Port Flow Command	ISO 11783-7	65072	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1908	Aux Valve 0 State command	ISO 11783-7	65072	3.1	4	Command for setting the auxiliary valve state.					
	1909	Aux Valve 0 Fail Safe Mode Command	ISO 11783-7	65072	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1910	Aux Valve 0 Fail Safe Mode	ISO 11783-7	65040	3.7	2	The measured state the fail safe mode of an auxiliary valve.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1911	Aux Valve 1 Extend Port Measured Flow	ISO 11783-7	65057	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1912	Aux Valve 1 Retract Port Measured Flow	ISO 11783-7	65057	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1913	Aux Valve 1 Extend Port Estimated Flow	ISO 11783-7	65041	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1914	Aux Valve 1 Retract Port Estimated Flow	ISO 11783-7	65041	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1915	Aux Valve 1 State	ISO 11783-7	65041	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1916	Aux Valve 1 Extend Port Pressure	ISO 11783-7	65057	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1917	Aux Valve 1 Retract Port Pressure	ISO 11783-7	65057	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1918	Aux Valve 1 Return Port Pressure	ISO 11783-7	65057	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1919	Aux Valve 1 Port Flow Command	ISO 11783-7	65073	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1920	Aux Valve 1 State Command	ISO 11783-7	65073	3.1	4	Command for setting the auxiliary valve state.					
	1921	Aux Valve 1 Fail Safe Mode Command	ISO 11783-7	65073	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1922	Aux Valve 1 Fail Safe Mode	ISO 11783-7	65041	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1923	Aux Valve 2 Extend Port Measured Flow	ISO 11783-7	65058	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1924	Aux Valve 2 Retract Port Measured Flow	ISO 11783-7	65058	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1925	Aux Valve 2 Extend Port Estimated Flow	ISO 11783-7	65042	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1926	Aux Valve 2 Retract Port Estimated Flow	ISO 11783-7	65042	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1927	Aux Valve 2 State	ISO 11783-7	65042	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1928	Aux Valve 2 Extend Port Pressure	ISO 11783-7	65058	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1929	Aux Valve 2 Retract Port Pressure	ISO 11783-7	65058	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1930	Aux Valve 2 Return Port Pressure	ISO 11783-7	65058	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1931	Aux Valve 2 Port Flow Command	ISO 11783-7	65074	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1932	Aux Valve 2 State Command	ISO 11783-7	65074	3.1	4	Command for setting the auxiliary valve state.					
	1933	Aux Valve 2 Fail Safe Mode Command	ISO 11783-7	65074	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1934	Aux Valve 2 Fail Safe Mode	ISO 11783-7	65042	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1935	Aux Valve 3 Extend Port Measured Flow	ISO 11783-7	65059	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1936	Aux Valve 3 Retract Port Measured Flow	ISO 11783-7	65059	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1937	Aux Valve 3 Extend Port Estimated Flow	ISO 11783-7	65043	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1938	Aux Valve 3 Retract Port Estimated Flow	ISO 11783-7	65043	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1939	Aux Valve 3 State	ISO 11783-7	65043	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1940	Aux Valve 3 Extend Port Pressure	ISO 11783-7	65059	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1941	Aux Valve 3 Retract Port Pressure	ISO 11783-7	65059	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1942	Aux Valve 3 Return Port Pressure	ISO 11783-7	65059	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1943	Aux Valve 3 Port Flow Command	ISO 11783-7	65075	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1944	Aux Valve 3 State Command	ISO 11783-7	65075	3.1	4	Command for setting the auxiliary valve state.					
	1945	Aux Valve 3 Fail Safe Mode Command	ISO 11783-7	65075	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1946	Aux Valve 3 Fail Safe Mode	ISO 11783-7	65043	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1947	Aux Valve 4 Extend Port Measured Flow	ISO 11783-7	65060	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1948	Aux Valve 4 Retract Port Measured Flow	ISO 11783-7	65060	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1949	Aux Valve 4 Extend Port Estimated Flow	ISO 11783-7	65044	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1950	Aux Valve 4 Retract Port Estimated Flow	ISO 11783-7	65044	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1951	Aux Valve 4 State	ISO 11783-7	65044	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1952	Aux Valve 4 Extend Port Pressure	ISO 11783-7	65060	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1953	Aux Valve 4 Retract Port Pressure	ISO 11783-7	65060	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1954	Aux Valve 4 Return Port Pressure	ISO 11783-7	65060	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1955	Aux Valve 4 Port Flow Command	ISO 11783-7	65076	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1956	Aux Valve 4 State Command	ISO 11783-7	65076	3.1	4	Command for setting the auxiliary valve state.					
	1957	Aux Valve 4 Fail Safe Mode Command	ISO 11783-7	65076	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1958	Aux Valve 4 Fail Safe Mode	ISO 11783-7	65044	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1959	Aux Valve 5 Extend Port Measured Flow	ISO 11783-7	65061	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1960	Aux Valve 5 Retract Port Measured Flow	ISO 11783-7	65061	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1961	Aux Valve 5 Extend Port Estimated Flow	ISO 11783-7	65045	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1962	Aux Valve 5 Retract Port Estimated Flow	ISO 11783-7	65045	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	1963	Aux Valve 5 State	ISO 11783-7	65045	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1964	Aux Valve 5 Extend Port Pressure	ISO 11783-7	65061	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1965	Aux Valve 5 Retract Port Pressure	ISO 11783-7	65061	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1966	Aux Valve 5 Return Port Pressure	ISO 11783-7	65061	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1967	Aux Valve 5 Port Flow Command	ISO 11783-7	65077	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1968	Aux Valve 5 State Command	ISO 11783-7	65077	3.1	4	Command for setting the auxiliary valve state.					
	1969	Aux Valve 5 Fail Safe Mode Command	ISO 11783-7	65077	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1970	Aux Valve 5 Fail Safe Mode	ISO 11783-7	65045	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1971	Aux Valve 6 Extend Port Measured Flow	ISO 11783-7	65062	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1972	Aux Valve 6 Retract Port Measured Flow	ISO 11783-7	65062	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1973	Aux Valve 6 Extend Port Estimated Flow	ISO 11783-7	65046	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1974	Aux Valve 6 Retract Port Estimated Flow	ISO 11783-7	65046	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1975	Aux Valve 6 State	ISO 11783-7	65046	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	1976	Aux Valve 6 Extend Port Pressure	ISO 11783-7	65062	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	1977	Aux Valve 6 Retract Port Pressure	ISO 11783-7	65062	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	1978	Aux Valve 6 Return Port Pressure	ISO 11783-7	65062	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	1979	Aux Valve 6 Port Flow Command	ISO 11783-7	65078	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1980	Aux Valve 6 State Command	ISO 11783-7	65078	3.1	4	Command for setting the auxiliary valve state.					
	1981	Aux Valve 6 Fail Safe Mode Command	ISO 11783-7	65078	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	1982	Aux Valve 6 Fail Safe Mode	ISO 11783-7	65046	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	1983	Aux Valve 7 Extend Port Measured Flow	ISO 11783-7	65063	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1984	Aux Valve 7 Retract Port Measured Flow	ISO 11783-7	65063	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	1985	Aux Valve 7 Extend Port Estimated Flow	ISO 11783-7	65047	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1986	Aux Valve 7 Retract Port Estimated Flow	ISO 11783-7	65047	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	1987	Aux Valve 7 State	ISO 11783-7	65047	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	1988	Aux Valve 7 Extend Port Pressure	ISO 11783-7	65063	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	1989	Aux Valve 7 Retract Port Pressure	ISO 11783-7	65063	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.						
	1990	Aux Valve 7 Return Port Pressure	ISO 11783-7	65063	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.						
	1991	Aux Valve 7 Port Flow Command	ISO 11783-7	65079	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	1992	Aux Valve 7 State command	ISO 11783-7	65079	3.1	4	Command for setting the auxiliary valve state.						
	1993	Aux Valve 7 Fail Safe Mode Command	ISO 11783-7	65079	3.7	2	Command for setting the fail safe mode of an auxiliary valve.						
	1994	Aux Valve 7 Fail Safe Mode	ISO 11783-7	65047	3.7	2	The measured state the fail safe mode of an auxiliary valve.						
	1995	Aux Valve 8 Extend Port Measured Flow	ISO 11783-7	65064	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	1996	Aux Valve 8 Retract Port Measured Flow	ISO 11783-7	65064	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	1997	Aux Valve 8 Extend Port Estimated Flow	ISO 11783-7	65048	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	1998	Aux Valve 8 Retract Port Estimated Flow	ISO 11783-7	65048	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	1999	Aux Valve 8 State	ISO 11783-7	65048	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.						
	2000	Source Address 0	J1939-21			8							
	2001	Source Address 1	J1939-21			8							
	2002	Source Address 2	J1939-21			8							
	2003	Source Address 3	J1939-21			8							
	2004	Source Address 4	J1939-21			8							

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2005	Source Address 5	J1939-21			8							
	2006	Source Address 6	J1939-21			8							
	2007	Source Address 7	J1939-21			8							
	2008	Source Address 8	J1939-21			8							
	2009	Source Address 9	J1939-21			8							
	2010	Source Address 10	J1939-21			8							
	2011	Source Address 11	J1939-21			8							
	2012	Source Address 12	J1939-21			8							
	2013	Source Address 13	J1939-21			8							
	2014	Source Address 14	J1939-21			8							
	2015	Source Address 15	J1939-21			8							
	2016	Source Address 16	J1939-21			8							
	2017	Source Address 17	J1939-21			8							
	2018	Source Address 18	J1939-21			8							
	2019	Source Address 19	J1939-21			8							
	2020	Source Address 20	J1939-21			8							
	2021	Source Address 21	J1939-21			8							
	2022	Source Address 22	J1939-21			8							
	2023	Source Address 23	J1939-21			8							
	2024	Source Address 24	J1939-21			8							
	2025	Source Address 25	J1939-21			8							
	2026	Source Address 26	J1939-21			8							
	2027	Source Address 27	J1939-21			8							
	2028	Source Address 28	J1939-21			8							
	2029	Source Address 29	J1939-21			8							
	2030	Source Address 30	J1939-21			8							
	2031	Source Address 31	J1939-21			8							

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2032	Source Address 32	J1939-21			8							
	2033	Source Address 33	J1939-21			8							
	2034	Source Address 34	J1939-21			8							
	2035	Source Address 35	J1939-21			8							
	2036	Source Address 36	J1939-21			8							
	2037	Source Address 37	J1939-21			8							
	2038	Source Address 38	J1939-21			8							
	2039	Source Address 39	J1939-21			8							
	2040	Source Address 40	J1939-21			8							
	2041	Source Address 41	J1939-21			8							
	2042	Source Address 42	J1939-21			8							
	2043	Source Address 43	J1939-21			8							
	2044	Source Address 44	J1939-21			8							
	2045	Source Address 45	J1939-21			8							
	2046	Source Address 46	J1939-21			8							
	2047	Source Address 47	J1939-21			8							
	2048	Source Address 48	J1939-21			8							
	2049	Source Address 49	J1939-21			8							
	2050	Source Address 50	J1939-21			8							
	2051	Source Address 51	J1939-21			8							
	2052	Source Address 52	J1939-21			8							
	2053	Source Address 53	J1939-21			8							
	2054	Source Address 54	J1939-21			8							
	2055	Source Address 55	J1939-21			8							
	2056	Source Address 56	J1939-21			8							
	2057	Source Address 57	J1939-21			8							
	2058	Source Address 58	J1939-21			8							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2059	Source Address 59	J1939-21			8						
	2060	Source Address 60	J1939-21			8						
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	2063	Source Address 63	J1939-21			8						
	2064	Source Address 64	J1939-21			8						
	2065	Source Address 65	J1939-21			8						
	2066	Source Address 66	J1939-21			8						
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	2070	Source Address 70	J1939-21			8						
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	2082	Source Address 82	J1939-21			8						
	2083	Source Address 83	J1939-21			8						
	2084	Source Address 84	J1939-21			8						
	2085	Source Address 85	J1939-21			8						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2086	Source Address 86	J1939-21			8							
	2087	Source Address 87	J1939-21			8							
	2088	Source Address 88	J1939-21			8							
	2089	Source Address 89	J1939-21			8							
	2090	Source Address 90	J1939-21			8							
	2091	Source Address 91	J1939-21			8							
	2092	Source Address 92	J1939-21			8							
	2093	Source Address 93	J1939-21			8							
	2094	Source Address 94	J1939-21			8							
	2095	Source Address 95	J1939-21			8							
	2096	Source Address 96	J1939-21			8							
	2097	Source Address 97	J1939-21			8							
	2098	Source Address 98	J1939-21			8							
	2099	Source Address 99	J1939-21			8							
	2100	Source Address 100	J1939-21			8							
	2101	Source Address 101	J1939-21			8							
	2102	Source Address 102	J1939-21			8							
	2103	Source Address 103	J1939-21			8							
	2104	Source Address 104	J1939-21			8							
	2105	Source Address 105	J1939-21			8							
	2106	Source Address 106	J1939-21			8							
	2107	Source Address 107	J1939-21			8							
	2108	Source Address 108	J1939-21			8							
	2109	Source Address 109	J1939-21			8							
	2110	Source Address 110	J1939-21			8							
	2111	Source Address 111	J1939-21			8							
	2112	Source Address 112	J1939-21			8							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2113	Source Address 113	J1939-21			8						
	2114	Source Address 114	J1939-21			8						
	2115	Source Address 115	J1939-21			8						
	2116	Source Address 116	J1939-21			8						
	2117	Source Address 117	J1939-21			8						
	2118	Source Address 118	J1939-21			8						
	2119	Source Address 119	J1939-21			8						
	2120	Source Address 120	J1939-21			8						
	2121	Source Address 121	J1939-21			8						
	2122	Source Address 122	J1939-21			8						
	2123	Source Address 123	J1939-21			8						
	2124	Source Address 124	J1939-21			8						
	2125	Source Address 125	J1939-21			8						
	2126	Source Address 126	J1939-21			8						
	2127	Source Address 127	J1939-21			8						
	2128	Source Address 128	J1939-21			8						
	2129	Source Address 129	J1939-21			8						
	2130	Source Address 130	J1939-21			8						
	2131	Source Address 131	J1939-21			8						
	2132	Source Address 132	J1939-21			8						
	2133	Source Address 133	J1939-21			8						
	2134	Source Address 134	J1939-21			8						
	2135	Source Address 135	J1939-21			8						
	2136	Source Address 136	J1939-21			8						
	2137	Source Address 137	J1939-21			8						
	2138	Source Address 138	J1939-21			8						
	2139	Source Address 139	J1939-21			8						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2140	Source Address 140	J1939-21			8							
	2141	Source Address 141	J1939-21			8							
	2142	Source Address 142	J1939-21			8							
	2143	Source Address 143	J1939-21			8							
	2144	Source Address 144	J1939-21			8							
	2145	Source Address 145	J1939-21			8							
	2146	Source Address 146	J1939-21			8							
	2147	Source Address 147	J1939-21			8							
	2148	Source Address 148	J1939-21			8							
	2149	Source Address 149	J1939-21			8							
	2150	Source Address 150	J1939-21			8							
	2151	Source Address 151	J1939-21			8							
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	2154	Source Address 154	J1939-21			8							
	2155	Source Address 155	J1939-21			8							
	2156	Source Address 156	J1939-21			8							
	2157	Source Address 157	J1939-21			8							
	2158	Source Address 158	J1939-21			8							
	2159	Source Address 159	J1939-21			8							
	2160	Source Address 160	J1939-21			8							
	2161	Source Address 161	J1939-21			8							
	2162	Source Address 162	J1939-21			8							
	2163	Source Address 163	J1939-21			8							
	2164	Source Address 164	J1939-21			8							
	2165	Source Address 165	J1939-21			8							
	2166	Source Address 166	J1939-21			8							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2167	Source Address 167	J1939-21			8						
	2168	Source Address 168	J1939-21			8						
	2169	Source Address 169	J1939-21			8						
	2170	Source Address 170	J1939-21			8						
	2171	Source Address 171	J1939-21			8						
	2172	Source Address 172	J1939-21			8						
	2173	Source Address 173	J1939-21			8						
	2174	Source Address 174	J1939-21			8						
	2175	Source Address 175	J1939-21			8						
	2176	Source Address 176	J1939-21			8						
	2177	Source Address 177	J1939-21			8						
	2178	Source Address 178	J1939-21			8						
	2179	Source Address 179	J1939-21			8						
	2180	Source Address 180	J1939-21			8						
	2181	Source Address 181	J1939-21			8						
	2182	Source Address 182	J1939-21			8						
	2183	Source Address 183	J1939-21			8						
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	2186	Source Address 186	J1939-21			8						
	2187	Source Address 187	J1939-21			8						
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	2189	Source Address 189	J1939-21			8						
	2190	Source Address 190	J1939-21			8						
	2191	Source Address 191	J1939-21			8						
	2192	Source Address 192	J1939-21			8						
	2193	Source Address 193	J1939-21			8						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2194	Source Address 194	J1939-21			8							
	2195	Source Address 195	J1939-21			8							
	2196	Source Address 196	J1939-21			8							
	2197	Source Address 197	J1939-21			8							
	2198	Source Address 198	J1939-21			8							
	2199	Source Address 199	J1939-21			8							
	2200	Source Address 200	J1939-21			8							
	2201	Source Address 201	J1939-21			8							
	2202	Source Address 202	J1939-21			8							
	2203	Source Address 203	J1939-21			8							
	2204	Source Address 204	J1939-21			8							
	2205	Source Address 205	J1939-21			8							
	2206	Source Address 206	J1939-21			8							
	2207	Source Address 207	J1939-21			8							
	2208	Source Address 208	J1939-21			8							
	2209	Source Address 209	J1939-21			8							
	2210	Source Address 210	J1939-21			8							
	2211	Source Address 211	J1939-21			8							
	2212	Source Address 212	J1939-21			8							
	2213	Source Address 213	J1939-21			8							
	2214	Source Address 214	J1939-21			8							
	2215	Source Address 215	J1939-21			8							
	2216	Source Address 216	J1939-21			8							
	2217	Source Address 217	J1939-21			8							
	2218	Source Address 218	J1939-21			8							
	2219	Source Address 219	J1939-21			8							
	2220	Source Address 220	J1939-21			8							

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2221	Source Address 221	J1939-21			8							
	2222	Source Address 222	J1939-21			8							
	2223	Source Address 223	J1939-21			8							
	2224	Source Address 224	J1939-21			8							
	2225	Source Address 225	J1939-21			8							
	2226	Source Address 226	J1939-21			8							
	2227	Source Address 227	J1939-21			8							
	2228	Source Address 228	J1939-21			8							
	2229	Source Address 229	J1939-21			8							
	2230	Source Address 230	J1939-21			8							
	2231	Source Address 231	J1939-21			8							
	2232	Source Address 232	J1939-21			8							
	2233	Source Address 233	J1939-21			8							
	2234	Source Address 234	J1939-21			8							
	2235	Source Address 235	J1939-21			8							
	2236	Source Address 236	J1939-21			8							
	2237	Source Address 237	J1939-21			8							
	2238	Source Address 238	J1939-21			8							
	2239	Source Address 239	J1939-21			8							
	2240	Source Address 240	J1939-21			8							
	2241	Source Address 241	J1939-21			8							
	2242	Source Address 242	J1939-21			8							
	2243	Source Address 243	J1939-21			8							
	2244	Source Address 244	J1939-21			8							
	2245	Source Address 245	J1939-21			8							
	2246	Source Address 246	J1939-21			8							
	2247	Source Address 247	J1939-21			8							

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2248	Source Address 248	J1939-21			8							
	2249	Source Address 249	J1939-21			8							
	2250	Source Address 250	J1939-21			8							
	2251	Source Address 251	J1939-21			8							
	2252	Source Address 252	J1939-21			8							
	2253	Source Address 253	J1939-21			8							
	2254	Source Address 254	J1939-21			8							
	2255	Source Address 255	J1939-21			8							
	2256	Aux Valve 8 Extend Port Pressure	ISO 11783-7	65064	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.						
	2257	Aux Valve 8 Retract Port Pressure	ISO 11783-7	65064	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.						
	2258	Aux Valve 8 Return Port Pressure	ISO 11783-7	65064	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.						
	2259	Aux Valve 8 Port Flow Command	ISO 11783-7	65080	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2260	Aux Valve 8 State Command	ISO 11783-7	65080	3.1	4	Command for setting the auxiliary valve state.						
	2261	Aux Valve 8 Fail Safe Mode Command	ISO 11783-7	65080	3.7	2	Command for setting the fail safe mode of an auxiliary valve.						
	2262	Aux Valve 8 Fail Safe Mode	ISO 11783-7	65048	3.7	2	The measured state the fail safe mode of an auxiliary valve.						
	2263	Aux Valve 9 Extend Port Measured Flow	ISO 11783-7	65065	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2264	Aux Valve 9 Retract Port Measured Flow	ISO 11783-7	65065	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2265	Aux Valve 9 Extend Port Estimated Flow	ISO 11783-7	65049	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2266	Aux Valve 9 Retract Port Estimated Flow	ISO 11783-7	65049	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2267	Aux Valve 9 State	ISO 11783-7	65049	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2268	Aux Valve 9 Extend Port Pressure	ISO 11783-7	65065	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	2269	Aux Valve 9 Retract Port Pressure	ISO 11783-7	65065	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	2270	Aux Valve 9 Return Port Pressure	ISO 11783-7	65065	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	2271	Aux Valve 9 Port Flow Command	ISO 11783-7	65081	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2272	Aux Valve 9 State Command	ISO 11783-7	65081	3.1	4	Command for setting the auxiliary valve state.					
	2273	Aux Valve 9 Fail Safe Mode Command	ISO 11783-7	65081	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	2274	Aux Valve 9 Fail Safe Mode	ISO 11783-7	65049	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	2275	Aux Valve 10 Extend Port Measured Flow	ISO 11783-7	65066	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2276	Aux Valve 10 Retract Port Measured Flow	ISO 11783-7	65066	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2277	Aux Valve 10 Extend Port Estimated Flow	ISO 11783-7	65050	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2278	Aux Valve 10 Retract Port Estimated Flow	ISO 11783-7	65050	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2279	Aux Valve 10 State	ISO 11783-7	65050	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2280	Aux Valve 10 Extend Port Pressure	ISO 11783-7	65066	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	2281	Aux Valve 10 Retract Port Pressure	ISO 11783-7	65066	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	2282	Aux Valve 10 Return Port Pressure	ISO 11783-7	65066	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	2283	Aux Valve 10 Port Flow Command	ISO 11783-7	65082	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2284	Aux Valve 10 State Command	ISO 11783-7	65082	3.1	4	Command for setting the auxiliary valve state.					
	2285	Aux Valve 10 Fail Safe Mode Command	ISO 11783-7	65082	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	2286	Aux Valve 10 Fail Safe Mode	ISO 11783-7	65050	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	2287	Aux Valve 11 Extend Port Measured Flow	ISO 11783-7	65067	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2288	Aux Valve 11 Retract Port Measured Flow	ISO 11783-7	65067	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2289	Aux Valve 11 Extend Port Estimated Flow	ISO 11783-7	65051	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2290	Aux Valve 11 Retract Port Estimated Flow	ISO 11783-7	65051	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2291	Aux Valve 11 State	ISO 11783-7	65051	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2292	Aux Valve 11 Extend Port Pressure	ISO 11783-7	65067	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	2293	Aux Valve 11 Retract Port Pressure	ISO 11783-7	65067	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	2294	Aux Valve 11 Return Port Pressure	ISO 11783-7	65067	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	2295	Aux Valve 11 Port Flow Command	ISO 11783-7	65083	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2296	Aux Valve 11 State Command	ISO 11783-7	65083	3.1	4	Command for setting the auxiliary valve state.					
	2297	Aux Valve 11 Fail Safe Mode Command	ISO 11783-7	65083	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	2298	Aux Valve 11 Fail Safe Mode	ISO 11783-7	65051	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	2299	Aux Valve 12 Extend Port Measured Flow	ISO 11783-7	65068	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2300	Aux Valve 12 Retract Port Measured Flow	ISO 11783-7	65068	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2301	Aux Valve 12 Extend Port Estimated Flow	ISO 11783-7	65052	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2302	Aux Valve 12 Retract Port Estimated Flow	ISO 11783-7	65052	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2303	Aux Valve 12 State	ISO 11783-7	65052	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2304	Aux Valve 12 Extend Port Pressure	ISO 11783-7	65068	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2305	Aux Valve 12 Retract Port Pressure	ISO 11783-7	65068	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.						
	2306	Aux Valve 12 Return Port Pressure	ISO 11783-7	65068	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.						
	2307	Aux Valve 12 Port Flow Command	ISO 11783-7	65084	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2308	Aux Valve 12 State Command	ISO 11783-7	65084	3.1	4	Command for setting the auxiliary valve state.						
	2309	Aux Valve 12 Fail Safe Mode Command	ISO 11783-7	65084	3.7	2	Command for setting the fail safe mode of an auxiliary valve.						
	2310	Aux Valve 12 Fail Safe Mode	ISO 11783-7	65052	3.7	2	The measured state the fail safe mode of an auxiliary valve.						
	2311	Aux Valve 13 Extend Port Measured Flow	ISO 11783-7	65069	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2312	Aux Valve 13 Retract Port Measured Flow	ISO 11783-7	65069	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2313	Aux Valve 13 Extend Port Estimated Flow	ISO 11783-7	65053	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	2314	Aux Valve 13 Retract Port Estimated Flow	ISO 11783-7	65053	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	2315	Aux Valve 13 State	ISO 11783-7	65053	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.						
	2316	Aux Valve 13 Extend Port Pressure	ISO 11783-7	65069	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.						
	2317	Aux Valve 13 Retract Port Pressure	ISO 11783-7	65069	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.						
	2318	Aux Valve 13 Return Port Pressure	ISO 11783-7	65069	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2319	Aux Valve 13 Port Flow Command	ISO 11783-7	65085	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2320	Aux Valve 13 State Command	ISO 11783-7	65085	3.1	4	Command for setting the auxiliary valve state.					
	2321	Aux Valve 13 Fail Safe Mode Command	ISO 11783-7	65085	3.7	2	Command for setting the fail safe mode of an auxiliary valve.					
	2322	Aux Valve 13 Fail Safe Mode	ISO 11783-7	65053	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	2323	Aux Valve 14 Extend Port Measured Flow	ISO 11783-7	65070	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2324	Aux Valve 14 Retract Port Measured Flow	ISO 11783-7	65070	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					
	2325	Aux Valve 14 Extend Port Estimated Flow	ISO 11783-7	65054	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2326	Aux Valve 14 Retract Port Estimated Flow	ISO 11783-7	65054	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.					
	2327	Aux Valve 14 State	ISO 11783-7	65054	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2328	Aux Valve 14 Extend Port Pressure	ISO 11783-7	65070	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.					
	2329	Aux Valve 14 Retract Port Pressure	ISO 11783-7	65070	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.					
	2330	Aux Valve 14 Return Port Pressure	ISO 11783-7	65070	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.					
	2331	Aux Valve 14 Port Flow Command	ISO 11783-7	65086	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2332	Aux Valve 14 State Command	ISO 11783-7	65086	3.1	4	Command for setting the auxiliary valve state.						
	2333	Aux Valve 14 Fail Safe Mode Command	ISO 11783-7	65086	3.7	2	Command for setting the fail safe mode of an auxiliary valve.						
	2334	Aux Valve 14 Fail Safe Mode	ISO 11783-7	65054	3.7	2	The measured state the fail safe mode of an auxiliary valve.						
	2335	Aux Valve 15 Extend Port Measured Flow	ISO 11783-7	65071	1	8	The measured flow through the extend port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2336	Aux Valve 15 Retract Port Measured Flow	ISO 11783-7	65071	2	8	The measured flow through the retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2337	Aux Valve 15 Extend Port Estimated Flow	ISO 11783-7	65055	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	2338	Aux Valve 15 Retract Port Estimated Flow	ISO 11783-7	65055	2	8	The value reported by the controller of flow through the retract port of an auxiliary valve of a tractor which could be based on the commanded position of the valve.						
	2339	Aux Valve 15 State	ISO 11783-7	65055	3.1	4	The measured state of the auxiliary valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.						
	2340	Aux Valve 15 Extend Port Pressure	ISO 11783-7	65071	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor.						
	2341	Aux Valve 15 Retract Port Pressure	ISO 11783-7	65071	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor.						
	2342	Aux Valve 15 Return Port Pressure	ISO 11783-7	65071	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor.						
	2343	Aux Valve 15 Port Flow Command	ISO 11783-7	65087	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor, expressed as a percentage of full flow.						
	2344	Aux Valve 15 State Command	ISO 11783-7	65087	3.1	4	Command for setting the auxiliary valve state.						
	2345	Aux Valve 15 Fail Safe Mode Command	ISO 11783-7	65087	3.7	2	Command for setting the fail safe mode of an auxiliary valve.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2346	Aux Valve 15 Fail Safe Mode	ISO 11783-7	65055	3.7	2	The measured state the fail safe mode of an auxiliary valve.					
	2347	High Beam Head Light Command	J1939-71	65089	1.7	2	Command to activate or de-activate the tractor high beam head light lamps.					
	2348	High Beam Head Light Data	J1939-71	65088	1.7	2	This parameter provides measured data from the tractor high beam head light lamps.					
	2349	Low Beam Head Light Command	J1939-71	65089	1.5	2	Command to activate or de-activate the tractor low beam head light lamps.					
	2350	Low Beam Head Light Data	J1939-71	65088	1.5	2	This parameter provides measured data from the tractor low beam head light lamps.					
	2351	Alternate Beam Head Light Command	J1939-71	65089	1.3	2	Command to activate or de-activate the tractor alternate head lights (only low beam is available on alternate head lights).					
	2352	Alternate Beam Head Light Data	J1939-71	65088	1.3	2	This parameter provides measured data from the tractor alternate beam head light lamps.					
	2353	Tractor Front Low Mounted Work Lights Command	J1939-71	65089	6.5	2	Command to activate or de-activate the tractor front low mounted work lights.					
	2354	Tractor Front Low Mounted Work Lights	J1939-71	65088	6.5	2	This parameter provides measured data from the tractor front low mounted work lights.					
	2355	Tractor Front High Mounted Work Lights Command	J1939-71	65089	6.7	2	Command to activate or de-activate the tractor front high mounted work lights.					
	2356	Tractor Front High Mounted Work Lights	J1939-71	65088	6.7	2	This parameter provides measured data from the tractor front high mounted work lights.					
	2357	Tractor Underside Mounted Work Lights Command	J1939-71	65089	5.3	2	Command to activate or de-activate the tractor underside mounted work lights.					
	2358	Tractor Underside Mounted Work Lights	J1939-71	65088	5.3	2	This parameter provides measured data from the tractor underside mounted work lights.					
	2359	Tractor Rear Low Mounted Work Lights Command	J1939-71	65089	5.5	2	Command to activate or de-activate the tractor rear low mounted work lights.					
	2360	Tractor Rear Low Mounted Work Lights	J1939-71	65088	5.5	2	This parameter provides measured data from the tractor rear low mounted work lights.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2361	Tractor Rear High Mounted Work Lights Command	J1939-71	65089	5.7	2	Command to activate or de-activate the tractor rear high mounted work lights.					
	2362	Tractor Rear High Mounted Work Lights	J1939-71	65088	5.7	2	This parameter provides measured data from the tractor rear high mounted work lights.					
	2363	Tractor Side Low Mounted Work Lights Command	J1939-71	65089	6.1	2	Command to activate or de-activate the tractor side low mounted work lights.					
	2364	Tractor Side Low Mounted Work Lights	J1939-71	65088	6.1	2	This parameter provides measured data from the tractor side low mounted work lights.					
	2365	Tractor Side High Mounted Work Lights Command	J1939-71	65089	6.3	2	Command to activate or de-activate the tractor side high mounted work lights.					
	2366	Tractor Side High Mounted Work Lights	J1939-71	65088	6.3	2	This parameter provides measured data from the tractor side high mounted work lights.					
	2367	Left Turn Signal Lights Command	J1939-71	65089	2.7	2	Command to activate or de-activate left turn signal lights on the tractor and all connected implements					
	2368	Left Turn Signal Lights	J1939-71	65088	2.7	2	This parameter provides measured data from the tractor and attached implement left turn signal lights.					
	2369	Right Turn Signal Lights Command	J1939-71	65089	2.5	2	Command to activate or de-activate right turn signal lights on the tractor and all connected implements					
	2370	Right Turn Signal Lights	J1939-71	65088	2.5	2	This parameter provides measured data from the tractor and attached implement right turn signal lights.					
	2371	Left Stop Light Command	J1939-71	65089	3.7	2	Command to activate or de-activate the tractor and implement left stop lights					
	2372	Left Stop Light	J1939-71	65088	3.7	2	This parameter provides measured data from the tractor and attached implement left stop lights.					
	2373	Right Stop Light Command	J1939-71	65089	3.5	2	Command to activate or de-activate the tractor and implement right stop light					
	2374	Right Stop Light	J1939-71	65088	3.5	2	This parameter provides measured data from the tractor and attached implement right stop lights.					
	2375	Center Stop Light Command	J1939-71	65089	3.3	2	Command to activate or de-activate the tractor and implement center stop light					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2376	Center Stop Light	J1939-71	65088	3.3	2	This parameter provides measured data from the tractor and attached implement center stop lights.					
	2377	Tractor Marker Light Command	J1939-71	65089	4.7	2	Command to activate or de-activate tractor and implement front position lights, rear red tail lights, side amber running lights, license plate lights and instrument and switch back lights.					
	2378	Tractor Marker Light	J1939-71	65088	4.7	2	This parameter provides measured data from the tractor and attached implement marker lights, including front position lights, rear tail lights, side running lights, license plate lights and instruments and switch back lights.					
	2379	Implement Marker Light Command	J1939-71	65089	4.5	2	Command to activate or de-activate implement front position lights, rear red tail lights, side amber running lights, license plate lights and instrument and switch back lights.					
	2380	Implement Marker Light	J1939-71	65088	4.5	2	This parameter provides measured data from an attached implement marker lights, including front position lights, rear tail lights, side running lights, license plate lights and instruments and switch back lights.					
	2381	Tractor Clearance Light Command	J1939-71	65089	4.3	2	Command to activate or de-activate the tractor high mounted clearance and center ID lights					
	2382	Tractor Clearance Light	J1939-71	65088	4.3	2	This parameter provides measured data from the tractor high mounted clearance and center ID lights.					
	2383	Implement Clearance Light Command	J1939-71	65089	4.1	2	Command to activate or de-activate the implement high mounted clearance and lights.					
	2384	Implement Clearance Light	J1939-71	65088	4.1	2	This parameter provides measured data from an attached implement high mounted clearance lights.					
	2385	Rotating Beacon Light Command	J1939-71	65089	2.3	2	Command to activate or de-activate slow moving vehicle indicator lights on tractor and/or implements.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description		PID	MID	SID		
	2386	Rotating Beacon Light	J1939-71	65088	2.3	2	This parameter provides measured data from the beacon light on tractor or attached implements.						
	2387	Tractor Front Fog Lights Command	J1939-71	65089	2.1	2	Command to activate or de-activate tractor front fog lights						
	2388	Tractor Front Fog Lights	J1939-71	65088	2.1	2	This parameter provides measured data from the tractor front fog lights.						
	2389	Rear Fog Light Command	J1939-71	65089	5.1	2	Command to activate or de-activate tractor or implement rear fog lights.						
	2390	Rear Fog Lights	J1939-71	65088	5.1	2	This parameter provides measured data from the tractor and/or implement rear fog lights.						
	2391	Back Up Light and Alarm Horn Command	J1939-71	65089	3.1	2	Command to activate or de-activate the back up lights and/ or associated alarm if required.						
	2392	Back Up Light and Alarm Horn	J1939-71	65088	3.1	2	This parameter provides measured data from the back up lights and/ or associated alarm.						
	2393	Lighting Data Request Command	J1939-71	65089	8.1	2	Command to provide a response of the light state						
	2394	Implement Rear Work Light	J1939-71	65088	8.7	2	This parameter provides measured data from the implement rear work lamps.						
	2395	Implement OEM Option 1 Light Command	J1939-71	65089	7.3	2	Command to activate or de-activate an implement OEM option 1 light. This is provided to meet special needs on implements, such as tank inspection or filling lights.						
	2396	Implement OEM Option 1 Light	J1939-71	65088	7.3	2	This parameter provides measured data from the implement OEM option 1 light.						
	2397	Implement OEM Option 2 Light Command	J1939-71	65089	7.1	2	Command to activate or de-activate an implement OEM option 2 light. This is provided to meet special needs on implements, such as tank inspection or filling lights.						
	2398	Implement OEM Option 2 Light	J1939-71	65088	7.1	2	This parameter provides measured data from the implement OEM option 2 light.						
	2399	Implement Left Forward Work Light Command	J1939-71	65089	8.5	2	Command to activate or de-activate the forward facing work lights toward the left end of the implement.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description		PID	MID	SID	
	2400	Implement Left Forward Work Light	J1939-71	65088	8.5	2	This parameter provides measured data from the forward facing work lights toward the left end of the implement.					
	2401	Implement Right Forward Work Light Command	J1939-71	65089	8.3	2	Command to activate or de-activate the forward facing work lights toward the right end of the implement.					
	2402	Implement Right Forward Work Light	J1939-71	65088	8.3	2	This parameter provides measured data from the forward facing work lights toward the right end of the implement.					
	2403	Running Light Command	J1939-71	65089	1.1	2	Command to activate or de-activate the tractor or powered vehicle running lights. Usually only used for on road vehicles.					
	2404	Running Light	J1939-71	65088	1.1	2	This parameter provides measured data from the vehicle's running lights.					
	2405	Implement Rear Work Light Command	J1939-71	65089	8.7	2	Command to activate or de-activate implement rear work lights. (This is also the same as Reversing Lights for truck applications.)					
	2406	Implement Right Facing Work Light Command	J1939-71	65089	7.5	2	Command to activate or de-activate work lights mounted on an implement to illuminate beyond right end of the implement.					
	2407	Implement Right Facing Work Light	J1939-71	65088	7.5	2	This parameter provides measured data from the work lights mounted on an implement to illuminate beyond right end of the implement.					
	2408	Rear Power Take Off Engagement	ISO 11783-7	65091	5.7	2	A measured signal indicating that the rear power take off is engaged or disengage.					
	2409	Number of Members in Working Set ¹	J1939-81	64975	1	8	The number of members in a particular Working Set.					
	2409	Number of Members in Working Set ¹	J1939-81	65037	1	8	The number of members in a particular Working Set.					
	2410	Language Code Command	ISO 11783-7	65039	1-2	16	Command sent to all ECUs which specifies the operator's desired language of information. ISO 11783 shall use the 2-character string country codes in ISO 639.					
	2411	Decimal Symbol Command	ISO 11783-7	65039	3.7	2	Command sent to all ECUs which specifies that a decimal point or Comma should be displayed.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2412	Date Command	ISO 11783-7	65039	4	8	Command sent to all ECUs which specifies the displayed order of the date.					
	2413	Time Command	ISO 11783-7	65039	3.5	2	Command sent to all ECUs which specifies the displayed format of the time					
	2414	Distance Unit Command	ISO 11783-7	65039	5.7	2	Command to specify the distance units					
	2415	Area Unit Command	ISO 11783-7	65039	5.5	2	Command to specify the area units					
	2416	Volume Unit Command	ISO 11783-7	65039	5.3	2	Command to specify the volume units					
	2417	Mass Unit Command	ISO 11783-7	65039	5.1	2	Command to specify the mass units					
	2418	Repetition Rate Parameter ¹	ISO 11783-7	52224	4-5	16	This parameter defines the repetition rate of the specified PGN.					
	2418	Repetition Rate Parameter ¹	ISO 11783-7	65038	4-5	16	This parameter defines the repetition rate of the specified PGN.					
	2419	Data Format/Error Condition ¹	ISO 11783-7	51968	1.6	2	This 2 bit parameter that indicates the format or availability of the data in the following Process Data Parameter.					
	2419	Data Format/Error Condition ¹	ISO 11783-7	52224	6.6	2	This 2 bit parameter that indicates the format or availability of the data in the following Process Data Parameter.					
	2419	Data Format/Error Condition ¹	ISO 11783-7	65038	6.6	2	This 2 bit parameter that indicates the format or availability of the data in the following Process Data Parameter.					
	2420	Process Data Type ¹	ISO 11783-7	51968	1.4	2	This 2 bit parameter indicates what the data in the following Process Data Parameters is to be used for.					
	2420	Process Data Type ¹	ISO 11783-7	52224	6.4	2	This 2 bit parameter indicates what the data in the following Process Data Parameters is to be used for.					
	2420	Process Data Type ¹	ISO 11783-7	65038	6.4	2	This 2 bit parameter indicates what the data in the following Process Data Parameters is to be used for.					
	2421	Process Data Modifier ¹	ISO 11783-7	51968	1.1	3	This 3 bit parameter that indicates how the data in the following Process Data Parameters is to be used when combined with the Process Data Type parameter.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2421	Process Data Modifier ¹	ISO 11783-7	52224	6.1	3	This 3 bit parameter that indicates how the data in the following Process Data Parameters is to be used when combined with the Process Data Type parameter.					
	2421	Process Data Modifier ¹	ISO 11783-7	65038	6.1	3	This 3 bit parameter that indicates how the data in the following Process Data Parameters is to be used when combined with the Process Data Type parameter.					
	2422	Count Number	ISO 11783-7	51968	2	8	This parameter indicates which member of the set of possible entities is being referenced. The means of generating this Count Number is explained in the following clause.					
	2423	Group Number	ISO 11783-7			8	This parameter is used by software within the Management Computer, in combination with Element Number, to produce a unique Count Number for each member of a particular set of entities that are on an Implement. Refer to ISO 11783-10[3].					
	2424	Element Number	ISO 11783-7			8	This parameter is used by software within the Management Computer, in combination with Group Number, to produce a unique Count Number for each member of a particular set of entities that are on an Implement. Refer to ISO 11783-10[3].					
	2425	Implement Type ¹	ISO 11783-7	51968	3.5	4	This 4 bit parameter indicates which data dictionary page is to be used to locate the identity of the following data.					
	2425	Implement Type ¹	ISO 11783-7	52224	7.5	4	This 4 bit parameter indicates which data dictionary page is to be used to locate the identity of the following data.					
	2425	Implement Type ¹	ISO 11783-7	65038	7.5	4	This 4 bit parameter indicates which data dictionary page is to be used to locate the identity of the following data.					
	2426	Implement Position ¹	ISO 11783-7	51968	3.1	4	This 4 bit parameter of this message will indicate which implement is referenced within a set of identical Implements.					
	2426	Implement Position ¹	ISO 11783-7	52224	7.1	4	This 4 bit parameter of this message will indicate which implement is referenced within a set of identical Implements.					

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J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2426	Implement Position ¹	ISO 11783-7	65038	7.1	4	This 4 bit parameter of this message will indicate which Implement is referenced within a set of identical Implements.					
	2427	Data Dictionary Row ¹	ISO 11783-7	51968	4.5	4	This 4 bit parameter indicates the Row that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Group (GROUP) in LBS documents.					
	2427	Data Dictionary Row ¹	ISO 11783-7	52224	8.5	4	This 4 bit parameter indicates the Row that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Group (GROUP) in LBS documents.					
	2427	Data Dictionary Row ¹	ISO 11783-7	65038	8.5	4	This 4 bit parameter indicates the Row that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Group (GROUP) in LBS documents.					
	2428	Data Dictionary Column ¹	ISO 11783-7	51968	4.1	4	This 4 bit parameter indicates the Column that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Instance (INST) in LBS documents.					
	2428	Data Dictionary Column ¹	ISO 11783-7	52224	8.1	4	This 4 bit parameter indicates the Column that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Instance (INST) in LBS documents.					
	2428	Data Dictionary Column ¹	ISO 11783-7	65038	8.1	4	This 4 bit parameter indicates the Column that is to be used within the specific Data Dictionary Table identified by the Implement Type. This is the Instance (INST) in LBS documents.					
	2429	Process Variable Value	ISO 11783-7	51968	5-8	32	This 4 byte parameter contains the actual data for the Process Data Message.					
	2430	Engine Coolant Level - Main Radiator	J1939				Indicator of coolant level in main radiator or engine.					
	2431	Engine Oil Rail High Pressure Leakage	J1939				Indicates oil leakage in the high pressure oil rail of the engine.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2432	Engine Demand – Percent Torque	J1939-71	61444	8	8	The requested torque output of the engine by all dynamic internal inputs, including smoke control, noise control and low and high speed governing.					
	2433	Engine Exhaust Gas Temperature - Right Manifold	J1939-71	65031	1-2	16	Temperature of combustion byproducts within the right engine exhaust manifold.					
	2434	Engine Exhaust Gas Temperature - Left Manifold	J1939-71	65031	3-4	16	Temperature of combustion byproducts within the left engine exhaust manifold.					
	2435	Sea Water Pump Outlet Pressure	J1939-71	65172	3	8	Gauge pressure of liquid found at outlet of sea water pump in sea water cooling system.					
	2436	Generator Average AC Frequency	J1939-75	65030	5-6	16	Average AC frequency measured at the generator output.					
	2437	Generator Phase A AC Frequency	J1939-75	65027	5-6	16	AC frequency measured at the generator phase A output.					
	2438	Generator Phase B AC Frequency	J1939-75	65024	5-6	16	AC frequency measured at the generator phase B output.					
	2439	Generator Phase C AC Frequency	J1939-75	65021	5-6	16	AC frequency measured at the generator phase C output.					
	2440	Generator Average Line-Line AC RMS Voltage	J1939-75	65030	1-2	16	Average Line to Line RMS voltage measured at the generator output.					
	2441	Generator Phase AB Line-Line AC RMS Voltage	J1939-75	65027	1-2	16	Line to Line RMS voltage measured at the generator phase AB output.					
	2442	Generator Phase BC Line-Line AC RMS Voltage	J1939-75	65024	1-2	16	Line to Line RMS voltage measured at the generator phase BC output.					
	2443	Generator Phase CA Line-Line AC RMS Voltage	J1939-75	65021	1-2	16	Line to Line RMS voltage measured at the generator phase CA output.					
	2444	Generator Average Line-Neutral AC RMS Voltage	J1939-75	65030	3-4	16	The average Line to Neutral AC RMS voltage measured at the Generator output.					
	2445	Generator Phase A Line-Neutral AC RMS Voltage	J1939-75	65027	3-4	16	Line to Neutral RMS voltage measured at the generator phase A output.					
	2446	Generator Phase B Line-Neutral AC RMS Voltage	J1939-75	65024	3-4	16	Line to Neutral RMS voltage measured at the generator phase B output.					
	2447	Generator Phase C Line-Neutral AC RMS Voltage	J1939-75	65021	3-4	16	Line to Neutral RMS voltage measured at the generator phase C output.					
	2448	Generator Average AC RMS Current	J1939-75	65030	7-8	16	Average RMS current measured at the generator output.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2449	Generator Phase A AC RMS Current	J1939-75	65027	7-8	16	RMS current measured at the generator phase A output.						
	2450	Generator Phase B AC RMS Current	J1939-75	65024	7-8	16	RMS current measured at the generator phase B output.						
	2451	Generator Phase C AC RMS Current	J1939-75	65021	7-8	16	RMS current measured at the generator phase C output.						
	2452	Generator Total Real Power	J1939-75	65029	1-4	32	Total real power delivered by the generator.						
	2453	Generator Phase A Real Power	J1939-75	65026	1-4	32	The real power delivered by phase A of the generator.						
	2454	Generator Phase B Real Power	J1939-75	65023	1-4	32	The real power delivered by phase B of the generator.						
	2455	Generator Phase C Real Power	J1939-75	65020	1-4	32	The real power delivered by phase C of the generator.						
	2456	Generator Total Reactive Power	J1939-75	65028	1-4	32	The total reactive power delivered by the generator						
	2457	Generator Phase A Reactive Power	J1939-75	65025	1-4	32	The reactive power delivered by phase A of the generator						
	2458	Generator Phase B Reactive Power	J1939-75	65022	1-4	32	The reactive power delivered by phase B of the generator						
	2459	Generator Phase C Reactive Power	J1939-75	65019	1-4	32	The reactive power delivered by phase C of the generator						
	2460	Generator Total Apparent Power	J1939-75	65029	5-8	32	The total apparent power delivered by the generator.						
	2461	Generator Phase A Apparent Power	J1939-75	65026	5-8	32	The apparent power delivered by phase A of the generator.						
	2462	Generator Phase B Apparent Power	J1939-75	65023	5-8	32	The apparent power delivered by phase B of the generator.						
	2463	Generator Phase C Apparent Power	J1939-75	65020	5-8	32	The apparent power delivered by phase C of the generator.						
	2464	Generator Overall Power Factor	J1939-75	65028	5-6	16	The average power factor of the generator.						
	2465	Generator Phase A Power Factor	J1939-75	65025	5-6	16	The power factor of phase A of the generator.						
	2466	Generator Phase B Power Factor	J1939-75	65022	5-6	16	The power factor of phases B of the generator.						
	2467	Generator Phase C Power Factor	J1939-75	65019	5-6	16	The power factor of phases C of the generator.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2468	Generator Total kW Hours Export	J1939-75	65018	1-4	32	The total kilowatt-hours that have been exported by the generator.					
	2469	Generator Total kW Hours Import	J1939-75	65018	5-8	32	The total kilowatt-hours that have been imported by the generator.					
	2470	Utility Average AC Frequency	J1939-75	65017	5-6	16	Average AC frequency measured at the utility incompressor.					
	2471	Utility Phase A AC Frequency	J1939-75	65014	5-6	16	AC frequency measured at the utility incompressor phase A.					
	2472	Utility Phase B AC Frequency	J1939-75	65011	5-6	16	AC frequency measured at the utility incompressor phase B.					
	2473	Utility Phase C AC Frequency	J1939-75	65008	5-6	16	AC frequency measured at the utility incompressor phase C.					
	2474	Utility Average Line-Line AC RMS Voltage	J1939-75	65017	1-2	16	Average Line to Line RMS voltage measured at the utility incompressor .					
	2475	Utility Phase AB Line-Line AC RMS Voltage	J1939-75	65014	1-2	16	Line to Line RMS voltage measured at the utility incompressor phase AB.					
	2476	Utility Phase BC Line-Line AC RMS Voltage	J1939-75	65011	1-2	16	Line to Line RMS voltage measured at the utility incompressor phase BC.					
	2477	Utility Phase CA Line-Line AC RMS Voltage	J1939-75	65008	1-2	16	Line to Line RMS voltage measured at the utility incompressor phase CA.					
	2478	Utility Average Line-Neutral AC RMS Voltage	J1939-75	65017	3-4	16	The average Line to Neutral AC RMS voltage measured at the utility incompressor .					
	2479	Utility Phase A Line-Neutral AC RMS Voltage	J1939-75	65014	3-4	16	Line to Neutral RMS voltage measured at the utility incompressor phase A.					
	2480	Utility Phase B Line-Neutral AC RMS Voltage	J1939-75	65011	3-4	16	Line to Neutral RMS voltage measured at the utility incompressor phase B.					
	2481	Utility Phase C Line-Neutral AC RMS Voltage	J1939-75	65008	3-4	16	Line to Neutral RMS voltage measured at the utility incompressor phase C.					
	2482	Utility Average AC RMS Current	J1939-75	65017	7-8	16	Average RMS current measured at the utility incompressor.					
	2483	Utility Phase A AC RMS Current	J1939-75	65014	7-8	16	RMS current measured at the utility incompressor phase A.					
	2484	Utility Phase B AC RMS Current	J1939-75	65011	7-8	16	RMS current measured at the utility incompressor phase B.					
	2485	Utility Phase C AC RMS Current	J1939-75	65008	7-8	16	RMS current measured at the utility incompressor phase C.					
	2486	Utility Total Real Power	J1939-75	65016	1-4	32	Total real power delivered by the utility incompressor.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2487	Utility Phase A Real Power	J1939-75	65013	1-4	32	The real power delivered by phase A of the utility incomer.						
	2488	Utility Phase B Real Power	J1939-75	65010	1-4	32	The real power delivered by phase B of the utility incomer.						
	2489	Utility Phase C Real Power	J1939-75	65007	1-4	32	The real power delivered by phase C of the utility incomer.						
	2490	Utility Total Reactive Power	J1939-75	65015	1-4	32	The total reactive power delivered by the utility incomer						
	2491	Utility Phase A Reactive Power	J1939-75	65012	1-4	32	The reactive power delivered by phase A of the utility incomer						
	2492	Utility Phase B Reactive Power	J1939-75	65009	1-4	32	The reactive power delivered by phase B of the utility incomer						
	2493	Utility Phase C Reactive Power	J1939-75	65006	1-4	32	The reactive power delivered by phase C of the utility incomer						
	2494	Utility Total Apparent Power	J1939-75	65016	5-8	32	The total apparent power delivered by the utility incomer.						
	2495	Utility Phase A Apparent Power	J1939-75	65013	5-8	32	The apparent power delivered by phase A of the utility incomer.						
	2496	Utility Phase B Apparent Power	J1939-75	65010	5-8	32	The apparent power delivered by phase B of the utility incomer.						
	2497	Utility Phase C Apparent Power	J1939-75	65007	5-8	32	The apparent power delivered by phase C of the utility incomer.						
	2498	Utility Overall Power Factor	J1939-75	65015	5-6	16	The average power factor of the utility incomer.						
	2499	Utility Phase A Power Factor	J1939-75	65012	5-6	16	The power factor of phase A of the utility incomer.						
	2500	Utility Phase B Power Factor	J1939-75	65009	5-6	16	The power factor of phases B of the utility incomer.						
	2501	Utility Phase C Power Factor	J1939-75	65006	5-6	16	The power factor of phases C of the utility incomer.						
	2502	Utility Total kW Hours Export	J1939-75	65005	1-4	32	The total kilowatt-hours that have been exported by the utility incomer.						
	2503	Utility Total kW Hours Import	J1939-75	65005	5-8	32	The total kilowatt-hours that have been imported by the utility incomer.						
	2504	Bus #1 Average AC Frequency	J1939-75	65004	5-6	16	Average AC frequency measured at bus #1.						
	2505	Bus #1 Phase A AC Frequency	J1939-75	65003	5-6	16	AC frequency measured at bus #1 phase A.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2506	Bus #1 Phase B AC Frequency	J1939-75	65002	5-6	16	AC frequency measured at bus #1 phase B.					
	2507	Bus #1 Phase C AC Frequency	J1939-75	65001	5-6	16	AC frequency measured at bus #1 phase C.					
	2508	Bus #1 Average Line-Line AC RMS Voltage	J1939-75	65004	1-2	16	Average Line to Line RMS voltage measured at bus #1.					
	2509	Bus #1 Phase AB Line-Line AC RMS Voltage	J1939-75	65003	1-2	16	Line to Line RMS voltage measured at bus #1 phase AB.					
	2510	Bus #1 Phase BC Line-Line AC RMS Voltage	J1939-75	65002	1-2	16	Line to Line RMS voltage measured at bus #1 phase BC.					
	2511	Bus #1 Phase CA Line-Line AC RMS Voltage	J1939-75	65001	1-2	16	Line to Line RMS voltage measured at bus #1 phase CA.					
	2512	Bus #1 Average Line-Neutral AC RMS Voltage	J1939-75	65004	3-4	16	The average Line to Neutral AC RMS voltage measured at bus #1.					
	2513	Bus #1 Phase A Line-Neutral AC RMS Voltage	J1939-75	65003	3-4	16	Line to Neutral RMS voltage measured at bus #1 phase A.					
	2514	Bus #1 Phase B Line-Neutral AC RMS Voltage	J1939-75	65002	3-4	16	Line to Neutral RMS voltage measured at bus #1 phase B.					
	2515	Bus #1 Phase C Line-Neutral AC RMS Voltage	J1939-75	65001	3-4	16	Line to Neutral RMS voltage measured at bus #1 phase C.					
	2516	Bus #1/Generator AC Phase Difference	J1939-75	65000	3-4	16	The phase difference between the Bus #1 voltage and Generator voltage.					
	2517	Bus #1/Utility AC Phase Difference	J1939-75	64999	3-4	16	The phase difference between the Bus #1 voltage and Utility voltage.					
	2518	Generator Overall Power Factor Lagging	J1939-75	65028	7.1	2	Lead/lag status for generator average power factor.					
	2519	Generator Phase A Power Factor Lagging	J1939-75	65025	7.1	2	Lead/lag status for generator phase A power factor.					
	2520	Generator Phase B Power Factor Lagging	J1939-75	65022	7.1	2	Lead/lag status for generator phase B power factor.					
	2521	Generator Phase C Power Factor Lagging	J1939-75	65019	7.1	2	Lead/lag status for generator phase C power factor.					
	2522	Utility Overall Power Factor Lagging	J1939-75	65015	7.1	2	Lead/lag status for utility incomer average power factor.					
	2523	Utility Phase A Power Factor Lagging	J1939-75	65012	7.1	2	Lead/lag status for utility incomer phase A power factor.					
	2524	Utility Phase B Power Factor Lagging	J1939-75	65009	7.1	2	Lead/lag status for utility incomer phase B power factor.					

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	2525	Utility Phase C Power Factor Lagging	J1939-75	65006	7.1	2	Lead/lag status for utility incomer phase C power factor.					
	2526	Bus #1/Generator Phase Match	J1939-75	65000	1.3	2	Indicator of whether phase difference between Bus #1 and Generator is adequate for paralleling. This indicator will be based on the measured AC phase difference qualified using parameters such as Phase Tolerance and Dwell Time.					
	2527	Bus #1/Generator Voltage Match	J1939-75	65000	1.7	2	Indicator of whether voltage difference between Bus #1 and Generator is adequate for paralleling. This indicator will be based on the measured AC voltages qualified using parameters such as Voltage Tolerance.					
	2528	Bus #1/Generator Frequency Match	J1939-75	65000	1.5	2	Indicator of whether frequency difference between Bus #1 and Generator is adequate for paralleling. This indicator will be based on the measured AC frequencies qualified using parameters such as Frequency Tolerance, Phase Tolerance, and Dwell Time.					
	2529	Bus #1/Generator In Sync	J1939-75	65000	2.1	2	Indicator of whether Bus #1 and Generator are properly synchronized for paralleling. This indicator will be based on parameters such as Voltage Match, Frequency Match, and Phase Match.					
	2530	Bus #1/Generator Dead Bus	J1939-75	65000	1.1	2	Indicator of whether Bus #1 is considered dead for closing to the generator. This indicator will be based on parameters such as Bus #1 Voltage and dead bus threshold values.					
	2531	Bus #1/Utility Phase Match	J1939-75	64999	1.3	2	Indicator of whether phase difference between Bus #1 and Utility is adequate for paralleling. This indicator will be based on the measured AC phase difference qualified using parameters such as Phase Tolerance and Dwell Time.					

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2532	Bus #1/Utility Voltage Match	J1939-75	64999	1.7	2	Indicator of whether voltage difference between Bus #1 and Utility is adequate for paralleling. This indicator will be based on the measured AC voltages qualified using parameters such as Voltage Tolerance.					
	2533	Bus #1/Utility Frequency Match	J1939-75	64999	1.5	2	Indicator of whether frequency difference between Bus #1 and Utility is adequate for paralleling. This indicator will be based on the measured AC frequencies qualified using parameters such as Frequency Tolerance, Phase Tolerance, and Dwell Time.					
	2534	Bus #1/Utility In Sync	J1939-75	64999	2.1	2	Indicator of whether Bus #1 and Utility are properly synchronized for paralleling. This indicator will be based on parameters such as Voltage Match, Frequency Match, and Phase Match.					
	2535	Bus #1/Utility Dead Bus	J1939-75	64999	1.1	2	Indicator of whether Bus #1 is considered dead for closing to the utility. This indicator will be based on parameters such as Bus #1 Voltage and dead bus threshold values.					
	2536	Transmission Mode 1 Indicator	J1939-71	65098	3.7	2	This state signal is the transmission's indication that it is operating under transmission mode 1					
	2537	Transmission Mode 2 Indicator	J1939-71	65098	3.5	2	This state signal is the transmission's indication that it is operating under transmission mode 2					
	2538	Transmission Mode 3 Indicator	J1939-71	65098	3.3	2	This state signal is the transmission's indication that it is operating under transmission mode 3					
	2539	Transmission Mode 4 Indicator	J1939-71	65098	3.1	2	This state signal is the transmission's indication that it is operating under transmission mode 4					
	2540	Parameter Group Number (RQST)	J1939-21	59904	1-3	24	Whenever it is necessary to identify a Parameter Group Number in the data field of a CAN data frame, it will be expressed in 24 bits.					
	2541	Control Byte (ACKM)	J1939-21	59392	1	8	Indicates the acknowledgement response.					

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2542	Group Function Value (ACK)	J1939-21	59392	0x00;2	8	Positive Acknowledgement Group Function value						
	2543	Parameter Group Number (ACK)	J1939-21	59392	0x00;6-8	24	Parameter Group Number associated with positive acknowledgement.						
	2544	Group Function Value (NACK)	J1939-21	59392	0x01;2	8	Negative Acknowledgement Group Function value						
	2545	Parameter Group Number (NACK)	J1939-21	59392	0x01;6-8	24	Parameter Group Number associated with negative acknowledgement.						
	2546	Group Function Value (NACK_AD)	J1939-21	59392	0x02;2	8	Indicates the acknowledgement response.						
	2547	Parameter Group Number (NACK_AD)	J1939-21	59392	0x02;6-8	24	Parameter Group Number associated with PGN supported but security is denying access.						
	2548	Group Function Value (NACK_Busy)	J1939-21	59392	0x03;2	8	Indicates the acknowledgement response.						
	2549	Parameter Group Number (NACK_Busy)	J1939-21	59392	0x03;6-8	24	Parameter Group Number associated with PGN supported, but ECU can not currently respond to request.						
	2550	Manufacturer Specific Information (PropA_PDU1)	J1939-21	61184	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65280	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65281	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65282	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65283	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65284	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65285	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65286	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65287	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65288	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65289	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65290	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65291	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65292	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65293	1-8	14280							

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	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65294	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65295	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65296	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65297	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65298	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65299	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65300	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65301	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65302	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65303	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65304	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65305	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65306	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65307	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65308	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65309	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65310	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65311	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65312	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65313	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65314	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65315	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65316	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65317	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65318	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65319	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65320	1-8	14280						

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	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65321	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65322	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65323	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65324	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65325	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65326	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65327	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65328	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65329	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65330	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65331	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65332	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65333	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65334	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65335	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65336	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65337	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65338	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65339	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65340	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65341	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65342	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65343	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65344	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65345	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65346	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65347	1-8	14280						

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	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65348	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65349	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65350	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65351	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65352	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65353	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65354	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65355	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65356	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65357	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65358	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65359	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65360	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65361	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65362	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65363	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65364	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65365	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65366	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65367	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65368	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65369	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65370	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65371	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65372	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65373	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65374	1-8	14280							

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	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65375	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65376	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65377	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65378	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65379	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65380	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65381	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65382	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65383	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65384	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65385	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65386	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65387	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65388	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65389	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65390	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65391	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65392	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65393	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65394	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65395	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65396	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65397	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65398	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65399	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65400	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65401	1-8	14280						

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Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65402	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65403	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65404	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65405	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65406	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65407	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65408	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65409	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65410	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65411	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65412	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65413	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65414	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65415	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65416	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65417	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65418	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65419	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65420	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65421	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65422	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65423	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65424	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65425	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65426	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65427	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65428	1-8	14280						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65429	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65430	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65431	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65432	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65433	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65434	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65435	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65436	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65437	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65438	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65439	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65440	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65441	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65442	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65443	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65444	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65445	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65446	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65447	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65448	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65449	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65450	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65451	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65452	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65453	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65454	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65455	1-8	14280							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65456	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65457	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65458	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65459	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65460	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65461	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65462	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65463	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65464	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65465	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65466	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65467	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65468	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65469	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65470	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65471	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65472	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65473	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65474	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65475	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65476	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65477	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65478	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65479	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65480	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65481	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65482	1-8	14280						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65483	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65484	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65485	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65486	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65487	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65488	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65489	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65490	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65491	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65492	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65493	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65494	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65495	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65496	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65497	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65498	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65499	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65500	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65501	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65502	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65503	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65504	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65505	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65506	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65507	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65508	1-8	14280						
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65509	1-8	14280						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65510	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65511	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65512	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65513	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65514	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65515	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65516	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65517	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65518	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65519	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65520	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65521	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65522	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65523	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65524	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65525	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65526	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65527	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65528	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65529	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65530	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65531	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65532	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65533	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65534	1-8	14280							
	2551	Manufacturer Defined Usage (PropB_PDU2) ¹	J1939-21	65535	1-8	14280							
	2552	Parameter Group Number of Requested Information (XFER)	J1939-21	51712	1-3	24	PGN associated with this transfer message						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2553	Length of data for the reported PGN (XFER)	J1939-21	51712	4	8	Length of data reported with the associated PGN via the Transfer PGN.					
	2554	Short Name of Actual Reporting Device	J1939-21	51712	5-8	24	Short name of reporting device of the requested PGN via the Transfer PGN.					
	2555	Transfer Data	J1939-21	51712	9-x	14216	Relevant data for this PGNs unique use.					
	2556	Control Byte (TP.CM)	J1939-21	60416	1	8	Control byte (I.e. Group Function) associated with the Transport Protocol - Connection Management (PGN 60.416)					
	2557	Total Message Size (TP.CM_RTS) ¹	J1939-21	60416	0x10;2-3	16	Total message size (in bytes) for RTS/CTS message.					
	2557	Total Message Size (TP.CM_RTS) ¹	J1939-21	60416	0x13;2-3	16	Total message size (in bytes) for RTS/CTS message.					
	2558	Total Number of Packets (TP.CM_RTS)	J1939-21	60416	0x10;4	8	Total number of packets for RTS/CTS message.					
	2559	Maximum Number of Packets (TP.CM_RTS)	J1939-21	60416	0x10;5	8	Maximum number of packets for RTS/CTS message.					
	2560	Parameter Group Number of the packeted message (TP.CM_RTS)	J1939-21	60416	0x10;6-8	24	Requested PGN in the TP.CM_RTS message					
	2561	Number of Packets that can be sent (TP.CM_CTS)	J1939-21	60416	0x11;2	8	Number of Packets that can be sent (TP.CM_CTS)					
	2562	Next Packet Number to be sent (TP.CM_CTS)	J1939-21	60416	0x11;3	8	Next Packet Number to be sent (TP.CM_CTS)					
	2563	Parameter Group Number of the packeted message (TP.CM_CTS)	J1939-21	60416	0x11;6-8	24	PGN of requested information in the TP.CM_CTS message					
	2564	Total Message Size (TP.CM_EndofMsgACK)	J1939-21	60416	0x13;2-3	16	Total message size (in bytes) received for RTS/CTS message.					
	2565	Total Number of Packets (TP.CM_EndofMsgACK)	J1939-21	60416	0x13;4	8	Total number of packets received for RTS/CTS message.					
	2566	Parameter Group Number of the packeted message (TP.CM_EndofMsgACK)	J1939-21	60416	0x13;6-8	24	Requested PGN in the TP.CM_RTS message					
	2567	Total Message Size (TP.CM_BAM)	J1939-21	60416	0x20;2-3	16	Total message size (in bytes) for BAM message.					
	2568	Total Number of Packets (TP.CM_BAM)	J1939-21	60416	0x20;4	8	Total number of packets for BAM message.					
	2569	Parameter Group Number of the packeted message (TP.CM_BAM)	J1939-21	60416	0x20;6-8	24	Requested PGN in the TP.CM_BAM message					
	2570	Connection Abort Reason	J1939-21	60416	0xFF;2	8	Reason for connection abort message.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2571	Parameter Group Number of packeted message (TP.CM_Conn_Abort)	J1939-21	60416	0xFF;6-8	24	Requested PGN in the TP.CM_Conn_Abort message					
	2572	Sequence Number (TP.DT)	J1939-21	60160	1	8	Sequence Number (TP.DT)					
	2573	Packetized Data (TP.DT)	J1939-21	60160	2-x	14272	Relevant data for this PGNs unique use.					
	2574	Parameter Group Number (RQST2)	J1939-21	51456	1-3	24	PGN which is requested by Request2 message					
	2575	Use Transfer Mode	J1939-21	51456	4.1	2	Requester is to respond via the Transfer PGN					
	2576	Laser Receiver Type	J1939-71	65141	3	8	Identifies which type of Laser Receiver transmitted the message.					
	2577	Display Deadbands	J1939-71	65142	3.5	4	Sets Display Deadbands mode.					
	2578	LED Pattern Control	J1939-71	65142	3.1	4	Sets LED Pattern control mode on laser leveling systems.					
	2579	Net Battery Current (High Range/Resolution)	J1939-71	65106	3-4	16	Net flow of electrical current into/out-of the battery or batteries.					
	2580	Hydraulic Brake Pressure Circuit 1	J1939-71	64998	1	8	Gage hydraulic pressure in circuit 1 of the hydraulic brake system					
	2581	Hydraulic Brake Pressure Circuit 2	J1939-71	64998	2	8	Gage hydraulic pressure in circuit 2 of the hydraulic brake system					
	2582	Hydraulic Brake Pressure Supply State Circuit 1	J1939-71	64998	3.5	2	Signal which indicates whether the hydraulic brake pressure supply of circuit 1 is reliable.					
	2583	Hydraulic Brake Pressure Supply State Circuit 2	J1939-71	64998	3.7	2	Signal which indicates whether the hydraulic brake pressure supply of circuit 2 is reliable.					
	2584	Hydraulic Brake Pressure Warning State Circuit 1	J1939-71	64998	3.1	2	Signal which indicates whether the hydraulic brake pressure of circuit 1 is below the warning level					
	2585	Hydraulic Brake Pressure Warning State Circuit 2	J1939-71	64998	3.3	2	Signal which indicates whether the hydraulic brake pressure of circuit 2 is below the warning level					
	2586	Tire Air Leakage Rate	J1939-71	65268	6-7	16	The pressure loss rate of a tire.					
	2587	Tire Pressure Threshold Detection	J1939-71	65268	8.6	3	Signal indicating the pressure level of the tire.					
	2588	Maximum Vehicle Speed Limit 1	J1939-71	64997	1	8	The lowest Maximum Vehicle Speed Limit.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2589	Maximum Vehicle Speed Limit 2	J1939-71	64997	2	8	The highest of the two lowest vehicle speed limits						
	2590	Maximum Vehicle Speed Limit 3	J1939-71	64997	3	8	The highest of the three lowest vehicle speed limits						
	2591	Maximum Vehicle Speed Limit 4	J1939-71	64997	4	8	The highest of the four lowest vehicle speed limits						
	2592	Maximum Vehicle Speed Limit 5	J1939-71	64997	5	8	The highest of the five lowest vehicle speed limits						
	2593	Maximum Vehicle Speed Limit 6	J1939-71	64997	6	8	The highest of the six lowest vehicle speed limits						
	2594	Maximum Vehicle Speed Limit 7	J1939-71	64997	7	8	The highest of the seven lowest vehicle speed limits						
	2595	Applied Vehicle Speed Limit	J1939-71	64997	8	8	The vehicle speed limit in effect.						
	2596	Selected Maximum Vehicle Speed Limit	J1939-71	57344	8	8	User selected maximum vehicle speed						
	2597	Implement Left Facing Work Light Command	J1939-71	65089	7.7	2	Command to activate or de-activate work lights mounted on an implement to illuminate beyond left end of the implement.						
	2598	Implement Left Facing Work Light	J1939-71	65088	7.7	2	This parameter provides measured data from the work lights mounted on an implement to illuminate beyond left end of the implement.						
	2599	Fire Apparatus Pump Engagement	J1939-71	61448	3.5	2	The measured status of the pump used to provide water in fire fighting apparatus.						
	2600	Payload Percentage	J1939-71	64996	1	8	The current payload of the equipment, reported as a percentage of the equipment's rated payload limit.						
	2601	Travel Velocity Control Position	J1939-71	64995	1	8	The position of the travel velocity control component reported as a percentage of the control's full displacement in each direction respectively						
	2602	Hydraulic Oil Level	J1939-71	65128	3	8	This parameter indicates the level of the hydraulic fluid in tank as a ratio of current volume to total tank volume.						
	2603	Pneumatic Supply Pressure Request	J1939-71	64994	1	8	Command signal to influence the pneumatic pressure in the main reservoir.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2604	Parking and/or Trailer Air Pressure Request	J1939-71	64994	2	8	Command signal to influence the pneumatic pressure in the circuit or reservoir for the parking brake and/or the trailer supply.					
	2605	Service Brake Air Pressure Request, Circuit #1	J1939-71	64994	3	8	Command signal to influence the pneumatic pressure in the service brake circuit or reservoir #1.					
	2606	Service Brake Air Pressure Request, Circuit #2	J1939-71	64994	4	8	Command signal to influence the pneumatic pressure in the service brake circuit or reservoir #2.					
	2607	Auxiliary Equipment Supply Pressure Request	J1939-71	64994	5	8	Command signal to influence the pneumatic pressure in the auxiliary circuit.					
	2608	Air Suspension Supply Pressure Request	J1939-71	64994	6	8	Command signal to influence the pneumatic pressure in the circuit for the electronically controlled air suspension system.					
	2609	Cab A/C Refrigerant Compressor Outlet Pressure	J1939-71	64993	1	8	This is the gage pressure at the compressor outlet in the cab air conditioning system.					
	2610	Solar Intensity Percent	J1939-71	64992	1	8	This is the solar radiation (power density) falling on the vehicle in percent of the maximum sensor value. Currently this is in the infra-red spectrum.					
	2611	Solar Sensor Maximum	J1939-71	64992	2	8	This is the maximum value which can be reported by the sensor for the solar intensity. (This is a configuration parameter)					
	2612	Front Wheel Drive Actuator Status	J1939-71	64991	1.1	2	Feedback on the front wheel drive actuator.					
	2613	Drive Axle Lube Pressure	J1939-71	65273	5	8	The drive axle lubricant pressure with location determined by Drive Axle Location (SPN 930).					
	2614	Steering Axle Lube Pressure	J1939-71	65273	8	8	The steering axle lubricant pressure.					
	2615	Engine Throttle Synchronization Mode Status	J1939-71	64988	1.1	4	The status of the Throttle Synchronization Mode.					
	2616	Trolling Mode Status	J1939-71	64988	1.5	2	The status of the Trolling Mode.					
	2617	Slow Vessel Mode Status	J1939-71	64988	1.7	2	The status of the Slow Vessel Mode.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2618	Suspend Signal	J1939-73	57088	4.1	4	Indicator to all nodes that the current communication port broadcast messages are being suspended					
	2619	Suspend Duration	J1939-73	57088	5-6	16	Indicates the duration of a suspension of broadcast messages when that duration is known by the transmitting device.					
	2620	Brake Lining Display	J1939				Driver/operator information device for brake lining wear					
	2621	Pneumatic Brake Pressure Limitation Valve Front Axle	J1939				Pneumatic valve limiting the maximum brake pressure at the front axle					
	2622	Hillholder system	J1939				System for short time substitute of parking brake by activation of service brake.					
	2623	Accelerator Pedal #1 Channel 2	J1939				Sensor output 2 for the accelerator pedal #1 position when using a redundant-style sensor.					
	2624	Accelerator Pedal #1 Channel 3	J1939				Sensor output 3 for the accelerator pedal #1 position when using a redundant-style sensor.					
	2625	Accelerator Pedal #2 Channel 2	J1939				Sensor output 2 for the accelerator pedal #2 position when using a redundant-style sensor.					
	2626	Accelerator Pedal #2 Channel 3	J1939				Sensor output 3 for the accelerator pedal #2 position when using a redundant-style sensor.					
	2627	Engine Gaseous Fuel Shutoff Valve - High Pressure	J1939				The gaseous fuel shutoff valve located at the tank. This valve blocks the flow of fuel away from the tank.					
	2628	Engine Gaseous Fuel Shutoff Valve - Low Pressure	J1939				The gaseous fuel shutoff valve located after the pressure regulator. This valve blocks the flow of the pressure regulated fuel.					
	2629	Engine Turbocharger 1 Compressor Outlet Temperature	J1939-71	64979	1-2	16	Temperature of the air exiting the turbocharger 1 compressor outlet					
	2630	Engine Charge Air Cooler Outlet Temperature	J1939-71	65129	7-8	16	Temperature of combustion air after it exits from the Charge Air Cooler but before any mixing of Recirculated Exhaust Gas.					
	2631	Engine Charge Air Cooler Outlet Pressure	J1939-71	64938	8	8	Measures pressure of air at outlet from charge air cooler					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2632	Engine Charge Air Cooler Bypass	J1939				Controls whether combustion air passes through the charge air cooler					
	2633	Engine Variable Geometry Turbocharger (VGT) 1 Nozzle Position	J1939				Measures the position of the nozzles or vanes in variable geometry turbocharger #1			0		216
	2634	Power Relay	J1939				Used to control power to other devices on the vehicle			0		216
	2635	"Neutral Only" Power Relay	J1939				Provides power to accessories ONLY when transmission is in neutral					
	2636	Windshield Wiper Motor ON/OFF	J1939				Activates the windshield wipers					
	2637	Windshield Wiper Motor Speed	J1939				Selects the windshield wiper speed					
	2638	Differential Lock Control Valve #2	J1939				Operates the second Differential Lock					
	2639	Cab Door "Lock" Control	J1939				Commands the door mechanism to Lock					
	2640	Cab Door "Unlock" Control	J1939				Commands the door mechanism to Unlock					
	2641	Horn	J1939				Activates the vehicle horn					
	2642	Mirror 1 Heater	J1939				Mirror 1 Heater defrosts the first rear view mirror, alternatively all rear view mirrors.					
	2643	Battery Monitor Load #1	J1939				Activates the #1 electrical load to monitor battery condition					
	2644	Battery Monitor Load #2	J1939				Activates the #2 electrical load to monitor battery condition					
	2645	ECU "Wake Up" Control	J1939				Sends a signal to cause other ECUs to begin operation					
	2646	Auxiliary Output #4	J1939				Dynamically configurable, no permanent name					
	2647	Auxiliary Output #5	J1939				Dynamically configurable, no permanent name					
	2648	Maintenance Lamp	J1939				Indicates that vehicle maintenance is due					
	2649	Low Air Pressure	J1939				Activates the Low Air Pressure warning					
	2650	Fan Override Indicator	J1939				Indicates that the driver has requested manual fan operation					
	2651	Interior Lamps	J1939				Activates the cab interior lights					
	2652	Switch Diagnostic Enable	J1939				Provides power to diagnose dashboard switch problems					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2653	Headlamp Low Beam Left #1	J1939				Activates the left headlamp low beam filament (driver #1)						
	2654	Headlamp Low Beam Left #2	J1939				Activates the left headlamp low beam filament (driver #2)						
	2655	Headlamp Low Beam Right #1	J1939				Activates the right headlamp low beam filament (driver #1)						
	2656	Headlamp Low Beam Right #2	J1939				Activates the right headlamp low beam filament (driver #2)						
	2657	Engine Auxiliary Cooling System	J1939				Activates a secondary engine cooling system						
	2658	Engine Inlet Air Precleaner	J1939				Activates a pre-cleaning system for the engine inlet air						
	2659	Engine Exhaust Gas Recirculation (EGR) Mass Flow Rate	J1939-71	61450	1-2	16	Flow rate of gas through the EGR system						
	2660	Joystick 1 X-Axis Position	J1939-71	64982	1.7-2	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2661	Joystick 1 Y-Axis Position	J1939-71	64982	3.7-4	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2662	Joystick 1 Grip X-Axis Position	J1939-71	64983	1.7-2	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2663	Joystick 1 Grip Y-Axis Position	J1939-71	64983	3.7-4	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2664	Joystick 1 Theta-Axis Position	J1939-71	64983	5.7-6	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2665	Joystick 1 X-Axis Lever Right Positive Position Status	J1939-71	64982	1.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2666	Joystick 1 Y-Axis Lever Forward Positive Position Status	J1939-71	64982	3.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2667	Joystick 1 Grip X-Axis Lever Right Positive Position Status	J1939-71	64983	1.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)						
	2668	Joystick 1 Grip Y-Axis Lever Forward Positive Position Status	J1939-71	64983	3.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2669	Joystick 1 Theta-Axis Clockwise Positive Position Status	J1939-71	64983	5.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)					
	2670	Joystick 1 X-Axis Lever Left Negative Position Status	J1939-71	64982	1.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2671	Joystick 1 Y-Axis Lever Back Negative Position Status	J1939-71	64982	3.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2672	Joystick 1 Grip X-Axis Lever Left Negative Position Status	J1939-71	64983	1.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)					
	2673	Joystick 1 Grip Y-Axis Lever Back Negative Position Status	J1939-71	64983	3.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)					
	2674	Joystick 1 Theta-Axis Counter Clockwise Negative Position Status	J1939-71	64983	5.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2675	Joystick 1 X-Axis Neutral Position Status	J1939-71	64982	1.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2676	Joystick 1 Y-Axis Neutral Position Status	J1939-71	64982	3.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2677	Joystick 1 Grip X-Axis Neutral Position Status	J1939-71	64983	1.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.					
	2678	Joystick 1 Grip Y-Axis Neutral Position Status	J1939-71	64983	3.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.					
	2679	Joystick 1 Theta-Axis Neutral Position Status	J1939-71	64983	5.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2680	Joystick 1 X-Axis Detent Position Status	J1939-71	64982	5.7	2	Reports when the current joystick position is in the detent position for that axis of travel.					
	2681	Joystick 1 Y-Axis Detent Position Status	J1939-71	64982	5.5	2	Reports when the current joystick position is in the detent position for that axis of travel.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2682	Joystick 1 Grip X-Axis Detent Position Status	J1939-71	64983	7.7	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2683	Joystick 1 Grip Y-Axis Detent Position Status	J1939-71	64983	7.5	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2684	Joystick 1 Theta-Axis Detent Position Status	J1939-71	64983	7.3	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2685	Joystick 1 Button 1 Pressed Status	J1939-71	64982	6.7	2	Reports when the joystick button has been pressed.						
	2686	Joystick 1 Button 2 Pressed Status	J1939-71	64982	6.5	2	Reports when the joystick button has been pressed.						
	2687	Joystick 1 Button 3 Pressed Status	J1939-71	64982	6.3	2	Reports when the joystick button has been pressed.						
	2688	Joystick 1 Button 4 Pressed Status	J1939-71	64982	6.1	2	Reports when the joystick button has been pressed.						
	2689	Joystick 1 Button 5 Pressed Status	J1939-71	64982	7.7	2	Reports when the joystick button has been pressed.						
	2690	Joystick 1 Button 6 Pressed Status	J1939-71	64982	7.5	2	Reports when the joystick button has been pressed.						
	2691	Joystick 1 Button 7 Pressed Status	J1939-71	64982	7.3	2	Reports when the joystick button has been pressed.						
	2692	Joystick 1 Button 8 Pressed Status	J1939-71	64982	7.1	2	Reports when the joystick button has been pressed.						
	2693	Joystick 1 Button 9 Pressed Status	J1939-71	64982	8.7	2	Reports when the joystick button has been pressed.						
	2694	Joystick 1 Button 10 Pressed Status	J1939-71	64982	8.5	2	Reports when the joystick button has been pressed.						
	2695	Joystick 1 Button 11 Pressed Status	J1939-71	64982	8.3	2	Reports when the joystick button has been pressed.						
	2696	Joystick 1 Button 12 Pressed Status	J1939-71	64982	8.1	2	Reports when the joystick button has been pressed.						
	2697	Joystick 2 X-Axis Position	J1939-71	64984	1.7-2	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2698	Joystick 2 Y-Axis Position	J1939-71	64984	3.7-4	10	The position of the joystick in the relative motion of travel from the neutral position.						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2699	Joystick 2 Grip X-Axis Position	J1939-71	64985	1.7-2	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2700	Joystick 2 Grip Y-Axis Position	J1939-71	64985	3.7-4	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2701	Joystick 2 Theta-Axis Position	J1939-71	64985	5.7-6	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2702	Joystick 2 X-Axis Lever Right Positive Position Status	J1939-71	64984	1.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2703	Joystick 2 Y-Axis Lever Forward Positive Position Status	J1939-71	64984	3.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2704	Joystick 2 Grip X-Axis Lever Right Positive Position Status	J1939-71	64985	1.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)						
	2705	Joystick 2 Grip Y-Axis Lever Forward Positive Position Status	J1939-71	64985	3.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)						
	2706	Joystick 2 Theta-Axis Clockwise Positive Position Status	J1939-71	64985	5.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2707	Joystick 2 X-Axis Lever Left Negative Position Status	J1939-71	64984	1.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)						
	2708	Joystick 2 Y-Axis Lever Back Negative Position Status	J1939-71	64984	3.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)						
	2709	Joystick 2 Grip X-Axis Lever Left Negative Position Status	J1939-71	64985	1.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)						
	2710	Joystick 2 Grip Y-Axis Lever Back Negative Position Status	J1939-71	64985	3.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)						
	2711	Joystick 2 Theta-Axis Counter Clockwise Negative Position Status	J1939-71	64985	5.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2712	Joystick 2 X-Axis Neutral Position Status	J1939-71	64984	1.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.						
	2713	Joystick 2 Y-Axis Neutral Position Status	J1939-71	64984	3.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.						
	2714	Joystick 2 Grip X-Axis Neutral Position Status	J1939-71	64985	1.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.						
	2715	Joystick 2 Grip Y-Axis Neutral Position Status	J1939-71	64985	3.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.						
	2716	Joystick 2 Theta-Axis Neutral Position Status	J1939-71	64985	5.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.						
	2717	Joystick 2 X-Axis Detent Position Status	J1939-71	64984	5.7	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2718	Joystick 2 Y-Axis Detent Position Status	J1939-71	64984	5.5	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2719	Joystick 2 Grip X-Axis Detent Position Status	J1939-71	64985	7.7	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2720	Joystick 2 Grip Y-Axis Detent Position Status	J1939-71	64985	7.5	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2721	Joystick 2 Theta-Axis Detent Position Status	J1939-71	64985	7.3	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2722	Joystick 2 Button 1 Pressed Status	J1939-71	64984	6.7	2	Reports when the joystick button has been pressed.						
	2723	Joystick 2 Button 2 Pressed Status	J1939-71	64984	6.5	2	Reports when the joystick button has been pressed.						
	2724	Joystick 2 Button 3 Pressed Status	J1939-71	64984	6.3	2	Reports when the joystick button has been pressed.						
	2725	Joystick 2 Button 4 Pressed Status	J1939-71	64984	6.1	2	Reports when the joystick button has been pressed.						

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2726	Joystick 2 Button 5 Pressed Status	J1939-71	64984	7.7	2	Reports when the joystick button has been pressed.						
	2727	Joystick 2 Button 6 Pressed Status	J1939-71	64984	7.5	2	Reports when the joystick button has been pressed.						
	2728	Joystick 2 Button 7 Pressed Status	J1939-71	64984	7.3	2	Reports when the joystick button has been pressed.						
	2729	Joystick 2 Button 8 Pressed Status	J1939-71	64984	7.1	2	Reports when the joystick button has been pressed.						
	2730	Joystick 2 Button 9 Pressed Status	J1939-71	64984	8.7	2	Reports when the joystick button has been pressed.						
	2731	Joystick 2 Button 10 Pressed Status	J1939-71	64984	8.5	2	Reports when the joystick button has been pressed.						
	2732	Joystick 2 Button 11 Pressed Status	J1939-71	64984	8.3	2	Reports when the joystick button has been pressed.						
	2733	Joystick 2 Button 12 Pressed Status	J1939-71	64984	8.1	2	Reports when the joystick button has been pressed.						
	2734	Joystick 3 X-Axis Position	J1939-71	64986	1.7-2	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2735	Joystick 3 Y-Axis Position	J1939-71	64986	3.7-4	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2736	Joystick 3 Grip X-Axis Position	J1939-71	64987	1.7-2	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2737	Joystick 3 Grip Y-Axis Position	J1939-71	64987	3.7-4	10	The position of the joystick grip in the relative motion of travel from the neutral position.						
	2738	Joystick 3 Theta-Axis Position	J1939-71	64987	5.7-6	10	The position of the joystick in the relative motion of travel from the neutral position.						
	2739	Joystick 3 X-Axis Lever Right Positive Position Status	J1939-71	64986	1.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2740	Joystick 3 Y-Axis Lever Forward Positive Position Status	J1939-71	64986	3.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)						
	2741	Joystick 3 Grip X-Axis Lever Right Positive Position Status	J1939-71	64987	1.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2742	Joystick 3 Grip Y-Axis Lever Forward Positive Position Status	J1939-71	64987	3.5	2	Reports when the current joystick grip position is on the positive travel side (forward, right, clockwise, up)					
	2743	Joystick 3 Theta-Axis Clockwise Positive Position Status	J1939-71	64987	5.5	2	Reports when the current joystick position is on the positive travel side (forward, right, clockwise, up)					
	2744	Joystick 3 X-Axis Lever Left Negative Position Status	J1939-71	64986	1.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2745	Joystick 3 Y-Axis Lever Back Negative Position Status	J1939-71	64986	3.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2746	Joystick 3 Grip X-Axis Lever Left Negative Position Status	J1939-71	64987	1.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)					
	2747	Joystick 3 Grip Y-Axis Lever Back Negative Position Status	J1939-71	64987	3.3	2	Reports when the current joystick grip position is on the negative travel side (back, left, counterclockwise, down)					
	2748	Joystick 3 Theta-Axis Counter Clockwise Negative Position Status	J1939-71	64987	5.3	2	Reports when the current joystick position is on the negative travel side (back, left, counterclockwise, down)					
	2749	Joystick 3 X-Axis Neutral Position Status	J1939-71	64986	1.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2750	Joystick 3 Y-Axis Neutral Position Status	J1939-71	64986	3.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2751	Joystick 3 Grip X-Axis Neutral Position Status	J1939-71	64987	1.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.					
	2752	Joystick 3 Grip Y-Axis Neutral Position Status	J1939-71	64987	3.1	2	Reports when the current joystick grip position is in the neutral position for that axis of travel.					
	2753	Joystick 3 Theta-Axis Neutral Position Status	J1939-71	64987	5.1	2	Reports when the current joystick position is in the neutral position for that axis of travel.					
	2754	Joystick 3 X-Axis Detent Position Status	J1939-71	64986	5.7	2	Reports when the current joystick position is in the detent position for that axis of travel.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2755	Joystick 3 Y-Axis Detent Position Status	J1939-71	64986	5.5	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2756	Joystick 3 Grip X-Axis Detent Position Status	J1939-71	64987	7.7	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2757	Joystick 3 Grip Y-Axis Detent Position Status	J1939-71	64987	7.5	2	Reports when the current joystick grip position is in the detent position for that axis of travel.						
	2758	Joystick 3 Theta-Axis Detent Position Status	J1939-71	64987	7.3	2	Reports when the current joystick position is in the detent position for that axis of travel.						
	2759	Joystick 3 Button 1 Pressed Status	J1939-71	64986	6.7	2	Reports when the joystick button has been pressed.						
	2760	Joystick 3 Button 2 Pressed Status	J1939-71	64986	6.5	2	Reports when the joystick button has been pressed.						
	2761	Joystick 3 Button 3 Pressed Status	J1939-71	64986	6.3	2	Reports when the joystick button has been pressed.						
	2762	Joystick 3 Button 4 Pressed Status	J1939-71	64986	6.1	2	Reports when the joystick button has been pressed.						
	2763	Joystick 3 Button 5 Pressed Status	J1939-71	64986	7.7	2	Reports when the joystick button has been pressed.						
	2764	Joystick 3 Button 6 Pressed Status	J1939-71	64986	7.5	2	Reports when the joystick button has been pressed.						
	2765	Joystick 3 Button 7 Pressed Status	J1939-71	64986	7.3	2	Reports when the joystick button has been pressed.						
	2766	Joystick 3 Button 8 Pressed Status	J1939-71	64986	7.1	2	Reports when the joystick button has been pressed.						
	2767	Joystick 3 Button 9 Pressed Status	J1939-71	64986	8.7	2	Reports when the joystick button has been pressed.						
	2768	Joystick 3 Button 10 Pressed Status	J1939-71	64986	8.5	2	Reports when the joystick button has been pressed.						
	2769	Joystick 3 Button 11 Pressed Status	J1939-71	64986	8.3	2	Reports when the joystick button has been pressed.						
	2770	Joystick 3 Button 12 Pressed Status	J1939-71	64986	8.1	2	Reports when the joystick button has been pressed.						
	2771	Reserved for assignment											

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	2772	Reserved for assignment											
	2773	Reserved for assignment											
	2774	Reserved for assignment											
	2775	Reserved for assignment											
	2776	Reserved for assignment											
	2777	Reserved for assignment											
	2778	Reserved for assignment											
	2779	Reserved for assignment											
	2780	Reserved for assignment											
	2781	Reserved for assignment											
	2782	Reserved for assignment											
	2783	Reserved for assignment											
	2784	Reserved for assignment											
	2785	Reserved for assignment											
	2786	Reserved for assignment											
	2787	Reserved for assignment											
	2788	Reserved for assignment											
	2789	Engine Turbocharger 1 Calculated Turbine Inlet Temperature	J1939-71	64981	1-2	16	Calculated value of turbine inlet temperature based on engine operating conditions						
	2790	Engine Turbocharger 1 Calculated Turbine Outlet Temperature	J1939-71	64981	3-4	16	Calculated value of turbocharger compressor outlet air temperature.						
	2791	Engine Exhaust Gas Recirculation (EGR) Valve Control	J1939-71	64981	5-6	16	Desired percentage of maximum Exhaust Gas Recirculation (EGR) valve opening.						
	2792	Engine Variable Geometry Turbocharger (VGT) Air Control Shutoff Valve	J1939-71	64981	7.1	2	This valve prevents vehicle air from bleeding off through the VGT Control Valve when engine is not in use.						
	2793	Laser Strike Data Latency	J1939-71	65141	4-5	16	Time from laser strike to CAN message transmission.						
	2794	Absolute Laser Strike Position	J1939-71	65141	6-7	16	Laser Strike location on the survey type laser receiver.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2795	Engine Variable Geometry Turbocharger (VGT) 1 Actuator Position	J1939-71	64981	8	8	Sensor that measures the position of the variable geometry turbocharger actuator.					
	2796	Transfer Case Selector Switch	J1939-71	64980	1.1	3	Operator switch to select the condition of the transfer case.					
	2797	Engine Injector Bank 1	J1939				A collection of fuel injectors circuits that are grouped together as bank 1.					
	2798	Engine Injector Bank 2	J1939				A collection of fuel injectors circuits that are grouped together as bank 2.					
	2799	Engine Turbocharger 2 Compressor Outlet Temperature	J1939-71	64979	3-4	16	Temperature of the air exiting the turbocharger 2 compressor outlet					
	2800	Engine Turbocharger 3 Compressor Outlet Temperature	J1939-71	64979	5-6	16	Temperature of the air exiting the turbocharger 3 compressor outlet					
	2801	Engine Turbocharger 4 Compressor Outlet Temperature	J1939-71	64979	7-8	16	Temperature of the air exiting the turbocharger 4 compressor outlet					
	2802	Data Memory Usage	J1939-71	64978	3	8	The used storage capacity of the data buffer memory internal to an ECU, such as a data logger.					
	2803	Keep-Alive Battery Consumption	J1939-71	64978	1-2	16	The capacity consumed from the direct battery connection since the key was last turned off.					
	2804	FMS-standard Diagnostics Supported	J1939-71	64977	1.1	2	Status signal which indicates if the FMS Vehicle Interface (FMS Gateway) supports the handling of diagnostic messages from the vehicle network onto the FMS network.					
	2805	FMS-standard Requests Supported	J1939-71	64977	1.3	2	Status signal which indicates if the FMS Vehicle Interface (FMS Gateway) will respond to requests from the FMS device for the PGNs listed in the FMS Interface Specification.					
	2806	FMS-standard SW-version supported.	J1939-71	64977	2-5	32	Information that identifies which issue level of the FMS-standard document the software included in the FMS gateway supports.					
	2807	Engine Fuel Shutoff 2 Control	J1939-71	64914	4.5	2	Control setting for fuel shutoff 2.		128	17		
	2808	Keypad	J1939				Keypad associated with controller application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2809	Engine Air Filter 2 Differential Pressure	J1939-71	64976	1	8	Change in engine air system pressure, measured across the second air filter, due to the filter and any accumulation of solid foreign matter on or in the filter.					
	2810	Engine Air Filter 3 Differential Pressure	J1939-71	64976	2	8	Change in engine air system pressure, measured across the third air filter, due to the filter and any accumulation of solid foreign matter on or in the filter.					
	2811	Engine Air Filter 4 Differential Pressure	J1939-71	64976	3	8	Change in engine air system pressure, measured across the fourth air filter, due to the filter and any accumulation of solid foreign matter on or in the filter.					
	2812	Engine Overspeed Test	J1939-71	65252	7.7	2	The engine overspeed test signal as measured by the reporting ECM. Engine Overspeed Test is a mechanism to simulate engine overspeed situations, while operating the engine within the engine's safe operating range.					
	2813	Engine Air Shutoff Command Status	J1939-71	65252	7.5	2	State signal which indicates when the Air Shutoff driver output is being driven. Disabled means controller wants air flowing to the engine. Status of the airflow shutoff as being commanded by the ECU.					
	2814	Engine Alarm Output Command Status	J1939-71	65252	7.3	2	State signal which indicates when the Alarm driver output is being driven. Not active means the Controller has no alarm level conditions.					
	2815	Engine Alarm Acknowledge	J1939-71	65252	7.1	2	The Engine Alarm Acknowledge input signal as measured by the reporting ECM. The Engine Alarm Acknowledge is a mechanism for external acknowledgement of the SPN 2814, Engine Alarm Output Command.					
	2816	Simultaneous Upshift and Downshift	J1939				Simultaneous upshift and downshift request being indicated.					
	2817	Operator Using Clutch Pedal During Non-Recoverable Clutch Fault	J1939				The operator is still trying to use the clutch pedal even though a fault with the clutch system was already reported.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2818	Operators Rear PTO Switch On with Operator Not Present	J1939				The operators Rear PTO ON/OFF switch is on with the operator presence detection indicating the operator is NOT present.					
	2819	Park Interlock Error	J1939				A park interlock is not as expected by a controlling system.					
	2820	Operator Not Present During Reverser Command	J1939				The operators reverser control has changed with the operator presence detection indicating the operator is NOT present.					
	2821	Reverser Lever Neutral and Power Signals Conflict	J1939				There is a conflict between the Neutral and Neutral Power Interlock switches within the reverser lever.					
	2822	Reverser Lever Neither Forward or Reverse	J1939				Neither Forward or Reverse Switch indicated by Reverser Lever.					
	2823	Reverser Lever Simultaneous Forward and Reverse	J1939				Forward and Reverse Switches are indicated concurrently by the reverser lever.					
	2824	Reverser Lever Motion Interlock Conflict	J1939				Two Interlocking switches within the reverser lever are conflicting while the lever is moving.					
	2825	Reverser Lever	J1939				Reverser Lever is an operator direction control lever that is mounted separately from the shift lever/controls but still operable from the normal operators station. This may contain park and/or neutral as well as direction.					
	2826	Reverser Lever Multiple Switch Conflicts	J1939				Multiple switches within the reverser lever are conflicting.					
	2827	Power Up Without Neutral	J1939				Controller has powered-up to find shift lever/control not in either park or neutral.					
	2828	Reverser Lever In Power Zero/Direction Transition Too Long	J1939				The transition time between the Neutral Power Interlock and the Direction switches on a Reverser Lever was too long.					
	2829	Reverser Lever in Neutral/Park Transition Too Long	J1939				The transition time between Neutral and Park on a Reverser Lever was too long.					
	2830	Reversing Ratio Rationality Fault	J1939				The ratio between the operator entered speed set point values for forward and reverse is incorrect/not possible.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2831	No Carrier Speed at Start-up	J1939				The speed of the first identified carrier within a transmission was not detected following engine start.					
	2832	Operator Not in Operating Station	J1939				The Operator Presence Detection System indicates the operator is not in the correct operating station.					
	2833	Motion with Park Brake Engaged	J1939				Unexpected motion with Park Brake engaged.					
	2834	No Hydrostatic Unit Speed at Start-up	J1939				Rotation of the hydrostatic unit was not detected following engine start.					
	2835	Neutral to Gear Command Conflict	J1939				During neutral to Gear movement of the shift controls, improper switch transitions were detected.					
	2836	Battery 1 Potential 2 (Voltage), Switched (obsolete)	J1939				Electrical potential of the second circuit powered by the primary battery (battery 1) as measured at the input of the electronic control unit supplied through a switching device. This SPN is obsolete. Use SPN 158, 168 or 444.					
	2837	Identity Number	J1939-81			21	This field should be unique and non-varying with removal of power. This field is necessary to resolve any address contention. The manufacturer must provide this uniqueness among products.					
	2838	Manufacturer Code	J1939-81			11	The Manufacturer Code is an 11-bit field that indicates which company was responsible for the production of the electronic control module for which this NAME is being referenced.					
	2839	Function Instance	J1939-81			5	The Function Instance is a 5-bit field that identifies the particular occurrence of a Function on the same Vehicle System on a given network.					
	2840	ECU Instance	J1939-81			3	The ECU Instance is a 3-bit field that indicates which one of a group of electronic control modules associated with a given Function is being referenced.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2841	Function	J1939-81			8	A capability of a vehicle system having one or more ECUs that are connected to a SAE J1939 bus segment of a Vehicle System. The function value is used in the 8-bit Function field in the 64-bit NAME entity.					
	2842	Vehicle System	J1939-81			3	A subcomponent of a vehicle that includes one or more SAE J1939 segments. A Vehicle System may be made up of one or more Functions, which have ECU's that are connected to a SAE J1939 segment of the Vehicle System.					
	2843	Vehicle System Instance	J1939-81			4	Vehicle System Instance is a 4-bit field that is used to identify a particular occurrence of a particular Vehicle System within a connected network.					
	2844	Arbitrary Address Capable	J1939-81			1	Indicates whether a CA is both self-configurable and can use an arbitrary source address to resolve an address claim conflict.					
	2845	NAME of Working Set Member	J1939-81	64974	1-8	64	The identifier of the particular CA that is a member of the Working Set identified by the source address of this message.					
	2846	Industry Group	J1939-81			3	The Industry Group field identifies NAMES associated with a particular industry that uses SAE J1939, for example: On-Highway Equipment, or Agricultural Equipment.					
	2847	Address Assignment (new source address)	J1939-81	65240	9	8	The source address that is to be assigned to the CA that has the NAME corresponding to the one conveyed in the first eight bytes of this Commanded Address message.					
	2848	NAME of Controller Application (for address claimed)	J1939-81	60928	1-8	64	Identifies a particular communications function within the ECU.					
	2849	NAME of Commanded Address Target	J1939-81	65240	1-8	64	NAME used to identify Controller Application in a Commanded Address Message to associate the Controller application with an address.					
	2850	Communications Antenna	J1939				A failure in the antenna system of a communications unit.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2851	Communications Service Personal Identification Number	J1939				The Personal Identification Number (PIN) is incorrect or has been blocked.					
	2852	Communications Service Subscriber Identification Module	J1939				The hardware key, known as a Subscriber Identification Module (SIM), is either missing or incorrect.					
	2853	Communications Connection	J1939				A communications unit has established connection but no data exchanged has occurred (no other knowledge of why).					
	2854	Communications Carrier	J1939				The communications unit has suffered carrier loss.					
	2855	Communications Bit Error Rate	J1939				The data failure rate is too high for communications to keep working at the specified error rate within the specific communications unit in use.					
	2856	Communications Data Upload	J1939				A failure has occurred while sending data using a communications unit from the mobile machine to the fixed base.					
	2857	Communications Data Download	J1939				A failure has occurred while sending data using a communications unit from the fixed base to the mobile machine.					
	2858	Machine Data Configuration 1	J1939				There is a problem involving the parameter list (along with the parameter locating information) for the data structure for configuring operations within the Controller Application being communicated with.					
	2859	Machine Data Configuration 2	J1939				There is a problem involving one (or more) of the PGN(s) within the parameter list for the data structure for configuring operations within the Controller Application being communicated with.					
	2860	Machine Data Configuration 3	J1939				There is a problem involving the first output control list for the data structure for configuring operations within the Controller Application being communicated with.					
	2861	Machine Data Configuration 4	J1939				There is a problem involving the second output control list for the data structure for configuring operations within the Controller Application being communicated with.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2862	Machine Data Configuration 5	J1939				There is a problem involving the third output control list for the data structure for configuring operations within the Controller Application being communicated with.					
	2863	Front Operator Wiper Switch	J1939-71	64973	1.5	4	State of operation selected by operator switch for the Wiper in front of the operator position.					
	2864	Front Non-operator Wiper Switch	J1939-71	64973	1.1	4	State of operation selected by operator switch for the front wiper not in front of the operator position.					
	2865	Rear Wiper Switch	J1939-71	64973	2.5	4	State of operation selected by operator switch for the rear wiper.					
	2866	Front Operator Washer Switch	J1939-71	64973	6.6	3	State of operation selected by operator switch for the washer in front of the operator position.					
	2867	Front Non-operator Washer Switch	J1939-71	64973	6.3	3	State of operation selected by operator switch for the front washer not in front of the operator position.					
	2868	Rear Washer Function	J1939-71	64973	7.6	3	State of operation selected by operator switch for the rear washer.					
	2869	Front Operator Wiper Delay Control	J1939-71	64973	3	8	Time between cycles of the front operator side wiper (i.e. from end of cycle 'n' to start of cycle 'n+1') as selected by the operator control (switch, etc.) in percentage of position with maximum position corresponding to maximum delay selectable.					
	2870	Front Non-operator Wiper Delay Control	J1939-71	64973	4	8	Time between cycles of the front non-operator side wiper (i.e. from end of cycle 'n' to start of cycle 'n+1') as selected by the operator control (switch, etc.) in percentage of position with maximum position corresponding to maximum delay selectable.					
	2871	Rear Wiper Delay Control	J1939-71	64973	5	8	Time between cycles of the rear wiper (i.e. from end of cycle 'n' to start of cycle 'n+1') as selected by the operator control (switch, etc.) in percentage of position with maximum position corresponding to maximum delay selectable.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2872	Main Light Switch	J1939-71	64972	1.5	4	A 4 bit parameter to indicate the selected position of the operator's main light switch.					
	2873	Work Light Switch	J1939-71	64972	1.1	4	A 4 bit parameter to indicate the selected position of the operator's work light switch.					
	2874	High-Low Beam Switch	J1939-71	64972	2.7	2	A 2 bit parameter to indicate the selected position of the operator's high/low beam select switch.					
	2875	Hazard Light Switch	J1939-71	64972	2.5	2	A 2 bit parameter to indicate the selected position of the operator's hazard light switch.					
	2876	Turn Signal Switch	J1939-71	64972	2.1	4	A 4 bit parameter to indicate the selected position of the operator's turn signal switch.					
	2877	Operators Desired - Delayed Lamp Off Time	J1939-71	64972	4-5	16	This parameter indicates the time the operator wishes to have elapse following the Main Light switch being placed in Delayed Off position before the defined lights turn back off.					
	2878	Operators Desired Back-light	J1939-71	64972	3	8	A 8 bit parameter to indicate the level of back lighting the operator has selected for displays.					
	2879	Engine Alternate Droop Accelerator 2 Select	J1939-71	64971	3.5	4	In many applications, it is desirable that more than one droop setting be available across the range of operation. This parameter allows the selection of one to 13 droop selections.					
	2880	Engine Operator Primary Intermediate Speed Select	J1939-71	64970	1.1	4	Allows the operator to select one of 13 preprogrammed Intermediate Speed Control settings. If no speed setting is requested, the engine operates normally.					
	2881	Engine Alternate Droop Accelerator 1 Select	J1939-71	64971	3.1	4	In some applications, it may be desirable to have multiple droop settings across the range of engine operation. This parameter allows the selection of one to 13 droop selections.					
	2882	Engine Alternate Rating Select	J1939-71	64971	2	8	In some off-highway applications it may be desirable to have multiple engine ratings available for selection by the operator.					
	2883	Engine Alternate Low Idle Switch	J1939-71	64971	1.5	2	Operator switch which selects between two low idle speeds, default and alternate.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	2884	Engine Auxiliary Governor Switch	J1939-71	64971	1.1	2	This is the On/Off operation of the Auxiliary Governor feature switch. This feature is used to allow engine speed to be controlled by an auxiliary input such as pressure or tailshaft speed.					
	2885	Engine Alternate Droop Auxiliary Input Select	J1939-71	64971	4.5	4	In some applications, it may be desirable to have multiple droop settings across the range of engine operation. This parameter allows the selection of one to 13 droop selections.					
	2886	Engine Alternate Droop Remote Accelerator Select	J1939-71	64971	4.1	4	In some applications, it may be desirable to have multiple droop settings across the range of engine operation. This parameter allows the selection of one to 13 droop selections.					
	2887	Total Count of Configuration Changes Made	J1939-71	64969	1-2	16	Total number of times changes have been made to any of the configurable parameters.					
	2888	Engine Alternate Rating Select State	J1939-71	64967	2	8	This parameter reflects the control state that has been achieved based on the input from the SPN xxx. In some off-highway applications it may be desirable to have multiple engine ratings available for selection by the operator.					
	2889	Engine Alternate Droop Accelerator 1 Select State	J1939-71	64967	3.1	4	This parameter indicates which state has been selected by the controlling ECM, one to 13 droop selection states. In some off-highway applications it may be desirable to have multiple droop settings available across the range of engine operation.					
	2890	Engine Multi-Unit Sync State	J1939-71	64967	1.3	2	A master engine will "synchronize" one or more slave engines to operate at the same speed. This feature is requested by an operator switch, this parameter indicates the state of the feature as determined by the controlling ECM.					
	2891	Engine Alternate Low Idle Select State	J1939-71	64967	1.5	2	Feedback from controller on the alternate low idle select state, default and alternate.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2892	Engine Operator Primary Intermediate Speed Select State	J1939-71	64968	1.1	4	Allows the operator to select one of 13 preprogrammed Intermediate Speed Control settings. This parameter indicates which state has been selected by the controlling ECM, one to 13 ISC setting states.					
	2893	Engine Alternate Droop Accelerator 2 Select State	J1939-71	64967	3.5	4	This parameter indicates which state has been selected by the controlling ECM, one to 13 droop selection states. In some off-highway applications it may be desirable to have multiple droop settings available across the range of engine operation.					
	2894	Engine Alternate Droop Remote Accelerator Select State	J1939-71	64967	4.1	4	This parameter indicates which state has been selected by the controlling ECM, one to 13 droop selection states. In some off-highway applications it may be desirable to have multiple droop settings available across the range of engine operation.					
	2895	Engine Alternate Droop Auxiliary Input Select State	J1939-71	64967	4.5	4	This parameter indicates which state has been selected by the controlling ECM, one to 13 droop selection states. In some off-highway applications it may be desirable to have multiple droop settings available across the range of engine operation.					
	2896	Engine Auxiliary Governor State	J1939-71	64967	1.1	2	This is the Engine Auxiliary Governor feature. This feature is requested by an operator switch, this parameter indicates the state of the feature as determined by the controlling ECM.					
	2897	Operator PTO Memory Select Switch	J1939-71	65264	8.1	2	The measured switch state of the Operator PTO memory select switch.					
	2898	Engine Start Enable Device 2 Configuration	J1939-71	64966	2.5	4	This parameter indicates the start enable device type installed for start enable device 2.					
	2899	Engine Start Enable Device 1 Configuration	J1939-71	64966	2.1	4	This parameter indicates the start enable device type installed for start enable device 1.					
	2900	Transmission Engine Crank Enable	J1939-71	65098	2.5	2	State signal from the transmission indicating if the transmission's status is such that engine cranking is allowed.					

J1939 Reference												J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description					PID	MID	SID
	2901	ECU Part Number	J1939-71	64965	a	1600	The part number of the physical ECU.							
	2902	ECU Serial Number	J1939-71	64965	b	1600	The serial number of the physical ECU.							
	2903	ECU Location	J1939-71	64965	c	1600	The location of the ECU within a network.							
	2904	ECU Type	J1939-71	64965	d	1600	The type of ECU. One example of a use of the ECU type could be for classifying ECU capabilities, such as I/O.							
	2905	Transmission Range Clutch #C7 Solenoid	J1939				Transmission range clutch #C7 solenoid							
	2906	Transmission Range Clutch #C8 Solenoid	J1939				Transmission range clutch #C8 solenoid							
	2907	Transmission Axle Disconnect Clutch Valve Actuator	J1939				The axle disconnect clutch disconnects the front axle from the transmission. It is located within the transmission housing.							
	2908	Transmission Boost Pressure Valve Actuator	J1939				Transmission boost pressure valve actuator.							
	2909	Torque Converter Modulating Clutch Valve Actuator	J1939				The torque converter modulating clutch limits torque to converter circuit and transmission. It is located between the engine and transmission.							
	2910	Transmission PTO Clutch Valve Actuator	J1939				Transmission PTO clutch valve actuator controls the on/off condition of PTO Clutch Valve.							
	2911	Halt brake switch	J1939-71	61441	8.3	2	Switch signal which indicates the position of the halt brake switch.							
	2912	Hill holder mode	J1939-71	64964	1.6	3	Signal which indicates the current mode of the hill holder function.							
	2913	Halt brake mode	J1939-71	64964	1.3	3	Signal which indicates the current mode of the halt brake function.							
	2914	XBR EBI Mode	J1939-71	1024	3.1	2	The XBR EBI (Endurance Brake Integration) Mode is used as an input for the brake system to prescribe the use of endurance brakes like retarders or engine brakes.							
	2915	XBR Priority	J1939-71	1024	3.3	2	The XBR Priority is used as an input to the brake system to manage the priority of overlapping external and internal requests.							

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2916	XBR Control Mode	J1939-71	1024	3.5	2	The XBR Control Mode is used as an input to the brake system and defines how the external acceleration demand has to be realized.					
	2917	XBR System State	J1939-71	64964	2.3	2	This parameter indicates which external brake control is allowed.					
	2918	XBR Active Control Mode	J1939-71	64964	2.5	4	This parameter indicates which XBR Control Mode is executed by the brake system.					
	2919	Foundation Brake Use	J1939-71	64964	2.1	2	This parameter indicates if the brake system presently uses the foundation brakes.					
	2920	External Acceleration Demand	J1939-71	1024	1-2	16	The acceleration which the brake system is expected to realize. It is specified as an absolute acceleration in reference to the road.					
	2921	XBR Acceleration Limit	J1939-71	64964	3	8	The brake system may temporarily or generally limit the maximum brake performance available for external systems.					
	2922	Steerable Lift Axle Lowering Inhibit	J1939-71	61451	4.5	2	A signal which indicates if lowering of lifted axle is allowed or inhibited.					
	2923	Status of Steering Axle	J1939-71	61451	4.1	4	A signal which indicates different states of the steering axle					
	2924	Steering Type	J1939-71	61451	5.1	4	Indicates the different types of steering systems (ref. ECE Regulation 79 paragraph 2.5)					
	2925	Type of Steering Forces	J1939-71	61451	5.5	4	Type of Steering Forces (Ref. ECE Regulation 79 paragraph 2.5)					
	2926	Type of Steering Transmission	J1939-71	61451	6.1	4	Type of Steering Transmission (Ref. ECE Regulation 79 paragraph 2.6)					
	2927	Actual Inner wheel steering angle	J1939-71	61451	1-2	16	Signal which indicates the actual inner wheel steering angle.					
	2928	Axle Location	J1939-71	61451	3	8	To identify to which of several similar devices (such as tires or fuel tanks) the information applies.					
	2930	Hydraulic Brake System Audible Warning Command	J1939-71	64998	4.1	2	Signal which commands an audible warning by the hydraulic braking system.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2931	Hydraulic Brake Fluid Level Switch	J1939-71	64998	4.3	2	Signal which indicates whether the hydraulic fluid level in the reservoir(s) is sufficient.					
	2932	Valve State	ISO 11783-7	50688	3.1	4	The measured state of the general purpose valve. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2933	Valve State Command	ISO 11783-7			4	Command for setting the general purpose valve state. With float enabled, hydraulic fluid may flow to or from the tractor as driven by the implement.					
	2934	Valve Fail Safe Mode	ISO 11783-7	50688	3.7	2	Command for setting the fail safe mode of a general purpose valve.					
	2935	Valve Fail Safe Mode Command	ISO 11783-7			2	The measured state the fail safe mode of a general purpose valve.					
	2936	General Purpose Valve Number	ISO 11783-7			4	A numeric identification of general hydraulic valve instance within a Device identified by a NAME					
	2937	Extend Port Measured Flow	ISO 11783-7	50432	1	8	The measured flow through the extend port of an auxiliary valve of a tractor					
	2938	Retract Port Measured Flow	ISO 11783-7	50432	2	8	The measured flow through the retract port of an auxiliary valve of a tractor					
	2939	Extend Port Estimated Flow	ISO 11783-7	50688	1	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor					
	2940	Retract Port Estimated Flow	ISO 11783-7	50688	2	8	The value reported by the controller of flow through the extend port of an auxiliary valve of a tractor					
	2941	Extend Port Pressure	ISO 11783-7	50432	3-4	16	The measured nominal pressure at the extend port of an auxiliary valve of a tractor					
	2942	Retract Port Pressure	ISO 11783-7	50432	5-6	16	The measured nominal pressure at the retract port of an auxiliary valve of a tractor					
	2943	Return Port Pressure	ISO 11783-7	50432	7	8	The measured nominal pressure at the return port of an auxiliary valve of a tractor					
	2944	Port Flow Command	ISO 11783-7	50176	1	8	The command to set the flow through the extend or retract port of an auxiliary valve of a tractor					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2945	Active Shift Console Indicator	J1939-71	65098	2.3	2	Signal from transmission control unit indicating which shift console (primary or secondary) it currently considers as the active shift selector input.					
	2946	Engine Mixer Inlet Relative Humidity	J1939				Measurement of the relative humidity of air after the aftercooler and before the mixer.		128	307		
	2947	Engine Fuel Rack Position #2	J1939				Position of the fuel rack #2.		128	308		
	2948	Engine Intake Valve Actuation System Oil Pressure	J1939-71	64961	1-2	16	The gage pressure of the oil in the hydraulic system that powers the engine intake valve actuation system					
	2949	Engine Intake Valve Actuation System Oil Pressure Control Valve	J1939				The valve that controls the pressure of the oil being supplied to the engine intake valve actuation system.					
	2950	Engine Intake Valve Actuator #1	J1939				The first instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2951	Engine Intake Valve Actuator #2	J1939				The second instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2952	Engine Intake Valve Actuator #3	J1939				The third instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2953	Engine Intake Valve Actuator #4	J1939				The fourth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2954	Engine Intake Valve Actuator #5	J1939				The fifth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2955	Engine Intake Valve Actuator #6	J1939				The sixth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2956	Engine Intake Valve Actuator #7	J1939				The seventh instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2957	Engine Intake Valve Actuator #8	J1939				The eighth instance of an actuator that controls or alters the control of the engine intake valve(s).					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2958	Engine Intake Valve Actuator #9	J1939				The ninth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2959	Engine Intake Valve Actuator #10	J1939				The tenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2960	Engine Intake Valve Actuator #11	J1939				The eleventh instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2961	Engine Intake Valve Actuator #12	J1939				The twelfth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2962	Engine Intake Valve Actuator #13	J1939				The thirteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2963	Engine Intake Valve Actuator #14	J1939				The fourteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2964	Engine Intake Valve Actuator #15	J1939				The fifteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2965	Engine Intake Valve Actuator #16	J1939				The sixteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2966	Engine Intake Valve Actuator #17	J1939				The seventeenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2967	Engine Intake Valve Actuator #18	J1939				The eighteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2968	Engine Intake Valve Actuator #19	J1939				The nineteenth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2969	Engine Intake Valve Actuator #20	J1939				The twentieth instance of an actuator that controls or alters the control of the engine intake valve(s).					
	2970	Accelerator Pedal 2 Low Idle Switch	J1939-71	61443	1.7	2	Switch signal which indicates the state of the accelerator pedal 2 low idle switch.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2971	Accelerator Pedal 3 Low Idle Switch	J1939			2	Switch signal which indicates the state of the accelerator pedal 3 low idle switch.					
	2972	Accelerator Pedal Position 1 Output 2	J1939				Second output for accelerator pedal position 1					
	2973	Accelerator Pedal Position 1 Output 3	J1939			1	Third output for accelerator pedal position 1					
	2974	Accelerator Pedal Position 2 Output 2	J1939				Second output for accelerator pedal position 2					
	2975	Accelerator Pedal Position 2 Output 3	J1939			2	Third output for accelerator pedal position 2					
	2976	Accelerator Pedal Position 3 Output 2	J1939				Second output for accelerator pedal position 3					
	2977	Accelerator Pedal Position 3 Output 3	J1939			3	Third output for accelerator pedal position 3					
	2978	Estimated Engine Parasitic Losses - Percent Torque	J1939-71	65247	5	8	The calculated torque that indicates the estimated amount of torque loss due to engine parasitics, such as cooling fan, air compressor, air conditioning, etc.					
	2979	Vehicle Acceleration Rate Limit Status	J1939-71	61443	6.1	2	Status (active or not active) of the system used to limit maximum forward vehicle acceleration.					
	2980	Engine Fuel Valve 1 Outlet Absolute Pressure	J1939-71	65163	7-8	16	Absolute Pressure of gas on outlet side of the first or only fuel system control valve.					
	2981	Engine Coolant Loop 2 Pressure	J1939				This is the pressure of the low temp (secondary circuit) coolant loop.					
	2982	Engine Coolant Loop 2 Temperature	J1939				This is the temperature of the low temp (secondary circuit) coolant loop.					
	2983	Clutch Life Remaining	J1939-71	65195	4	8	Signal which indicates the actual clutch life remaining in percent. One hundred percent means the clutch is brand new and zero percent means the clutch is at the end of its life.					
	2984	Automatic traction help (load transfer)	J1939-71	53760	1.1	2	This signal enables the traction help (load transfer) in case of an active ASR function					
	2985	Transmission Shift Selector Display Mode Switch	J1939-71	256	7.7	2	Status of the operator's switch used to 'toggle' through multiple display modes of a shift selector display.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	2986	Engine Intake Valve Actuation System Oil Temperature	J1939-71	65129	5-6	16	The temperature of the oil in the hydraulic system that powers the intake valve actuation system.					
	2987	Engine will not start, pre-lube system issue	J1939				The engine is not allowed to start due to pre-lube system issues.					
	2988	Engine Coolant Diverter Valve	J1939				A valve other than the engine coolant thermostat that changes the flow of coolant in an engine.					
	2989	Combine separator speed	J1939-74			16	Speed of the Combine separator.					
	2990	Reserved for assignment										
	2991	Tailings volume	J1939-74			8	Tailings Elevator Volume measurement (as a percent of full).					
	2992	Move reel forward	J1939-74			2	Move the platform reel toward the forward part of the machine.					
	2993	Move reel aft	J1939-74			2	Move the platform reel toward the back part of the machine					
	2994	Reel raise	J1939-74			2	Raise the platform reel.					
	2995	Reel lower	J1939-74			2	Lower the platform reel.					
	2996	Header raise slow	J1939-74			2	Raise the header (slow speed mode).					
	2997	Header lower slow	J1939-74			2	Lower the header (slow speed mode).					
	2998	Header raise fast	J1939-74			2	Raise the header (fast speed mode).					
	2999	Header lower fast	J1939-74			2	Lower the header (fast speed mode).					
	3000	Tilt header left	J1939-74			2	Tilt the header down to the left.					
	3001	Tilt header right	J1939-74			2	Tilt the header down to the right.					
	3002	Header fold	J1939-74			2	Fold the header in.					
	3003	Header unfold	J1939-74			2	Unfold the header					
	3004	Draper speed increment	J1939-74			2	Increase speed of the draper.					
	3005	Draper speed decrement	J1939-74			2	Decrease speed of the draper.					
	3006	Reel speed increment	J1939-74			2	Increase the platform reel speed.					
	3007	Reel speed decrement	J1939-74			2	Decrease the platform reel speed.					
	3008	Threshing clearance increment	J1939-74			2	Increase threshing clearance.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3009	Threshing clearance decrement	J1939-74			2	Decrease threshing clearance.						
	3010	Threshing speed increment	J1939-74			2	Increase threshing speed.						
	3011	Threshing speed decrement	J1939-74			2	Decrease threshing speed.						
	3012	Product fan speed increment	J1939-74			2	Increase Product fan speed. The Product may be either the harvested crop material or the material being applied or handled.						
	3013	Product fan speed decrement	J1939-74			2	Decrease Product fan speed. The Product may be either the harvested crop material or the material being applied or handled.						
	3015	Implement fold down	J1939-74			2	Move the implement down from travel to work position						
	3016	Implement fold up	J1939-74			2	Move the implement up from work to travel position.						
	3017	RH header raise	J1939-74			2	Raise the right hand header of the system.						
	3018	LH header raise	J1939-74			2	Raise the left hand header of the system.						
	3019	Product fan engage mode	J1939-74			2	Engage/disengage the (harvested or applied) Product fan. The Product may be either the harvested crop material or the material being applied or handled.						
	3020	Augers engage mode	J1939-74			2	Engage/disengage all the augers.						
	3021	Product basket fill state	J1939-74			2	The state of the capacity of the Product storage basket.						
	3022	Augers enable mode	J1939-74			2	Enable/disable all the augers.						
	3023	Header height control mode	J1939-74			2	Header height controller engaged/disengaged.						
	3024	Header remote tether control mode	J1939-74			2	Tether control mode of the Product Handling system. Used for remote operator control of the headers.						
	3025	Lubrication control mode	J1939-74			2	Lubrication control of the Product Handling system.						
	3026	Transmission Oil Level Measurement Status	J1939-71	65272	8.5	4	Indicates if conditions are acceptable to obtain a valid transmission oil level measurement as conveyed in SPN 124 Transmission Oil Level or SPN new Transmission Oil Level High / Low.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3027	Transmission Oil Level High / Low	J1939-71	65272	7	8	Amount of current volume of transmission sump oil compared to recommended volume.					
	3028	Transmission Oil Level Countdown Timer	J1939-71	65272	8.1	4	This parameter indicates how much of the required settling time remains.					
	3029	Engine Start Inhibited, Pre-lube System Issue	J1939				The engine oil pre-lube system will not allow the engine to start.					
	3030	Transmission Torque Converter Ratio	J1939-71	61452	1-2	16	Ratio of the transmission torque converter output torque to torque converter input torque at current speed.					
	3031	Catalyst Tank Temperature	J1939-71	65110	2	8	Temperature of the reagent in the storage tank.					
	3032	Right Brake Pedal Position	J1939-74			8	Ratio of the right brake pedal position to maximum right brake pedal position. For applications with only one brake pedal use SPN 521.					
	3033	Left Brake Pedal Position	J1939-74			8	Ratio of the left brake pedal position to maximum left brake pedal position. For applications with only one brake pedal use SPN 521.					
	3034	DM22 Control Byte - Individual DTC Clear/Reset Control Byte	J1939-73	49920	1	8	DM22 Control byte is used to identify the function being performed by this message.					
	3035	DM22 - Negative Acknowledge Indicator For Individual DTC Clear	J1939-73	49920	2	8	DM22 parameter which is the Negative Acknowledge Indicator For Individual DTC Clear.					
	3036	DM22 - DTC SPN Clear	J1939-73	49920	6-8.6	19	DM22 the SPN of the DTC to Clear.					
	3037	DM22 - DTC FMI to Clear	J1939-73	49920	8.1	5	DM22 the FMI of the DTC to Clear.					
	3038	Flash Malfunction Indicator Lamp (MIL)	J1939-73	65226	2.7	2	This parameter provides the capability to flash the MIL					
	3039	Flash Red Stop Lamp (RSL)	J1939-73	65226	2.5	2	This parameter provides the capability to flash the RSL					
	3040	Flash Amber Warning Lamp (AWL)	J1939-73	65226	2.3	2	This parameter provides the capability to flash the AWL					
	3041	Flash Protect Lamp	J1939-73	65226	2.1	2	This parameter provides the capability to flash the engine protect lamp					
	3042	Requested Wheel Speed	J1939-74			16	When at rated engine speed, this is the wheel speed that the transmission will attempt to attain.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3043	Type of Passenger Count	J1939-71	64960	1	8	Used to notify transit link devices of the type of passenger counting system used in the vehicle.						
	3044	Silent Alarm Status	J1939-71	64960	3.1	2	Used to report silent alarm push button status.						
	3045	Vehicle Use Status	J1939-71	64960	3.3	2	Used to indicate the proper or unauthorized use of the vehicle.						
	3046	Transit Run Status	J1939-71	64960	3.5	2	Status of the run switch for the vehicle						
	3047	Patron Count	J1939-71	64960	2	8	Count of the number of passengers on a transit vehicle.						
	3048	Ignition Cycle Counter	J1939-73	49664	01-02	16	Count of the number of ignition cycles.						
	3049	OBD Monitoring Conditions Encountered Counts	J1939-73	49664	03-04	16	Count the number of times that the vehicle has been operated in the specified OBD monitoring conditions.						
	3050	Catalyst 1 System Monitor	J1939-73				Monitors Catalyst 1 System						
	3051	Catalyst 2 System Monitor	J1939-73				Monitors Catalyst 2 System						
	3052	Engine Misfire Monitor	J1939-73				Monitors Engine Misfires						
	3053	Engine Evaporative System Monitor	J1939-73				Monitors Engine Evaporation System						
	3054	Engine Secondary Air System Monitor (AIR Monitor)	J1939-73				Monitors engine secondary air system.						
	3055	Engine Fuel System Monitor	J1939-73				Monitors the Fuel System						
	3056	Engine Oxygen Sensor 1 Monitor	J1939-73				Monitors Engine Oxygen Sensor 1						
	3057	Engine Oxygen Sensor 2 Monitor	J1939-73				Monitors Engine Oxygen Sensor 2						
	3058	Engine Exhaust Gas Recirculation (EGR) System Monitor	J1939-73				Monitors EGR						
	3059	Engine Positive Crankcase Ventilation System Monitor	J1939-73				Monitors Engine Positive Crankcase Ventilation System						
	3060	Engine Cooling System Monitor	J1939-73				Monitors Engine Cooling System						
	3061	Engine Cold Start Emission Reduction Strategy System Monitor	J1939-73				Monitors Engine Cold Start Emission Reduction Strategy						
	3062	Air Conditioning System Component Monitor	J1939-73				Monitors Air Conditioning Component						
	3063	Direct Ozone Reduction Monitor	J1939-73				Monitors Direct Ozone Reduction						
	3064	Particulate Matter Trap Monitor	J1939-73				Monitors Particulate Matter Trap						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3065	Comprehensive Component Monitor	J1939-73				Monitors Comprehensive Component Monitor					
	3066	SPN of Applicable System Monitor	J1939-73	49664	05-07	19	Identifies the SPN of the system monitor for which Monitor ratio is being reported.					
	3067	Applicable System Monitor Numerator	J1939-73	49664	08-09	16	Identifies the number of times the vehicle has been operated such that all conditions necessary for the Applicable System Monitor to detect a malfunction have been encountered.					
	3068	Applicable System Monitor Denominator	J1939-73	49664	10-11	16	Identifies the number of times a vehicle has been operated that constitutes a driving cycle where the Applicable System Monitor could be operated per regulatory requirements.					
	3069	Distance Travelled While MIL is Activated	J1939-73	49408	1	16	The kilometers accumulated while the MIL is activated.					
	3070	Number of bytes in the Milepost Identification	J1939-71	64959	1	8	Number of bytes in the Milepost Identification					
	3071	Number of bytes in the Transit Assigned Route Identity	J1939-71	64958	2	8	Number of bytes in the Transit Assigned Route Identity					
	3072	Number of bytes in the Transit Assigned Run Identity	J1939-71	64958	3	8	Number of bytes in the Transit Assigned Run Identity					
	3073	Number of bytes in the Transit Assigned Block Identity	J1939-71	64958	4	8	Number of bytes in the Transit Assigned Block Identity					
	3074	Transit Assigned Route Identity	J1939-71	64958	5 to A	800	Identifies the transit route assigned to a specific vehicle					
	3075	Transit Assigned Run Identity	J1939-71	64958	A+1 to B	800	Identifies the transit run assigned to a specific vehicle					
	3076	Transit Assigned Block Identity	J1939-71	64958	B+1 to C	800	Identifies the transit block assigned to a specific vehicle					
	3078	Agency	J1939-71	64958	1	8	The identity of the agency involved in this transaction					
	3079	Intersection Preemption Request/Response	J1939-71	64957	1.7	2	Status of the intersection signal preemption					
	3080	Transit Route ID Usage	J1939-71	64957	1.5	2	Transit route ID usage					
	3081	Range Code Enable	J1939-71	64957	1.3	2	Range code enable					
	3082	Strobe Activation Control Status	J1939-71	64957	2.7	2	Strobe activation control status					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3083	Transit Door Enable	J1939-71	64957	2.5	2	Transit door enable					
	3084	Priority of Response Sent by Emitter	J1939-71	64957	2.1	4	Priority of response sent by emitter					
	3085	Vehicle ID	J1939-71	64957	3.4	16	Numerical designation of the vehicle					
	3086	Transmission Ready for Brake Release	J1939-71	65098	2.1	2	This parameter indicates that enough torque / motive force is available at the transmission output shaft to release all the brakes without a risk of unintentional movement in the opposite direction.					
	3087	Auxiliary Level	J1939-71	65164	5-6	16	Level measured by a sensor.					
	3088	Header height vertical rate control	J1939-74			8	Setting for the header height raise/lower control speed rate					
	3089	Header height sensitivity control	J1939-74			8	Control setting for the header height system's sensitivity to ground contour changes					
	3090	Header height setpoint change	J1939-74			8	Number of clicks of the encoder used for header height setting since last transmitted CAN message					
	3091	Header height setpoint change sequence number	J1939-74			8	Sequence number of the Header Height Setpoint Change					
	3092	Header platform height	J1939-74			16	Height of the cutting platform					
	3093	Header platform height maximum	J1939-74			16	Maximum height of the cutting platform.					
	3094	Reserved for assignment										
	3095	Reserved for assignment										
	3096	Header float pressure	J1939-74			8	Pressure of the header height system lift cylinders.					
	3097	Header float pressure maximum	J1939-74			8	Maximum pressure of the header height system lift cylinders					
	3098	Header position percent	J1939-74			8	Header height position, as a percent of maximum					
	3099	Header position percent maximum	J1939-74			8	Maximum mechanically allowable header height as a percentage of the allowed display height.					
	3101	Reserved for assignment										
	3102	Unloading Auger swing out	J1939-74			2	Swing the unloading auger out, away from vehicle					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3103	Unloading auger swing in	J1939-74			2	Swing the unloading auger in, toward the vehicle					
	3104	Unloading auger swing out-auto	J1939-74			2	Swing the unloading auger out, away from the vehicle, auto mode					
	3105	Unloading auger swing in-auto	J1939-74			2	Swing the unloading auger in, toward the vehicle, auto mode					
	3106	Side hill left tilt	J1939-74			2	Tilt the machine chassis down to the left					
	3107	Side hill right tilt	J1939-74			2	Tilt the machine chassis down to the right					
	3108	Spreader speed increment	J1939-74			2	Increase the speed of the spreader					
	3109	Spreader speed decrement	J1939-74			2	Decrease the speed of the spreader					
	3110	Precleaner open	J1939-74			2	Open the precleaner					
	3111	Precleaner close	J1939-74			2	Close the precleaner					
	3112	Open chaffer	J1939-74			2	Open the chaffer					
	3113	Close chaffer	J1939-74			2	Close the chaffer					
	3114	Open sieve	J1939-74			2	Open the sieve					
	3115	Close sieve	J1939-74			2	Close the sieve					
	3116	Move chopper vane left	J1939-74			2	Move the chopper vane towards the left side of the machine					
	3117	Move chopper vane right	J1939-74			2	Move the chopper vane towards the right side of the vehicle					
	3118	Quick stop switch	J1939-74			2	Master quick stop switch for stopping the product related systems on the vehicle.					
	3119	Unloading auger engage/disengage	J1939-74			2	Engage or disengage the (single) unloading auger					
	3120	Unloading auger fold	J1939-74			2	Fold the unloading auger					
	3121	Unloading auger unfold	J1939-74			2	Unfold the unloading auger					
	3122	Max allowable cleaning shoe travel	J1939-74			8	Max cleaning shoe travel allowed					
	3123	Right hand header height setpoint	J1939-74			8	Setpoint for the machine to control to.					
	3124	Left hand header height setpoint	J1939-74			8	Setpoint for the machine to control to.					
	3125	Left hand header height	J1939-74			8	Height of the Left hand header.					
	3126	Right hand header height	J1939-74			8	Height of the Right hand header.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3127	Header control response rate setpoint	J1939-74			8	Setpoint for the machine to control to. Rate of response to header control command changes					
	3128	Header control response rate maximum setpoint	J1939-74			8	Header control response rate maximum setpoint. Limits are usually determined by calibration process.					
	3129	Header control response rate minimum setpoint	J1939-74			8	Header control response rate minimum setpoint. Limits are usually determined by calibration process.					
	3130	Product system tank water level	J1939-74			16	Product system tank water level					
	3131	Product fan speed	J1939-74			16	Product fan speed					
	3132	Product system manifold pressure	J1939-74			8	Pressure of the liquid in the product system as measured at the manifold or main distribution point.					
	3133	Product system pump discharge pressure	J1939-74			16	Pressure of the liquid in the product system as measured at the pump discharge					
	3134	Product fan hours	J1939-74			16	Total Product fan running hours					
	3135	Right hand header height max setpoint	J1939-74			8	Maximum setpoint measured during calibration. Used to set max limit of control range.					
	3136	Right hand header height min setpoint	J1939-74			8	Minimum setpoint measured during calibration. Used to set min limit of control range.					
	3137	Left hand header height min setpoint	J1939-74			8	Minimum setpoint measured during calibration. Used to set min limit of control range.					
	3138	Left hand header height max setpoint	J1939-74			8	Maximum setpoint measured during calibration. Used to set max limit of control range.					
	3139	Right hand header unit speed	J1939-74			16	Right hand header unit speed					
	3140	Left hand header unit speed	J1939-74			16	Left hand header unit speed					
	3141	GPS differential corrections license	NMEA 2000				The license bought for use by a differential correction GPS device (from the signal supplier).					
	3142	Method, GNSS	NMEA 2000				The "Method" or "Quality" of the GPS signal.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3143	Differential source	NMEA 2000				The source of a differential correction signal used by the GPS system used to calculate ECU position					
	3144	Differential source, Secondary	NMEA 2000				The secondary source of a differential correction signal used by the GPS system used to calculate ECU position					
	3145	DGNSS fix	NMEA 2000				This represents the point in the GPS signal flow process at which the GPS signal is determined after differential correction has been applied					
	3146	PGN of message being configured	J1939-74				The PGN of the Proprietary Configurable Message (PCM) whose configuration is being identified by this Configuration Identification Message.					
	3147	Parameter being included	J1939-74				The SPN of the parameter whose location is presently being identified for grouping into the message whose PGN is in this Configuration Identification Message.					
	3148	Position of configured parameter	J1939-74				The number identifying a particular parameter's position within a configured message					
	3149	Message will be used proprietarily	J1939-74				Flag used to indicate that the message being configured is a member of the set of destination specific proprietarily configurable messages					
	3150	Message will use transport protocol	J1939-74				Flag used to indicate whether the message being configured is one that will use transport protocol.					
	3151	First parameter only being identified	J1939-74				Flag which is used to identify whether only the first parameter that will be sent within one of the Configurable Messages is being identified with a Configuration Identification Message					
	3152	Number of parameters included	J1939-74				The number of parameters, which will be grouped into the message whose PGN is in this Configuration Identification Message.					
	3153	Starting bit for this parameter	J1939-74				The bit position that the LSB of the data for the parameter is to occupy within the configurable message being identified by the PGN.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3154	Parameter to be located	J1939-74				The parameter, identified by SPN, that it is desired to locate or to initiate the transmission					
	3155	Parameter locate command	J1939-74				Used to identify the particular command that the Parameter Locate message is presently being used for.					
	3156	Blade Control Mode Switch	J1939-71	61453	1.1	4	Indicates the blade control mode switch state the user has set for the land leveling system.					
	3157	Desired Grade Offset Switch	J1939-71	61453	1.5	4	Indicates the grade offset switch state the user has set for the land leveling system					
	3158	Blade Auto Mode Command	J1939-71	61453	2.1	4	Allows other controllers to command to the primary control system what they think is the appropriate auto control mode to be engaged in, based on the information they have available to them.					
	3159	Trip Number	J1939-71	64956	04-05	16	The identity number assigned to this trip.					
	3160	Assigned Route	J1939-71	64956	08-09	16	The identity number assigned to this route.					
	3161	Pattern Number	J1939-71	64956	06-07	16	The agency defined pattern number for this trip					
	3162	Assigned Run	J1939-71	64956	10-11	16	The agency defined run number for this trip					
	3163	Assigned Block	J1939-71	64956	12-13	16	The agency defined block number for this trip					
	3164	Driver's farebox security code	J1939-71	64956	14-15	16	Security code for the farebox, numerical only.					
	3165	Fare Validity	J1939-71	64955	3.1	4	Agency defined value indicating validity of this fare					
	3166	Pass Category	J1939-71	64955	3.5	4	Agency defined value indicating the category of the passenger associated with this fare					
	3167	Initial Fare Agency	J1939-71	64955	4.1	5	Identifies where the initial fare is paid					
	3168	Transfer Sold	J1939-71	64955	8	8	Indicates that a transfer was sold or issued on this transaction including its type and/or restrictions.					
	3169	Route Number	J1939-71	64955	6, 7.1	12	The route number issuing the transfer					
	3170	Transaction Type	J1939-71	64955	1.1	4	Enumerated value representing the type of transaction completed					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3171	Passenger Type	J1939-71	64955	1.5	4	Enumerated value representing the type/class of passenger						
	3172	Type of Service	J1939-71	64955	5.1	3	The type of service provided						
	3173	Transfer Type	J1939-71	64955	5.4	5	The kind of transfer used						
	3174	Trip Direction	J1939-71	64956	02.1	4	The general direction of travel for this trip.						
	3175	Fare Presets	J1939-71	64956	03	8	Fare Presets						
	3176	Type of Fare	J1939-71	64955	2.1	4	Type of Fare						
	3177	Payment Details	J1939-71	64955	2.5	4	Payment details.						
	3178	Farebox Service Status	J1939-71	64956	01.1	2	Indicates if the farebox is in or out of service.						
	3179	Farebox Emergency Status	J1939-71	64954	1.1	2	Indicates if a farebox emergency condition exists.						
	3180	Trip Status	J1939-71	64956	01.3	3	Trip Status						
	3181	Farebox Alarm Identifier	J1939-71	64954	2.1	7	Indicates the nature of the farebox alarm condition.						
	3182	Transmission Retarder Enable Solenoid Valve	J1939				Valve that makes hydraulic fluid available for retarder use.						
	3183	Transmission Retarder Modulation Solenoid Valve	J1939				Valve used to control hydraulic retarder application.						
	3184	Transmission Lockup Clutch Pressure Indicator	J1939				Pressure being applied to the torque converter lockup clutch.						
	3185	Transmission Differential Lock Solenoid Valve	J1939				Valve used to apply pressure to differential lock.						
	3186	Transmission Differential Lock Clutch Pressure Indicator	J1939				Indicates pressure applied to differential lock clutch.						
	3187	Transmission Shift Console Data Link	J1939				Communication link between transmission and shift selector.						
	3188	XBR Message Checksum	J1939-71	1024	8.5	4	The XBR message checksum is used to verify the signal path from the demanding device to the brake controller on electronic brake systems.						
	3189	XBR Message Counter	J1939-71	1024	8.1	4	The XBR message counter is to verify the signal path from the demanding device to the brake controller on electronic brake systems.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3190	Tire Location	J1939-71	64953	1	8	Identifies which tire is associated with the parametric data in this PGN.					
	3191	Reference Tire Pressure	J1939-71	64953	2	8	Reference value of the tire pressure as basis for the tire pressure monitoring					
	3192	Tire Location	J1939-71	44544	1	8	Identifies which tire is associated with the parametric data in this PGN.					
	3193	Reference Tire Pressure Setting	J1939-71	44544	2	8	Reference value of the tire pressure setting as basis for the tire pressure monitoring					
	3194	Control Byte	J1939-31				Control byte used to identify the type of request or response for the Network message.					
	3195	Number of Ports	J1939-31				Number of ports in this NIECU					
	3196	Uptime since last power-on reset	J1939-31				Uptime (in seconds) since last power on reset.					
	3197	Average Messages Filtered per Second	J1939-31				Average number of messages filtered per second					
	3198	Average Messages Forwarded per Second	J1939-31				Average number of messages forwarded per second					
	3199	Average Messages Received per Second	J1939-31				Average number of messages received per second					
	3200	Number of Messages with Excessive Transit Delay Time	J1939-31				Number of messages with an excessive transit delay time					
	3201	Number of Messages lost due to Buffer Overflow	J1939-31				Number of message lost due to buffer overflow					
	3202	Average Transit Delay Time	J1939-31				Average transit delay time (in milliseconds).					
	3203	Maximum Transit Delay Time	J1939-31				Maximum transit delay time (in milliseconds).					
	3204	Maximum Messages Filtered per Second	J1939-31				Maximum number of messages filtered per second					
	3205	Maximum Messages Forwarded per Second	J1939-31				Maximum number of messages forwarded per second					
	3206	Maximum Messages Received per Second	J1939-31				Maximum number of messages received per second					
	3207	Number of Filter Database Entries	J1939-31				Number of filter database entries					
	3208	Maximum Filter Database Size	J1939-31				Maximum filter database size (in bytes)					
	3209	Buffer Size	J1939-31				Buffer size (in bytes)					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3210	Parameter Number	J1939-31				The ordinal number of a filter database parameter					
	3211	SA_List	J1939-31				A list of source addresses of ECUs that an NIECU "sees" in the segment beyond a port					
	3212	PGN_List	J1939-31				A list of parameter group numbers for filtering					
	3213	Filter_Mode	J1939-31				The method of filtering for a particular Port_pair: Pass (list) or Block (list)					
	3214	Port_Pair	J1939-31				An ordered pair of ports.					
	3215	Prohibit air suspension control	J1939-71	53760	7.5	2	This parameter is an external request to the air suspension control system to prohibit all air suspension control.					
	3216	Aftertreatment 1 Intake NOx	J1939-71	61454	1	16	The amount of combined NO and NO2 in the exhaust entering the aftertreatment system measured by a NOx sensor at the aftertreatment intake, represented in NOx molecule parts per million non-NOx molecules in exhaust bank 1.					
	3217	Aftertreatment 1 Intake %O2	J1939-71	61454	3	16	The actual oxidation factor (%O2) of the gas within the exhaust stream. This value is measured by a sensor at the aftertreatment intake in exhaust bank 1.					
	3218	Aftertreatment 1 Intake Gas Sensor Power In Range	J1939-71	61454	5.1	2	Indicates that the power supplied to the aftertreatment intake gas sensor, either NOx or O2, is within the manufacturer's specification in exhaust bank 1.					
	3219	Aftertreatment 1 Intake Gas Sensor at Temperature	J1939-71	61454	5.3	2	Indicates that the heater element of the aftertreatment intake gas sensor, either NOx or O2, is within the manufacturer's specified range for accurate measurements in exhaust bank 1.					
	3220	Aftertreatment 1 Intake NOx Reading Stable	J1939-71	61454	5.5	2	Indicates that the NOx reading of the aftertreatment intake NOx sensor is stable as determined by the manufacturer's control software in exhaust bank 1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3221	Aftertreatment 1 Intake Wide-Range % O2 Reading Stable	J1939-71	61454	5.7	2	Indicates that the %O2 reading of the aftertreatment intake gas sensor, either NOx or O2, is stable as determined by the manufacturer's control software in exhaust bank 1.					
	3222	Aftertreatment 1 Intake Gas Sensor Heater Preliminary FMI	J1939-71	61454	6.1	5	Used to identify the applicable J1939-73 FMI detected in the heater of the intake exhaust gas sensor, either NOx or O2, by the manufacturer's sensor control software in exhaust bank 1.					
	3223	Aftertreatment 1 Intake Gas Sensor Heater Control	J1939-71	61454	6.6	2	Indicates the heater status in the warm-up process. Upon receiving a power-up command, the gas sensor ramps up according to a manufacturer defined profile.					
	3224	Aftertreatment 1 Intake NOx Sensor Preliminary FMI	J1939-71	61454	7.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment intake NOx sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3225	Aftertreatment 1 Intake Oxygen Sensor Preliminary FMI	J1939-71	61454	8.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment intake oxygen sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3226	Aftertreatment 1 Outlet NOx	J1939-71	61455	1	16	The amount of combined NO and NO2 in the exhaust entering the aftertreatment system measured by a NOx sensor at the aftertreatment outlet, represented in NOx molecule parts per million non-NOx molecules in exhaust bank 1.					
	3227	Aftertreatment 1 Outlet %O2	J1939-71	61455	3	16	The actual oxidation factor (%O2) of the gas within the exhaust stream. This value is measured by a sensor at the aftertreatment outlet in exhaust bank 1.					
	3228	Aftertreatment 1 Outlet Gas Sensor Power In Range	J1939-71	61455	5.1	2	Indicates that the power supplied to the aftertreatment outlet gas sensor, either NOx or O2, is within the manufacturer's specification in exhaust bank 1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3229	Aftertreatment 1 Outlet Gas Sensor at Temperature	J1939-71	61455	5.3	2	Indicates that the heater element of the aftertreatment outlet gas sensor, either NOx or O ₂ , is within the manufacturer's specified range for accurate measurements in exhaust bank 1.					
	3230	Aftertreatment 1 Outlet NOx Reading Stable	J1939-71	61455	5.5	2	Indicates that the NOx reading of the aftertreatment outlet NOx sensor is stable as determined by the manufacturer's control software in exhaust bank 1.					
	3231	Aftertreatment 1 Outlet Wide-Range %O ₂ Reading Stable	J1939-71	61455	5.7	2	Indicates that the %O ₂ reading of the aftertreatment outlet gas sensor, either NOx or O ₂ , is stable as determined by the manufacturer's control software in exhaust bank 1.					
	3232	Aftertreatment 1 Outlet Gas Sensor Heater Preliminary FMI	J1939-71	61455	6.1	5	Used to identify the applicable J1939-73 FMI detected in the heater of the outlet exhaust gas sensor, either NOx or O ₂ , by the manufacturer's sensor control software in exhaust bank 1.					
	3233	Aftertreatment 1 Outlet Gas Sensor Heater Control	J1939-71	61455	6.6	2	Indicates the heater status in the warm-up process. Upon receiving a power-up command, the gas sensor ramps up according to a manufacturer defined profile.					
	3234	Aftertreatment 1 Outlet NOx Sensor Preliminary FMI	J1939-71	61455	7.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment outlet NOx sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3235	Aftertreatment 1 Outlet Oxygen Sensor Preliminary FMI	J1939-71	61455	8.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment outlet oxygen sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3236	Aftertreatment 1 Exhaust Gas Mass Flow	J1939-71	65247	6-7	16	Measured/calculated exhaust gas mass upstream of the aftertreatment system in exhaust bank 1 and 2.					
	3237	Aftertreatment 1 Intake Dew Point	J1939-71	65247	8.1	2	Indicates that the temperature on the intake side of the aftertreatment system has exceeded the dew point, as estimated by the ECM in exhaust bank 1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3238	Aftertreatment 1 Exhaust Dew Point	J1939-71	65247	8.3	2	Indicates that the temperature on the exhaust side of the aftertreatment has exceeded the dew point, as estimated by the ECM in exhaust bank 1.					
	3239	Aftertreatment 2 Intake Dew Point	J1939-71	65247	8.5	2	Indicates that the temperature on the intake side of the aftertreatment system has exceeded the dew point, as estimated by the ECM in exhaust bank 2.					
	3240	Aftertreatment 2 Exhaust Dew Point	J1939-71	65247	8.7	2	Indicates that the temperature on the exhaust side of the aftertreatment has exceeded the dew point, as estimated by the ECM in exhaust bank 2.					
	3241	Aftertreatment 1 Exhaust Gas Temperature 1	J1939-71	64948	1	16	The reading from the exhaust gas temperature sensor located farthest upstream in the aftertreatment system in exhaust bank 1.					
	3242	Aftertreatment 1 Particulate Trap Intake Gas Temperature	J1939-71	64948	3	16	Temperature of engine combustion byproducts entering the particulate trap in exhaust bank 1.					
	3243	Aftertreatment 1 Exhaust Gas Temperature 1 Preliminary FMI	J1939-71	64948	5.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 1 sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3244	Aftertreatment 1 Particulate Trap Intake Gas Temperature Preliminary FMI	J1939-71	64948	6.1	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap intake gas temperature sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3245	Aftertreatment 1 Exhaust Gas Temperature 3	J1939-71	64947	1	16	The reading from the exhaust gas temperature sensor located farthest downstream in the aftertreatment system in exhaust bank 1.					
	3246	Aftertreatment 1 Particulate Trap Outlet Gas Temperature	J1939-71	64947	3	16	Temperature of engine combustion byproducts leaving the particulate trap exhaust in exhaust bank 1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3247	Aftertreatment 1 Exhaust Gas Temperature 3 Preliminary FMI	J1939-71	64947	5.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 3 sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3248	Aftertreatment 1 Particulate Trap Outlet Exhaust Gas Temperature Preliminary FMI	J1939-71	64947	6.1	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap outlet gas temperature sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3249	Aftertreatment 1 Exhaust Gas Temperature 2	J1939-71	64946	1	16	The reading from the exhaust gas temperature sensor located midstream of the other two temperature sensors in the aftertreatment system in exhaust bank 1.					
	3250	Aftertreatment 1 Particulate Trap Intermediate Gas Temperature	J1939-71	64946	3	16	Temperature of engine combustion byproducts at a mid-point in the particulate trap in exhaust bank 1.					
	3251	Aftertreatment 1 Particulate Trap Differential Pressure	J1939-71	64946	5	16	Exhaust differential pressure measured between the intake and exhaust of a particulate trap in exhaust bank 1.					
	3252	Aftertreatment 1 Exhaust Gas Temperature 2 Preliminary FMI	J1939-71	64946	7.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 2 sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3253	Aftertreatment 1 Particulate Trap Delta Pressure Preliminary FMI	J1939-71	64946	7.6	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap differential pressure sensor by the manufacturer's sensor control software in exhaust bank 1.					
	3254	Aftertreatment 1 Particulate Trap Intermediate Gas Temperature Preliminary FMI	J1939-71	64946	8.3	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap intermediate gas temperature sensor by the manufacturer's sensor control software in exhaust bank 1.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3255	Aftertreatment 2 Intake NOx	J1939-71	61456	1	16	The amount of combined NO and NO ₂ in the exhaust entering the aftertreatment system measured by a NOx sensor at the aftertreatment intake, represented in NOx molecule parts per million non-NOx molecules in exhaust bank 2					
	3256	Aftertreatment 2 Intake %O ₂	J1939-71	61456	3	16	The actual oxidation factor (%O ₂) of the gas within the exhaust stream. This value is measured by a sensor at the aftertreatment intake in exhaust bank 2.					
	3257	Aftertreatment 2 Intake Gas Sensor Power In Range	J1939-71	61456	5.1	2	Indicates that the power supplied to the aftertreatment intake gas sensor, either NOx or O ₂ , is within the manufacturer's specification in exhaust bank 2.					
	3258	Aftertreatment 2 Intake Gas Sensor at Temperature	J1939-71	61456	5.3	2	Indicates that the heater element of the aftertreatment intake gas sensor, either NOx or O ₂ , is within the manufacturer's specified range for accurate measurements in exhaust bank 2.					
	3259	Aftertreatment 2 Intake NOx Reading Stable	J1939-71	61456	5.5	2	Indicates that the NOx reading of the aftertreatment intake NOx sensor is stable as determined by the manufacturer's control software in exhaust bank 2.					
	3260	Aftertreatment 2 Intake Wide-Range % O ₂ Reading Stable	J1939-71	61456	5.7	2	Indicates that the %O ₂ reading of the aftertreatment intake gas sensor, either NOx or O ₂ , is stable as determined by the manufacturer's control software in exhaust bank 2.					
	3261	Aftertreatment 2 Intake Gas Sensor Heater Preliminary FMI	J1939-71	61456	6.1	5	Used to identify the applicable J1939-73 FMI detected in the heater of the intake exhaust gas sensor, either NOx or O ₂ , by the manufacturer's sensor control software in exhaust bank 2.					
	3262	Aftertreatment 2 Intake Gas Sensor Heater Control	J1939-71	61456	6.6	2	Indicates the heater status in the warm-up process. Upon receiving a power-up command, the gas sensor ramps up according to a manufacturer defined profile in exhaust bank 2.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3263	Aftertreatment 2 Intake NOx Sensor Preliminary FMI	J1939-71	61456	7.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment intake NOx sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3264	Aftertreatment 2 Intake Oxygen Sensor Preliminary FMI	J1939-71	61456	8.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment intake oxygen sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3265	Aftertreatment 2 Outlet NOx	J1939-71	61457	1-2	16	The amount of combined NO and NO2 in the exhaust entering the aftertreatment system measured by a NOx sensor at the aftertreatment outlet, represented in NOx molecule parts per million non-NOx molecules in exhaust bank 2.					
	3266	Aftertreatment 2 Outlet %O2	J1939-71	61457	3-4	16	The actual oxidation factor (%O2) of the gas within the exhaust stream. This value is measured by a sensor at the aftertreatment outlet in exhaust bank 2.					
	3267	Aftertreatment 2 Outlet Gas Sensor Power In Range	J1939-71	61457	5.1	2	Indicates that the power supplied to the aftertreatment outlet gas sensor, either NOx or O2, is within the manufacturer's specification in exhaust bank 2.					
	3268	Aftertreatment 2 Outlet Gas Sensor at Temperature	J1939-71	61457	5.3	2	Indicates that the heater element of the aftertreatment outlet gas sensor, either NOx or O2, is within the manufacturer's specified range for accurate measurements in exhaust bank 2.					
	3269	Aftertreatment 2 Outlet NOx Reading Stable	J1939-71	61457	5.5	2	Indicates that the NOx reading of the aftertreatment outlet NOx sensor is stable as determined by the manufacturer's control software in exhaust bank 2.					
	3270	Aftertreatment 2 Outlet Wide-Range % O2 Reading Stable	J1939-71	61457	5.7	2	Indicates that the %O2 reading of the aftertreatment outlet gas sensor, either NOx or O2, is stable as determined by the manufacturer's control software in exhaust bank 2.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3271	Aftertreatment 2 Outlet Gas Sensor Heater Preliminary FMI	J1939-71	61457	6.1	5	Used to identify the applicable J1939-73 FMI detected in the heater of the outlet exhaust gas sensor, either NOx or O2, by the manufacturer's sensor control software in exhaust bank 2.					
	3272	Aftertreatment 2 Outlet Gas Sensor Heater Control	J1939-71	61457	6.6	2	Indicates the heater status in the warm-up process. Upon receiving a power-up command, the gas sensor ramps up according to a manufacturer defined profile in exhaust bank 2.					
	3273	Aftertreatment 2 Outlet NOx Sensor Preliminary FMI	J1939-71	61457	7.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment outlet NOx sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3274	Aftertreatment 2 Outlet Oxygen Sensor Preliminary FMI	J1939-71	61457	8.1	5	Used to identify the applicable J1939-73 FMI detected in the aftertreatment outlet oxygen sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3275	Aftertreatment 2 Exhaust Gas Temperature 1	J1939-71	64945	1	16	The reading from the exhaust gas temperature sensor located farthest upstream in the aftertreatment system in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs AT11, ATO1, EEC3, AT12, ATO2 and ATM1.)					
	3276	Aftertreatment 2 Particulate Trap Intake Gas Temperature	J1939-71	64945	3	16	Temperature of engine combustion byproducts entering the particulate trap in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs AT11, ATO1, EEC3, AT12, ATO2 and ATM1.)					
	3277	Aftertreatment 2 Exhaust Gas Temperature 1 Preliminary FMI	J1939-71	64945	5.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 1 sensor by the manufacturer's sensor control software in exhaust bank 2					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3278	Aftertreatment 2 Particulate Trap Intake Gas Temperature Preliminary FMI	J1939-71	64945	6.1	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap intake gas temperature sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3279	Aftertreatment 2 Exhaust Gas Temperature 3	J1939-71	64944	1	16	The reading from the exhaust gas temperature sensor located farthest downstream in the aftertreatment system in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs ATI1, ATO1, EEC3, ATI2, ATO2 and ATM1.)					
	3280	Aftertreatment 2 Particulate Trap Outlet Gas Temperature	J1939-71	64944	3	16	Temperature of engine combustion byproducts leaving the particulate trap exhaust in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs ATI1, ATO1, EEC3, ATI2, ATO2 and ATM1.)					
	3281	Aftertreatment 2 Exhaust Gas Temperature 3 Preliminary FMI	J1939-71	64944	5.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 3 sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3282	Aftertreatment 2 Particulate Trap Exhaust Gas Temperature Preliminary FMI	J1939-71	64944	6.1	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap outlet gas temperature sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3283	Aftertreatment 2 Exhaust Gas Temperature 2	J1939-71	64943	1	16	The reading from the exhaust gas temperature sensor located midstream of the other two temperature sensors in the aftertreatment system in exhaust bank 2.					
	3284	Aftertreatment 2 Particulate Trap Intermediate Gas Temperature	J1939-71	64943	3	16	Temperature of engine combustion byproducts at a mid-point in the particulate trap in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs ATI1, ATO1, EEC3, ATI2, ATO2 and ATM1.)					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3285	Aftertreatment 2 Particulate Trap Differential Pressure	J1939-71	64943	5	16	Exhaust differential pressure measured between the intake and exhaust of a particulate trap in exhaust bank 2. (For a single exhaust bank system, refer to parameters in PGNs AT11, ATO1, EEC3, AT12, ATO2 and ATM1.)					
	3286	Aftertreatment 2 Exhaust Gas Temperature 2 Preliminary FMI	J1939-71	64943	7.1	5	Used to identify the applicable J1939-73 FMI detected in the exhaust gas temperature 2 sensor by the manufacturer's sensor control software in exhaust bank 2					
	3287	Aftertreatment 2 Particulate Trap Delta Pressure Preliminary FMI	J1939-71	64943	7.6	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap differential pressure sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3288	Aftertreatment 2 Particulate Trap Intermediate Gas Temperature Preliminary FMI	J1939-71	64943	8.3	5	Used to identify the applicable J1939-73 FMI detected in the particulate trap intermediate gas temperature sensor by the manufacturer's sensor control software in exhaust bank 2.					
	3289	Transmission Requested Gear Feedback	J1939-71	65098	4	8	Feedback of the SPN 525 Transmission Requested Gear input as received from the shift selector, ABS or engine via PGN 256, Transmission Control #1 (TC1)					
	3290	Address Acknowledged	J1939-21				Address of the device being acknowledged					
	3291	Address Negative Acknowledgement	J1939-21				Address of the device being negatively acknowledged					
	3292	Address Access Denied	J1939-21				Address of the device being told access is denied					
	3293	Address Busy	J1939-21				Address of the device being told the responder is busy					
	3294	Distance Since Diagnostic Trouble Codes Cleared	J1939-73	49408	3	16	Distance accumulated since DTCs were cleared (via an external test equipment or possibly, a battery disconnect).					
	3295	Minutes Run by Engine While MIL Activated	J1939-73	49408	5	16	Accumulated count (in minutes) if the MIL is activated (on).					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3296	Time Since Diagnostic Trouble Codes Cleared	J1939-73	49408	7	16	Time accumulated since DTCs were cleared (via an external test equipment or possibly, a battery disconnect).					
	3297	SPN Supported	J1939-73	64950	1	19	This parameter defines the SPN(s) that is/are supported for the freeze frame and/or data stream information.					
	3298	SPN Support Type	J1939-73	64950	3.1	2	This parameter defines whether the applicable parameter (that is the SPN) is supported in the freeze frame, the data stream or both the freeze frame and data stream.					
	3299	SPN Data Length	J1939-73	64950	4	8	The number of data bytes associated with the SPN in the Freeze Frame.					
	3300	Expanded Freeze Frame Length	J1939-73	64951	1	8	The Freeze Frame Length is the length plus the number of bytes to convey the data of all parameters (SPNs) in Freeze Frame.					
	3301	Time Since Engine Start	J1939-73	64952	1	16	RUNTM shall increment while the engine is running. It shall freeze if the engine stalls. RUNTM shall be reset to zero during every control module power-up and when entering the key-on, engine off position.					
	3302	Number of Warm-Ups Since DTCs Cleared	J1939-73	64952	3	8	Number of warm-up cycles since all DTCs were cleared (via an external test equipment or possibly, a battery disconnect).					
	3303	Continuously Monitored Systems Enabled/Completed Status	J1939-73	64952	4		This parameter identifies the continuously monitored system enable/completed support and status.					
	3304	Non-Continuously Monitored Systems Enabled Status	J1939-73	64952	5		Enable status of non-continuous monitors this monitoring cycle.					
	3305	Non-Continuously Monitored Systems Complete Status	J1939-73	64952	7		Completion status of non-continuous monitors this monitoring cycle. Each bit identifies whether a particular test is complete for a given controller.					
	3306	Variable Valve Timing and/or Control (VVT)	J1939-73				A system used to influence the intake and outlet of gases to and from a cylinder.					
	3307	Fifth Wheel Error Status	J1939-71	64942	1.1	4	Fifth wheel error state.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3308	Fifth Wheel Vertical Force	J1939-71	61458	1	16	The amount of load being applied to the fifth wheel by the trailer.					
	3309	Fifth Wheel Drawbar Force	J1939-71	61458	3	16	Fifth wheel drawbar force, with the trailer held stationary a positive force is generated by the vehicle pulling forward.					
	3310	Fifth Wheel Roll Moment	J1939-71	61458	5	16	Fifth Wheel Roll Moment bipolar force.					
	3311	Fifth Wheel Slider Position	J1939-71	64942	2	8	Slider position measurement. Zero equals fully back position.					
	3312	Fifth Wheel Lock Ready to Couple Indicator	J1939-71	64942	1.5	2	Indicator - lock open and ready to couple					
	3313	Fifth Wheel Lock Couple Status Indicator	J1939-71	64942	1.7	2	Indicator - Safe couple or Unsafe/Unknown					
	3314	Fifth Wheel Release Control	J1939-71	64980	2.1	2	Forward Release Control, solenoid open or closed.					
	3315	Fifth Wheel Release Control Security Lockout	J1939-71	64980	2.3	2	Security Lockout enabled.					
	3316	Fifth Wheel Slider Lock Indicator	J1939-71	64942	3.1	2	Slider Lock Indicator showing locked.					
	3317	Fifth Wheel Roll Warning Indicator	J1939-71	61458	7.1	2	Binary indicator triggered by Roll greater than preset limit					
	3318	Pitch Angle	J1939-71	61459	1	16	The angle between the vehicle x-axis and the ground plane.					
	3319	Roll Angle	J1939-71	61459	3	16	The angle between the vehicle y-axis and the ground plane.					
	3322	Pitch Rate	J1939-71	61459	5	16	Pitch rate is the rate-of-change of the pitch angle over time, where the pitch angle vector is in the direction of travel of the vehicle.					
	3323	Pitch Angle Figure of Merit	J1939-71	61459	7.1	2	Figure of merit for pitch angle measurement.					
	3324	Roll Angle Figure of Merit	J1939-71	61459	7.3	2	Figure of merit for roll angle measurement.					
	3325	Pitch Rate Figure of Merit	J1939-71	61459	7.5	2	Figure of merit for the pitch rate measurement.					
	3326	Pitch and Roll Compensated	J1939-71	61459	7.7	2	Compensated mode for the pitch and roll measurements. Compensation is the use of multiple sensors together to enhance the output of pitch and roll measurements.					
	3327	Roll and Pitch Measurement Latency	J1939-71	61459	8	8	The estimated measurement latency of the measurement.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3328	Manufacturer Specific Information (PropA2_PDU1)	J1939-21	126720	1-8	14280						
	3329	Message Selection Control	J1939-74	64941	1	8	Used to identify all configurable messages.					
	3330	PGN of Configurable Message Desired	J1939-74	64941	2-4	24	To identify the configurable message whose configuration is being requested.					
	3331	Blade Rotation Angle	J1939-71	61460	3-4	16	The blade rotation angle measurement around the yaw (z-axis).					
	3332	Blade Rotation Angle Figure of Merit	J1939-71	61460	6.3	2	Figure of merit for blade rotation measurement.					
	3333	Feederhouse Height	J1939-74			16	The height of the Feederhouse as measured from the ground to the bottom of the Feederhouse					
	3334	Left Blade Control Mode Operator Control	J1939-71	61453	2.5	4	This parameter indicates the left blade control mode operator control state the user has set for the land leveling system					
	3335	Right Blade Control Mode Operator Control	J1939-71	61453	3.1	4	This parameter indicates the right blade control mode operator control state the user has set for the land leveling system					
	3336	Left Desired Blade Offset Operator Control	J1939-71	61453	3.5	4	This parameter indicates the left blade offset operator control state the user has set for the land leveling system.					
	3337	Right Desired Blade Offset Operator Control	J1939-71	61453	4.1	4	This parameter indicates the right blade offset operator control state the user has set for the land leveling system.					
	3338	Side-shift Blade Control Mode Operator Control	J1939-71	61453	4.5	4	This parameter indicates the side-shift blade control mode operator control state the user has set for the land leveling system.					
	3339	Side-shift Desired Blade Offset Operator Control	J1939-71	61453	5.1	4	This parameter indicates the side-shift blade control mode operator control state the user has set for the land leveling system.					
	3340	Engine Charge Air Cooler 1 Inlet Pressure	J1939-71	64938	1	8	Pressure of air at inlet to 1st or only charge air cooler, from multiple first stage turbochargers being cooled and feeding multiple second stage turbochargers.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3341	Engine Charge Air Cooler 2 Inlet Pressure	J1939-71	64938	2	8	Pressure of air at inlet to 2nd charge air cooler, from multiple first stage turbochargers being cooled and feeding multiple second stage turbochargers.					
	3342	Engine Coolant Pump Differential Pressure	J1939-71	64938	3	8	The differential pressure measured across the input and output of the engine coolant pump.					
	3343	Engine Centrifugal Oil Filter speed	J1939-71	64938	4-5	16	The speed of a rotating (centrifugal) engine oil filter.					
	3344	Support Variable Rate TSC1 Message	J1939-71	65251	35	8	This parameter indicates which TSC1 transmission rates are supported by the engine ECU in addition to the required 10ms transmission rate for temporary powertrain control purposes.					
	3345	Support TSC1 Control Purpose Group 1	J1939-71	65251	36	8	This parameter indicates which TSC1 control purposes are supported in Group 1 of 4.					
	3346	Support TSC1 Control Purpose Group 2	J1939-71	65251	37	8	This parameter indicates which TSC1 control purposes are supported in Group 2 of 4.					
	3347	Support TSC1 Control Purpose Group 3	J1939-71	65251	38	8	This parameter indicates which TSC1 control purposes are supported in Group 3 of 4.					
	3348	Support TSC1 Control Purpose Group 4	J1939-71	65251	39	8	This parameter indicates which TSC1 control purposes are supported in Group 4 of 4.					
	3349	TSC1 Transmission Rate	J1939-71	0	5.1	3	Indicates the transmission rate at which the sending device will transmit the TSC1 message					
	3350	TSC1 Control Purpose	J1939-71	0	5.4	5	State signal which indicates which control mode the sending device is using to generate the TSC1 command.					
	3351	Engine Exhaust Pressure Regulator Vent Valve Control	J1939				Exhaust Pressure Regulator Vent Valve Control is the output that is used to control the valve position .					
	3352	Engine Exhaust Pressure Regulator Vent Valve Position	J1939				Provides feedback to the Regulator Vent Valve Exhaust Pressure Position.					
	3353	Alternator 1 Status	J1939-71	65237	3.1	2	Alternator 1 operational status.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3354	Alternator 2 Status	J1939-71	65237	3.3	2	Alternator 2 operational status.					
	3355	Alternator 3 Status	J1939-71	65237	3.5	2	Alternator 3 operational status.					
	3356	Alternator 4 Status	J1939-71	65237	3.7	2	Alternator 4 operational status.					
	3357	Actual Maximum Available Engine - Percent Torque	J1939-71	61443	7	8	This is the maximum amount of torque that the engine can immediately deliver as a percentage of the reference engine torque (SPN 544).					
	3358	Engine Exhaust Gas Recirculation Inlet Pressure	J1939-71	64961	3	8	EGR inlet gage pressure is measured after the EGR cooler and before the EGR valve.					
	3359	Transmission Oil Filter Restriction Switch	J1939-71	64917	1.1	2	This switch indicates whether the transmission oil filter is clogged.					
	3360	Catalyst Tank Controller	J1939				The catalyst tank controller has the ability to read attributes of the catalyst reagent such as the catalyst reagent level ,catalyst reagent temperature and catalyst reagent quality					
	3361	Catalyst Dosing Unit	J1939				The catalyst dosing unit is a device that mixes the catalyst reagent and air, and delivers a metered quantity of this mixture to the exhaust stream					
	3362	Catalyst Dosing Unit Input Lines	J1939				The catalyst dosing unit is a device that mixes the catalyst reagent and air, such that it contains an input line from the air tank and an input line from the catalyst reagent tank.					
	3363	Catalyst Tank Heater	J1939				The catalyst tank heater warms the catalyst reagent in the catalyst tank example: ensures the reagent is above freezing point.					
	3364	Catalyst Tank Reagent Quality	J1939				Measures the quality of the catalyst reagent in the catalyst tank					
	3365	Relative Blade Height	J1939-71	61460	1-2	16	The measured vertical distance from a fixed location on the machine blade to a ground-based reference					
	3366	Relative Blade Height and Blade Rotation Angle Measurement Latency	J1939-71	61460	5	8	The estimated measurement latency of the measurement.					
	3367	Relative Blade Height Figure of Merit	J1939-71	61460	6.1	2	Figure of merit for blade height measurement.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3368	Network Transceiver Status 1	J1939-71	64937	1	8	Indicates the status of the transceiver for the wireless communications network type					
	3369	Network Service Status 1	J1939-71	64937	2	8	Indicates the status of the Service for the wireless communications network type					
	3370	Network Antenna Status 1	J1939-71	64937	3	8	Indicates the status of the antenna for the wireless communications network type					
	3371	Network Signal Strength 1	J1939-71	64937	4	8	Indicates the signal strength for the wireless communications network type.					
	3372	Wireless Communication Network Type 1	J1939-71	64937	5	8	Type of Wireless Communication Network					
	3374	Generator Excitation Ripple Current	J1939				Reports excessive generator excitation ripple current					
	3375	Voltage Regulator Load Compensation Mode	J1939-75	64935	1.1	3	State signal indicating the voltage regulator load compensation mode.					
	3376	Voltage Regulator VAr/Power Factor operating mode	J1939-75	64935	1.4	3	State signal indicating the operating mode for the Voltage regulator VAr/Power Factor					
	3377	Voltage Regulator Underfrequency Compensation enabled	J1939-75	64935	1.7	2	State signal indicating the operating mode for underfrequency compensation.					
	3378	Voltage Regulator Soft Start State	J1939-75	64935	2.1	2	State signal indicating the mode of the Voltage regulator soft start function					
	3379	Voltage Regulator Enabled	J1939-75	64935	2.3	2	State signal indicating the Voltage Regulator is enabled					
	3380	Generator Excitation Field Voltage	J1939-75	64934	1-2	16	Measured signal that represents the generator excitation field voltage.					
	3381	Generator Excitation Field Current	J1939-75	64934	3-4	16	Measured signal that represents the generator excitation field current.					
	3382	Generator Output Voltage Bias Percentage	J1939-75	64934	5-6	16	Measured signal that represents the voltage bias percentage of the generator output voltage being requested by external to the voltage regulator					
	3383	Requested Generator Total AC Reactive Power	J1939-75	61461	1-4	32	The total reactive power requested to be delivered by the generator					
	3384	Requested Generator Overall Power Factor	J1939-75	61461	5-6	16	The requested average power factor of the generator.					
	3385	Requested Generator Overall Power Factor Lagging	J1939-75	61461	7.1	2	The requested lead/lag status for the generator average AC power factor					
	3386	Requested Generator Average Line-Line AC RMS Voltage	J1939-75	61468	1-4	32	The requested average AC RMS voltage to be delivered by the generator					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3387	Engine Cylinder 1 Combustion Status	J1939-71	61462	1.1	2	This parameter is used to indicate state of combustion in engine cylinder #1					
	3388	Engine Cylinder 2 Combustion Status	J1939-71	61462	1.3	2	This parameter is used to indicate state of combustion in engine cylinder #2					
	3389	Engine Cylinder 3 Combustion Status	J1939-71	61462	1.5	2	This parameter is used to indicate state of combustion in engine cylinder #3					
	3390	Engine Cylinder 4 Combustion Status	J1939-71	61462	1.7	2	This parameter is used to indicate state of combustion in engine cylinder #4					
	3391	Engine Cylinder 5 Combustion Status	J1939-71	61462	2.1	2	This parameter is used to indicate state of combustion in engine cylinder #5					
	3392	Engine Cylinder 6 Combustion Status	J1939-71	61462	2.3	2	This parameter is used to indicate state of combustion in engine cylinder #6					
	3393	Engine Cylinder 7 Combustion Status	J1939-71	61462	2.5	2	This parameter is used to indicate state of combustion in engine cylinder #7					
	3394	Engine Cylinder 8 Combustion Status	J1939-71	61462	2.7	2	This parameter is used to indicate state of combustion in engine cylinder #8					
	3395	Engine Cylinder 9 Combustion Status	J1939-71	61462	3.1	2	This parameter is used to indicate state of combustion in engine cylinder #9					
	3396	Engine Cylinder 10 Combustion Status	J1939-71	61462	3.3	2	This parameter is used to indicate state of combustion in engine cylinder #10					
	3397	Engine Cylinder 11 Combustion Status	J1939-71	61462	3.5	2	This parameter is used to indicate state of combustion in engine cylinder #11					
	3398	Engine Cylinder 12 Combustion Status	J1939-71	61462	3.7	2	This parameter is used to indicate state of combustion in engine cylinder #12					
	3399	Engine Cylinder 13 Combustion Status	J1939-71	61462	4.1	2	This parameter is used to indicate state of combustion in engine cylinder #13					
	3400	Engine Cylinder 14 Combustion Status	J1939-71	61462	4.3	2	This parameter is used to indicate state of combustion in engine cylinder #14					
	3401	Engine Cylinder 15 Combustion Status	J1939-71	61462	4.5	2	This parameter is used to indicate state of combustion in engine cylinder #15					
	3402	Engine Cylinder 16 Combustion Status	J1939-71	61462	4.7	2	This parameter is used to indicate state of combustion in engine cylinder #16					
	3403	Engine Cylinder 17 Combustion Status	J1939-71	61462	5.1	2	This parameter is used to indicate state of combustion in engine cylinder #17					
	3404	Engine Cylinder 18 Combustion Status	J1939-71	61462	5.3	2	This parameter is used to indicate state of combustion in engine cylinder #18					
	3405	Engine Cylinder 19 Combustion Status	J1939-71	61462	5.5	2	This parameter is used to indicate state of combustion in engine cylinder #19					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3406	Engine Cylinder 20 Combustion Status	J1939-71	61462	5.7	2	This parameter is used to indicate state of combustion in engine cylinder #20					
	3407	Engine Cylinder 21 Combustion Status	J1939-71	61462	6.1	2	This parameter is used to indicate state of combustion in engine cylinder #21					
	3408	Engine Cylinder 22 Combustion Status	J1939-71	61462	6.3	2	This parameter is used to indicate state of combustion in engine cylinder #22					
	3409	Engine Cylinder 23 Combustion Status	J1939-71	61462	6.5	2	This parameter is used to indicate state of combustion in engine cylinder #23					
	3410	Engine Cylinder 24 Combustion Status	J1939-71	61462	6.7	2	This parameter is used to indicate state of combustion in engine cylinder #24					
	3411	Status 2 of doors	J1939-71	65102	1.7	2	Composite indication of all bus door statuses. Enabled means the bus doors are able to be automatically opened or closed.					
	3412	Lock Status of Door 1	J1939-71	64933	1.1	2	Lock status of bus door 1					
	3413	Open Status of Door 1	J1939-71	64933	1.3	2	Open status of bus door 1					
	3414	Enable Status of Door 1	J1939-71	64933	1.5	2	Enable status of bus door 1					
	3415	Lock Status of Door 2	J1939-71	64933	1.7	2	Lock status of bus door 2					
	3416	Open Status of Door 2	J1939-71	64933	2.1	2	Open status of bus door 2					
	3417	Enable Status of Door 2	J1939-71	64933	2.3	2	Enable status of bus door 2					
	3418	Lock Status of Door 3	J1939-71	64933	2.5	2	Lock status of bus door 3					
	3419	Open Status of Door 3	J1939-71	64933	2.7	2	Open status of bus door 3					
	3420	Enable Status of Door 3	J1939-71	64933	3.1	2	Enable status of bus door 3					
	3421	Lock Status of Door 4	J1939-71	64933	3.3	2	Lock status of bus door 4					
	3422	Open Status of Door 4	J1939-71	64933	3.5	2	Open status of bus door 4					
	3423	Enable Status of Door 4	J1939-71	64933	3.7	2	Enable status of bus door 4					
	3424	Lock Status of Door 5	J1939-71	64933	4.1	2	Lock status of bus door 5					
	3425	Open Status of Door 5	J1939-71	64933	4.3	2	Open status of bus door 5					
	3426	Enable Status of Door 5	J1939-71	64933	4.5	2	Enable status of bus door 5					
	3427	Lock Status of Door 6	J1939-71	64933	4.7	2	Lock status of bus door 6					
	3428	Open Status of Door 6	J1939-71	64933	5.1	2	Open status of bus door 6					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3429	Enable Status of Door 6	J1939-71	64933	5.3	2	Enable status of bus door 6					
	3430	Lock Status of Door 7	J1939-71	64933	5.5	2	Lock status of bus door 7					
	3431	Open Status of Door 7	J1939-71	64933	5.7	2	Open status of bus door 7					
	3432	Enable Status of Door 7	J1939-71	64933	6.1	2	Enable status of bus door 7					
	3433	Lock Status of Door 8	J1939-71	64933	6.3	2	Lock status of bus door 8					
	3434	Open Status of Door 8	J1939-71	64933	6.5	2	Open status of bus door 8					
	3435	Enable Status of Door 8	J1939-71	64933	6.7	2	Enable status of bus door 8					
	3436	Lock Status of Door 9	J1939-71	64933	7.1	2	Lock status of bus door 9					
	3437	Open Status of Door 9	J1939-71	64933	7.3	2	Open status of bus door 9					
	3438	Enable Status of Door 9	J1939-71	64933	7.5	2	Enable status of bus door 9					
	3439	Lock Status of Door 10	J1939-71	64933	7.7	2	Lock status of bus door 10					
	3440	Open Status of Door 10	J1939-71	64933	8.1	2	Open status of bus door 10					
	3441	Enable Status of Door 10	J1939-71	64933	8.3	2	Enable status of bus door 10					
	3442	Network Transceiver Status 2	J1939-71	64936	1	8	Indicates the status of the transceiver for the wireless communications network type					
	3443	Network Service Status 2	J1939-71	64936	2	8	Indicates the status of the Service for the wireless communications network type					
	3444	Network Antenna Status 2	J1939-71	64936	3	8	Indicates the status of the antenna for the wireless communications network type					
	3445	Network Signal Strength 2	J1939-71	64936	4	8	Indicates the signal strength for the wireless communications network type.					
	3446	Wireless Communication Network Type 2	J1939-71	64936	5	8	Type of Wireless Communication Network					
	3447	Remote PTO preprogrammed speed control switch #2	J1939-71	65264	8.3	2	Switch signal which indicates that the remote PTO toggle switch #2 is in the enabled (ON) position.					
	3448	Auxiliary Input Ignore Switch	J1939-71	65264	8.5	2	Switch signal which overrides other switch input's ability to disable an engine's operating condition.					
	3451	Engine Multiple Cylinder Spark Voltage	J1939				The spark voltage of a spark event measured on multiple cylinders.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3452	Enable Switch – Transmission input shaft PTO 1	J1939-71	64932	1.7	2	Status of the operator's switch or other input which indicates the desire for engaging the first PTO drive mounted on the transmission case.					
	3453	Enable Switch – Transmission input shaft PTO 2	J1939-71	64932	1.5	2	Status of the operator's switch or other input which indicates the desire for engaging the second PTO drive mounted on the transmission case.					
	3454	Enable Switch – Transmission output shaft PTO	J1939-71	64932	1.3	2	Status of the operator's switch or other input which indicates the desire for engaging the PTO drive mounted on the transmission output shaft.					
	3455	Enable Switch – Transfer case output shaft PTO	J1939-71	64932	1.1	2	Status of the operator's switch or other input which indicates the desire for engaging the PTO drive mounted on the output shaft of the transfer case.					
	3456	Engagement Consent – Transmission input shaft PTO 1	J1939-71	64932	3.7	2	Status of the transmission controller's consent to engage the first or sole PTO drive mounted on the transmission case.					
	3457	Engagement Consent – Transmission input shaft PTO 2	J1939-71	64932	3.5	2	Status of the transmission controller's consent to engage the second PTO drive mounted on the transmission case.					
	3458	Engagement Consent – Transmission output shaft PTO	J1939-71	64932	3.3	2	Status of the transmission controller's consent to engage the PTO drive connected to the transmission output shaft.					
	3459	Engagement Consent – Transfer case output shaft PTO	J1939-71	64932	3.1	2	Status of the transmission controller's consent to engage the PTO drive connected to the transfer case output shaft.					
	3460	Engagement Status – Transmission input shaft PTO 1	J1939-71	64932	5.7	2	Reports if this specific PTO drive is engaged.					
	3461	Engagement Status – Transmission input shaft PTO 2	J1939-71	64932	5.5	2	Reports if this specific PTO drive is engaged.					
	3462	Engagement Status – Transmission output shaft PTO	J1939-71	64932	5.3	2	Reports if this specific PTO drive is engaged.					
	3463	Engagement Status – Transfer case output shaft PTO	J1939-71	64932	5.1	2	Reports if this specific PTO drive is engaged.					
	3464	Engine Throttle Actuator 1 Control Command	J1939-71	61466	1-2	16	The control command to throttle actuator 1					
	3465	Engine Throttle Actuator 2 Control Command	J1939-71	61466	3-4	16	The control command to throttle actuator 2					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3466	Engine Fuel Valve 2 Inlet Absolute Pressure	J1939-71	64930	1-2	16	Absolute pressure of gas on inlet side of the second fuel system control valve.					
	3467	Engine Gas 2 Mass Flow Rate	J1939-71	64930	3-4	16	Gas mass flow rate delivered to an engine through its second fuel control system					
	3468	Engine Fuel Temperature 2	J1939-71	64930	5-6	8	Temperature 2 of fuel (or gas).					
	3469	Engine Fuel Valve 2 Outlet Absolute Pressure	J1939-71	64930	7-8	16	Absolute pressure of gas on outlet side of the second fuel system control valve.					
	3470	Engine Turbocharger Compressor Control	J1939-71	64931	1-2	16	The control command to a compressor bypass actuator.					
	3471	Aftertreatment 1 Fuel Pressure Control Actuator	J1939				Diagnostic SPN for the actuator controlling aftertreatment 1 fuel pressure					
	3472	Aftertreatment 1 Air Pressure Control Actuator	J1939				Diagnostic SPN for the actuator controlling aftertreatment 1 air pressure					
	3473	Aftertreatment 1 Failed to Ignite	J1939				Indicates that aftertreatment 1 has failed to ignite enough times to warrant triggering a diagnostic event.					
	3474	Aftertreatment 1 Loss of Ignition	J1939				Indicates that aftertreatment 1 has lost ignition enough times to warrant triggering a diagnostic event.					
	3475	Aftertreatment 2 Fuel Pressure Control Actuator	J1939				Diagnostic SPN for the actuator controlling aftertreatment 2 fuel pressure					
	3476	Aftertreatment 2 Air Pressure Control Actuator	J1939				Diagnostic SPN for the actuator controlling aftertreatment 2 air pressure					
	3477	Aftertreatment 2 Failed to Ignite	J1939				Indicates that aftertreatment 2 has failed to ignite enough times to warrant triggering a diagnostic event.					
	3478	Aftertreatment 2 Loss of Ignition	J1939				Indicates that aftertreatment 2 has lost ignition enough times to warrant triggering a diagnostic event.					
	3479	Aftertreatment 1 Fuel Pressure Control	J1939-71	64929	5-6	16	Position that the controller is commanding the aftertreatment 1 fuel pressure control to maintain.					
	3480	Aftertreatment 1 Fuel Pressure 1	J1939-71	64929	1-2	16	First fuel pressure measurement for the aftertreatment 1 system					
	3481	Aftertreatment 1 Fuel Rate	J1939-71	64929	3-4	16	Rate of fuel being delivered to aftertreatment 1 for regeneration					
	3482	Aftertreatment 1 Fuel Enable Actuator	J1939-71	64929	7-7	2	Indicates whether aftertreatment 1 fuel enable actuator is on or off					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3483	Aftertreatment 1 Regeneration Status	J1939-71	64929	7.5	2	Indicates whether regeneration is active or inactive in aftertreatment 1					
	3484	Aftertreatment 1 Ignition	J1939-71	64929	7.3	2	Indicates whether aftertreatment 1 ignition circuit is energized by the ECM.					
	3485	Aftertreatment 1 Supply Air Pressure	J1939-71	64927	1-2	16	Pressure of the supply air for aftertreatment 1					
	3486	Aftertreatment 1 Purge Air Pressure	J1939-71	64927	3-4	16	Pressure of the purge air supply for aftertreatment 1					
	3487	Aftertreatment 1 Air Pressure Control	J1939-71	64927	5-6	16	Position that the controller is commanding the aftertreatment 1 air pressure control to maintain.					
	3488	Aftertreatment 1 Air Pressure Actuator Position	J1939-71	64927	7.1	8	Position of the aftertreatment 1 air pressure actuator as measured by a position feedback sensor.					
	3489	Aftertreatment 1 Air Enable Actuator	J1939-71	64927	8.7	2	Indicates whether aftertreatment 1 air enable actuator is on or off					
	3490	Aftertreatment 1 Purge Air Actuator	J1939-71	64927	8.5	2	Indicates whether aftertreatment 1 purge air actuator is on or off					
	3491	Aftertreatment 1 Atomization Air Actuator	J1939-71	64927	8.3	2	Indicates whether aftertreatment 1 atomization air actuator is on or off					
	3492	Aftertreatment 1 Air System Relay	J1939-71	64927	8.1	2	Indicates whether aftertreatment 1 air system relay is on or off					
	3493	Aftertreatment 2 Fuel Pressure Control	J1939-71	64928	5-6	16	Position that the controller is commanding the aftertreatment 2 fuel pressure control to maintain.					
	3494	Aftertreatment 2 Fuel Pressure	J1939-71	64928	1-2	16	Pressure of the fuel for Aftertreatment 2.					
	3495	Aftertreatment 2 Fuel Rate	J1939-71	64928	3-4	16	Rate of fuel being delivered to aftertreatment 2 for regeneration					
	3496	Aftertreatment 2 Fuel Enable Actuator	J1939-71	64928	7.7	2	Indicates whether aftertreatment 2 fuel enable actuator is on or off					
	3497	Aftertreatment 2 Regeneration Status	J1939-71	64928	7.5	2	Indicates whether regeneration is active or inactive in aftertreatment 2					
	3498	Aftertreatment 2 Ignition	J1939-71	64928	7.3	2	Indicates whether aftertreatment 2 ignition circuit is energized by the ECM.					
	3499	Aftertreatment 2 Supply Air Pressure	J1939-71	64926	1-2	16	Pressure of the supply air for aftertreatment 2					
	3500	Aftertreatment 2 Purge Air Pressure	J1939-71	64926	3-4	16	Pressure of the purge air supply for aftertreatment 2					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3501	Aftertreatment 2 Air Pressure Control	J1939-71	64926	5-6	16	Position that the controller is commanding the aftertreatment 2 air pressure control to maintain.					
	3502	Aftertreatment 2 Air Pressure Actuator Position	J1939-71	64926	7.1	8	Position of the aftertreatment 2 air pressure actuator as measured by a position feedback sensor.					
	3503	Aftertreatment 2 Air Enable Actuator	J1939-71	64926	8.7	2	Indicates whether aftertreatment 2 air enable actuator is on or off					
	3504	Aftertreatment 2 Purge Air Actuator	J1939-71	64926	8.5	2	Indicates whether aftertreatment 2 purge air actuator is on or off					
	3505	Aftertreatment 2 Atomization Air Actuator	J1939-71	64926	8.3	2	Indicates whether aftertreatment 2 atomization air actuator is on or off					
	3506	Aftertreatment 2 Air System Relay	J1939-71	64926	8.1	2	Indicates whether aftertreatment 2 air system relay is on or off					
	3507	TECU ECU_PWR relay	J1939				The high current ECU PWR relay for the ECU PWR distribution on the Implement bus as controlled by the Tractor ECU (TECU).					
	3508	TECU PWR Relay	J1939				The high current PWR relay for the PWR distribution on the Implement bus as controlled by the Tractor ECU (TECU).					
	3509	Sensor supply voltage 1	J1939-71	64925	1-2	16	Sensor ECU supply voltage 1					
	3510	Sensor supply voltage 2	J1939-71	64925	3-4	16	Sensor ECU supply voltage 2					
	3511	Sensor supply voltage 3	J1939-71	64925	5-6	16	Sensor ECU supply voltage 3					
	3512	Sensor supply voltage 4	J1939-71	64925	7-8	16	Sensor ECU supply voltage 4					
	3513	Sensor supply voltage 5	J1939-71	64924	1-2	16	Sensor ECU supply voltage 5					
	3514	Sensor supply voltage 6	J1939-71	64924	3-4	16	Sensor ECU supply voltage 6					
	3515	Catalyst Reagent Temperature 2	J1939-71	64923	1	8	Temperature of the catalyst reagent at the device measuring reagent quality					
	3516	Catalyst Reagent Concentration	J1939-71	64923	2	8	A measure of the concentration of urea in water.					
	3517	Catalyst Tank Level 2	J1939-71	65110	3-4	16	The measure of the reagent level in the catalyst tank.					
	3518	Catalyst Reagent Conductivity	J1939-71	64923	3	8	A measure of the conductivity of the reagent or fluid at the sensor.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3519	Catalyst Reagent Temperature 2 Preliminary FMI	J1939-71	64923	4.1	5	Used to identify the applicable J1939-73 FMI that applies to the most significant failure of the catalyst temperature sensor.					
	3520	Catalyst Reagent Properties Preliminary FMI	J1939-71	64923	5.1	5	Used to identify the applicable J1939-73 FMI that applies to the most significant failure of the catalyst reagent properties sensor.					
	3521	Catalyst Reagent Type	J1939-71	64923	6.1	4	This parameter indicates what reagent is in the tank.					
	3522	Aftertreatment 1 Total Fuel Used	J1939-71	64920	01-04	32	Total amount of fuel used by aftertreatment device 1 over the lifetime of the device.					
	3523	Aftertreatment 1 Total Regeneration Time	J1939-71	64920	05-08	32	Total amount of time that aftertreatment device 1 has been regenerating over the lifetime of the device.					
	3524	Aftertreatment 1 Total Disabled Time	J1939-71	64920	09-12	32	Total amount of time that aftertreatment 1 regeneration has been manually disabled.					
	3525	Aftertreatment 1 Total Number of Active Regenerations	J1939-71	64920	13-16	32	Total number of active regenerations by aftertreatment device 1 over the lifetime of the device.					
	3526	Aftertreatment 2 Total Fuel Used	J1939-71	64921	01-04	32	Total amount of fuel used by aftertreatment device 2 over the lifetime of the device.					
	3527	Aftertreatment 2 Total Regeneration Time	J1939-71	64921	05-08	32	Total amount of time that aftertreatment device 2 has been regenerating over the lifetime of the device.					
	3528	Aftertreatment 2 Total Disabled Time	J1939-71	64921	09-12	32	Total amount of time that aftertreatment 2 regeneration has been manually disabled.					
	3529	Aftertreatment 2 Total Number of Active Regenerations	J1939-71	64921	13-16	32	Total number of active regenerations by aftertreatment device 2 over the lifetime of the device.					
	3530	Aftertreatment 1 Regeneration Manually Disabled	J1939				Indicates that aftertreatment device 1 has been manually disabled by a service technician.					
	3531	Aftertreatment 2 Regeneration Manually Disabled	J1939				Indicates that aftertreatment device 2 has been manually disabled by a service technician.					
	3532	Catalyst Tank Level Preliminary FMI	J1939-71	65110	5.1	5	Used to identify the applicable J1939-73 FMI that applies to the most significant failure of the catalyst tank level sensor.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3533	Transmission Oil Level Switch	J1939-71	64917	1.3	2	This switch indicates whether transmission oil level is full or empty.					
	3534	Brake Torque Output Axle 1 Left	J1939				Brake torque output on wheel brake axle 1 left					
	3535	Brake Torque Output Axle 1 Right	J1939				Brake torque output on wheel brake axle 1 right					
	3536	Brake Torque Output Axle 2 Left	J1939				Brake torque output on wheel brake axle 2 left					
	3537	Brake Torque Output Axle 2 Right	J1939				Brake torque output on wheel brake axle 2 right					
	3538	Brake Torque Output Axle 3 Left	J1939				Brake torque output on wheel brake axle 3 left					
	3539	Brake Torque Output Axle 3 Right	J1939				Brake torque output on wheel brake axle 3 right					
	3540	Reference Ground Connection	J1939				The reference ground is an additional ground connection in order to supervise the main ground connection					
	3541	Brake Light Relay	J1939				Relay to control the brake lights.					
	3542	Requested Engine Control Mode	J1939-75	64915	1.1	4	This parameter is used to request a change to the engine control mode. This is a status parameter.					
	3543	Engine Operating State	J1939-71	64914	1.1	4	This parameter is used to indicate the current state, or mode, of operation by the engine. Such as, engine stopped, pre-start, starting, etc.					
	3544	Time Remaining in Engine Operating State	J1939-71	64914	2-3	16	This parameter is used to indicate the time remaining in the current engine operating state, based on the state defined in the SPN "Engine Operating State". For the states in which time remaining is not applicable, use 65535 (\$FFFF).					
	3545	Generator Circuit Breaker Status	J1939-75	64913	1.1	3	This parameter indicates the measured state of the generator circuit breaker.					
	3546	Utility Circuit Breaker Status	J1939-75	64913	1.4	3	This parameter indicates the measured state of the utility circuit breaker.					
	3547	Automatic Transfer Switch Status	J1939-75	64913	2.1	3	This parameter indicates the measured state of the automatic transfer switch.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3548	Engine Waste Oil Reservoir Level	J1939-71	65130	4	8	Level of crankcase blowby emulsion collected by a container. Normalized to percent, 0% represents completely empty and 100% represents completely full.	128		310		
	3549	Engine Oil-Filter Outlet Pressure	J1939-71	65130	5	8	Oil pressure (gauge) measured just downstream of oil filter. Used in conjunction with SPN1208 (pre-filter oil pressure) to determine oil filter health.					
	3550	Engine Oil Priming Pump Switch	J1939-71	65130	6.1	2	Switch input for activating the engine oil priming pump.					
	3551	Engine Oil Priming State	J1939-71	65130	6.3	2	Determination of whether or not the engine is (or has recently been) sufficiently lubricated for starting purposes.					
	3552	Engine Oil Pre-Heated State	J1939-71	65130	6.5	2	Indicates whether the engine oil pre-heated sufficiently for starting purposes.					
	3553	Engine Coolant Pre-heated State	J1939-71	65130	6.7	2	Indicates whether the engine coolant is pre-heated sufficiently for starting purposes.					
	3554	Engine Ventilation Status	J1939-71	65130	7.1	3	Engine ventilation control states.					
	3555	Ambient Air Density	J1939				The density of the ambient air					
	3556	Aftertreatment Fuel Injector 1	J1939				The injector/doser used to inject fuel into the aftertreatment system					
	3557	Parking Brake Red Warning Signal	J1939-71	65274	4.3	2	This parameter commands the Parking Brake red optical warning signal.					
	3558	AETC Data Collection Standard	J1939-71	64912	1.1	4	Indicates the standardized method by which torque data was obtained for the Advertised Engine Torque Curve (AETC).					
	3559	Number of AETC data points	J1939-71	64912	1.5	4	Indicates the number of speed / torque data points contained in the Advertised Engine Torque Curve broadcast (AETC).					
	3560	AETC Speed Value	J1939-71	64912	a	16	Engine speed value of the data points in PGN 64912 – Advertised Engine Torque Curve (AETC).					
	3561	AETC Torque value	J1939-71	64912	b	16	Engine torque value of the data points in PGN 64912 – Advertised Engine Torque Curve (AETC).					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3562	Engine Intake Manifold #2 Pressure	J1939-71	64976	4	8	The gage pressure measurement of the air intake manifold for bank #2 or the second air intake manifold.					
	3563	Engine Intake Manifold #1 Absolute Pressure	J1939-71	64976	5	8	The absolute pressure measurement of the air intake manifold.					
	3564	Lane Departure Warning Enable Command	J1939-71	43264	1.1	2	Command to enable/disable Lane Departure Indication					
	3565	Lane Departure Left	J1939-71	61447	1.1	2	Indicates that the middle of vehicle departs the lane on the left side. The parameter indicates that the vehicle is changing the lane to the left.					
	3566	Lane Departure Right	J1939-71	61447	1.3	2	Indicates that the middle of vehicle departs the lane on the right side. The parameter indicates that the vehicle is changing the lane to the right.					
	3567	Generator Control Not In Automatic Start State	J1939-75	64915	1.5	2	This parameter indicates whether or not the generator set is in a condition to automatically start up and provide power. If not, this status parameter is in the ACTIVE state.					
	3568	Generator Not Ready to Automatically Parallel State	J1939-75	64915	1.7	2	This parameter indicates whether or not all systems required to start the engine and close to the bus are prepared to operate automatically. If not, the generator is not ready to automatically parallel, and the status parameter is in the ACTIVE state.					
	3569	Generator Neutral Earth Fault	J1939				Some means identifies that an imbalance between the current in the live phase(s) and neutral from the generator exceeds a threshold.					
	3570	Generator Load Neutral Earth Leakage	J1939				Some means identifies that an imbalance between the current in the live phase(s) and neutral from the load has exceeded a threshold.					
	3571	Generator Circuit Breaker Opening Time	J1939				As determined by the genset control, it will attempt to close or open a circuit breaker depending on the operational mode and system status.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3572	Generator Circuit Breaker Closing Time	J1939				As determined by the genset control, it will attempt to close or open a circuit breaker depending on the operational mode and system status.					
	3573	Utility Circuit Breaker Opening Time	J1939				As determined by the genset control, it will attempt to close or open a circuit breaker depending on the operational mode and system status.					
	3574	Utility Circuit Breaker Closing Time	J1939				As determined by the genset control, it will attempt to close or open a circuit breaker depending on the operational mode and system status.					
	3575	Utility to Generator Transfer Time	J1939				When the genset control commands the generator(s) to pick up load, it transfers the load from the utility to the generator(s).					
	3576	Generator to Utility Transfer Time	J1939				When the genset control commands the generator(s) to drop load, it transfers the load to the utility, and then it disconnects.					
	3577	Loss of Electric Utility Grid	J1939				When the voltage drops below a predetermined level for a specified amount of time, this condition becomes active.					
	3578	Generator to Bus Synchronization Time	J1939				This parameter indicates the time between the command to synchronize to the bus being issued and successful synchronization.					
	3579	Generator to Bus Phase Sequence Mismatch	J1939				This parameter indicates a phase sequence mismatch between the generator and the bus.					
	3580	Generator Soft Unload Time	J1939				This parameter indicates the time between the command to soft unload and the completion of the ramp down to an unloaded condition.					
	3581	Modbus Data Link	J1939				Identifies the action to be performed on the Modbus communications port.					
	3582	Utility Power Supply	J1939				110/120V (60Hz) or 220/240V (50Hz) alternating current power supply for engine AC auxiliary devices.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3583	Common AC Auxiliaries Breaker	J1939				This parameter covers designs where several independent AC auxiliary control devices each have their own breakers, but the controlling ECM only receives a single breaker tripped feedback indication if any one of these breakers is tripped.					
	3584	Fire Detected	J1939				A sensor has detected the presence of a fire at or near the engine.					
	3585	Engine Emergency Shutdown Switch	J1939				An emergency shutdown switch that is activated by the operator for immediate engine shutdown.					
	3587	Ether Hold Control	J1939				This control circuit is used to hold the ether valve in the open position, causing ether injection to continue.					
	3588	Ether Start Control	J1939				This control circuit is used to initially open the ether valve and begin ether flow.					
	3589	Engine Oil Priming Pump Control	J1939-71	64914	5-1	2	This control is used to activate a pump that lubricates the engine, particularly prior to initial engine startup.					
	3590	Generator Total Percent kW	J1939-75	64911	1-2	16	This parameter reports the generator total AC power, as a percentage of rated power.					
	3591	Generator Total Percent kVA	J1939-75	64911	3-4	16	This parameter reports the generator total AC apparent power, as a percentage of rated power.					
	3592	Generator Total Percent kVAR	J1939-75	64911	5-6	16	This parameter reports the generator total AC reactive power, as a percentage of rated power.					
	3593	Generator Total kVAR Hours Export	J1939-75	64910	1-4	32	This parameter reports the cumulative total AC reactive energy exported from the generator.					
	3594	Generator Total kVAR Hours Import	J1939-75	64910	5-8	32	This parameter reports the cumulative total AC reactive energy imported to the generator.					
	3595	Utility Total kVAR Hours Export	J1939-75	64909	1-4	32	This parameter reports the cumulative total AC reactive energy exported from the utility.					
	3596	Utility Total kVAR Hours Import	J1939-75	64909	5-8	32	This parameter reports the cumulative total AC reactive energy imported to the utility.					
	3597	ECU Power Output Supply Voltage #1	J1939-71	65165	3-4	16	The first power output from an ECM					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3598	ECU Power Output Supply Voltage #2	J1939-71	65165	5-6	16	The second power output from an ECM.						
	3599	ECU Power Output Supply Voltage #3	J1939-71	65165	7-8	16	The third power output from an ECM.						
	3600	Steering Straight Ahead Position Reset	J1939-71	56832	3.3	2	Used to reset the straight ahead position for a steering sensor in the steering column or a steering controller's straight ahead position on any steerable axle.						
	3601	Engine Fuel Shutoff Valve Leak Test Control	J1939-71	64914	4.7	2	Control setting for fuel shutoff valve proving system test.						
	3602	Engine Oil Pre-heater Control	J1939-71	64914	5.3	2	Control setting for an electrically actuated oil pre-heating device.						
	3603	Engine Electrical System Power Conservation Control	J1939-71	64914	5.5	2	Control setting for cutting power to various devices when the engine is not in use.						
	3604	Engine Block / Coolant Pre-heater Control	J1939-71	64914	5.7	2	Control setting for an electrically actuated engine block or coolant pre-heating device.						
	3605	Engine Coolant Circulating Pump Control	J1939-71	64914	6.1	2	Control setting for an electrically actuated engine coolant circulating pump.						
	3606	Engine Controlled Shutdown Request	J1939-71	64914	6.3	2	A signal issued by the engine control system to a user or external system requesting for a controlled shutdown.						
	3607	Engine Emergency (Immediate) Shutdown Indication	J1939-71	64914	6.5	2	A signal issued by the engine control system to a user or external system indicating that it is immediately shutting the engine down.						
	3608	Engine Fuel Shutoff Vent Control	J1939-71	64914	4.1	2	Control setting for a fuel shutoff vent.						
	3609	Particulate Trap Intake Pressure 1	J1939-71	64908	1-2	16	This parameter indicates the particulate trap intake pressure 1						
	3610	Particulate Trap Outlet Pressure 1	J1939-71	64908	3-4	16	This parameter indicates the particulate trap outlet pressure 1						
	3611	Particulate Trap Intake Pressure 2	J1939-71	64907	1-2	16	This parameter indicates the particulate trap intake pressure 2						
	3612	Particulate Trap Outlet Pressure 2	J1939-71	64907	3-4	16	This parameter indicates the particulate trap outlet pressure 2						
	3613	Text Display Instructions	J1939-71	43008	1.1	4	This parameter describes the status for the display how to show the information.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3614	Text Display Index	J1939-71	43008	3	8	Used for overwriting consecutive bytes of a displayed string when byte 1 "Text Display Instructions" state is set for "overwrite substring" mode.					
	3615	Text Display Character	J1939-71	43008	4 to n	1600	From 1 up to 200 characters to be presented on a display					
	3618	SAE J2012 DTC Presence	J1939				A J1939 controller has one or more SAE J2012 format DTCs. FMI 31 shall be used with this SPN.					
	3619	Number of J2012 DTCs	J1939-71	64906	1	8	The number J2012 DTCs being conveyed in PGN 64906.					
	3620	J2012 DTC	J1939-71	64906	2-6	40	Five character ASCII SAE J2012 DTC, sent most significant byte first.					
	3621	J2012 DTC Status	J1939-71	64906	7.1	1	Indicates if the respective SAE J2012 DTC is active or previously active.					
	3622	J2012 DTC Occurrence Count	J1939-71	64906	7.2	7	Number of occurrences of the respective SAE J2012 DTC being conveyed.					
	3623	Vehicle Roll	J1939-71	64905	1-2	16	This parameter indicates the roll in degrees from level.					
	3624	Engine Intake Valve Actuation Oil Pressure for Cylinder #1	J1939-71	64904	1-2	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #1.					
	3625	Engine Intake Valve Actuation Oil Pressure for Cylinder #2	J1939-71	64904	3-4	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #2.					
	3626	Engine Intake Valve Actuation Oil Pressure for Cylinder #3	J1939-71	64904	5-6	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #3.					
	3627	Engine Intake Valve Actuation Oil Pressure for Cylinder #4	J1939-71	64904	7-8	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #4.					
	3628	Engine Intake Valve Actuation Oil Pressure for Cylinder #5	J1939-71	64903	1-2	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #5.					
	3629	Engine Intake Valve Actuation Oil Pressure for Cylinder #6	J1939-71	64903	3-4	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #6.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3630	Engine Intake Valve Actuation Oil Pressure for Cylinder #7	J1939-71	64903	5-6	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #7.					
	3631	Engine Intake Valve Actuation Oil Pressure for Cylinder #8	J1939-71	64903	7-8	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #8.					
	3632	Engine Intake Valve Actuation Oil Pressure for Cylinder #9	J1939-71	64902	1-2	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #9.					
	3633	Engine Intake Valve Actuation Oil Pressure for Cylinder #10	J1939-71	64902	3-4	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #10.					
	3634	Engine Intake Valve Actuation Oil Pressure for Cylinder #11	J1939-71	64902	5-6	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #11.					
	3635	Engine Intake Valve Actuation Oil Pressure for Cylinder #12	J1939-71	64902	7-8	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #12.					
	3636	Engine Intake Valve Actuation Oil Pressure for Cylinder #13	J1939-71	64901	1-2	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #13.					
	3637	Engine Intake Valve Actuation Oil Pressure for Cylinder #14	J1939-71	64901	3-4	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #14.					
	3638	Engine Intake Valve Actuation Oil Pressure for Cylinder #15	J1939-71	64901	5-6	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #15.					
	3639	Engine Intake Valve Actuation Oil Pressure for Cylinder #16	J1939-71	64901	7-8	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #16.					
	3640	Engine Intake Valve Actuation Oil Pressure for Cylinder #17	J1939-71	64900	1-2	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #17.					
	3641	Engine Intake Valve Actuation Oil Pressure for Cylinder #18	J1939-71	64900	3-4	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #18.					
	3642	Engine Intake Valve Actuation Oil Pressure for Cylinder #19	J1939-71	64900	5-6	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #19.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3643	Engine Intake Valve Actuation Oil Pressure for Cylinder #20	J1939-71	64900	7-8	16	The gage pressure of the oil in the hydraulic accumulator that powers the engine intake valve for cylinder #20.					
	3644	Engine Derate Request	J1939-71	64914	8	8	This parameter is a derate request made from the engine control system to an external system, where the engine is requesting an external device to reduce the load being applied.					
	3645	Transfer case status	J1939-71	64899	1.1	3	This parameter describes the feedback from the transfer case controller.					
	3646	Transmission Park Selector	J1939				The Transmission Park Selector is a device (switch, button, lever position) that indicates the vehicle should be in or change to the Park transmission mode.					
	3647	Transmission Reverse Selector	J1939				The Transmission Reverse Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Reverse transmission mode.					
	3648	Transmission Neutral Selector	J1939				The Transmission Neutral Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Neutral transmission mode.					
	3649	Transmission Drive Selector	J1939				The Transmission Drive Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Drive transmission mode.					
	3650	Transmission Low Selector	J1939				The Transmission Low Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Low transmission mode.					
	3651	Transmission Primary Manual Selector	J1939				The Transmission Primary Manual Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Manual transmission mode.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3652	Transmission Primary Shift Up Selector	J1939				The Transmission Primary Shift Up Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Shift Up transmission mode.					
	3653	Transmission Primary Shift Down Selector	J1939				The Transmission Primary Shift Down Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Shift Down transmission mode.					
	3654	Transmission Secondary Manual Selector	J1939				The Transmission Secondary Manual Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Manual transmission mode.					
	3655	Transmission Secondary Shift Up Selector	J1939				The Transmission Secondary Shift Up Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Shift Up transmission mode.					
	3656	Transmission Secondary Shift Down Selector	J1939				The Transmission Secondary Shift Down Selector is a device (switch, button, lever position) that indicates the vehicle/transmission should be in or change to the Shift Down transmission mode.					
	3657	Steering Wheel Mounted Shift Controls Decoder	J1939				The Steering Wheel Mounted Shift Controls Decoder of the hardware circuitry that reads and monitors the Steering Wheel Mounted Shift Controls.					
	3658	Steering Wheel Mounted Shift Controls Input	J1939				The Steering Wheel Mounted Shift Controls Input is the input to the device that reads and monitors the Steering Wheel Mounted Shift Controls.					
	3659	Engine Injector Cylinder #1 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #1					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3660	Engine Injector Cylinder #2 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #2					
	3661	Engine Injector Cylinder #3 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #3					
	3662	Engine Injector Cylinder #4 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #4					
	3663	Engine Injector Cylinder #5 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #5					
	3664	Engine Injector Cylinder #6 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #6					
	3665	Engine Injector Cylinder #7 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #7					
	3666	Engine Injector Cylinder #8 Actuator 2	J1939				This is the second valve actuator on Engine Injector Cylinder #8					
	3667	Engine Air Shutoff Status	J1939-71	65252	8.1	2	State signal which indicates the actual measured position of the Air Shutoff.					
	3668	Engine Intercooler Coolant Level	J1939-71	64938	6	8	Ratio of volume of liquid found in an engine intercooler cooling system to total engine intercooler cooling system volume.					
	3669	Engine Rotation Direction	J1939-71	65214	5.1	2	Direction of engine rotation, as reported by the engine.					
	3670	Maximum Crank Attempts per Start Attempt	J1939-71	64895	1	8	The number of cranking cycles that will be performed before ending the start attempt.					
	3671	Crank Attempt Count on Present Start Attempt	J1939-71	65214	6	8	Reports the number of cranking cycles undergone during the present start attempt.					
	3672	EGR Cooler Bypass Actuator Position	J1939-71	64897	1	8	The parameter gives the % open of the EGR Cooler Bypass Actuator.					
	3673	Engine Throttle 2 Position	J1939-71	65266	8	8	The sensed position feedback of the valve, coming from a second electrical actuator for a second throttle plate. used to regulate the supply of a fluid, usually air or fuel/air mixture.					
	3675	Engine Turbocharger Compressor Bypass Actuator Position	J1939-71	64931	4	8	Measures the position of the turbocharger compressor bypass actuator, where 0% represents bypass fully closed and 100% represents bypass fully open.					
	3676	Engine Aftercooler Coolant Level	J1939-71	64938	7	8	Ratio of aftercooler coolant system volume of liquid to total cooling system volume.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3677	Generator Unavailable to Start / Run	J1939				Indicates that the generator is not available to start up and run. This may indicate that a shutdown condition is present, or simply that the system has been manually placed into a STOP state.					
	3678	EPS Unavailable to Accept Load	J1939				Indicates that the Emergency Power System (EPS) is not prepared to accept load. This implies that the EPS is not in a state that will allow for a quick synchronization and connection to the load bus.					
	3680	Transmission Master Valve	J1939				The transmission master valve is in series with a common supply for other transmission valves that control individual functions.					
	3681	Power Conversion Enable Signal	J1939				The power conversion function needs a power conversion enable signal from the microcontroller so that it may power down the power conversion independent of the vehicle's power down.					
	3682	Transmission Air Pressure Regulator Valve	J1939				The valve used to regulate the air supply pressure for the transmission.					
	3683	Steering Wheel Angle	J1939-71	61469	1	16	The main operator's steering wheel angle (on the steering column, not the actual wheel angle).					
	3684	Steering Wheel Angle Range Counter	J1939-71	61469	3.1	6	The signal indicates the number of steering wheel angle range overflows if the operating range of steering wheel is greater than the measuring range of sensor element.					
	3685	Steering Wheel Angle Range Counter Type	J1939-71	61469	3.7	2	The signal indicates whether the steering wheel angle sensor is capable of absolute measuring of the number of steering wheel angle ranges or not.					
	3686	Steering Wheel Angle Range	J1939-71	61469	5-6	16	The signal indicates the range of the steering wheel angle the sensor element is capable to measure.					
	3687	Steering Angle Sensor Active Mode	J1939-71	61469	7.1	2	This signal indicates the operational mode of the steering angle sensor.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3688	Steering Angle Sensor Calibrated	J1939-71	61469	7.3	2	This signal indicates the calibration status of the steering angle sensor.					
	3689	Message Counter	J1939-71	61469	8.1	4	The message counter is to verify the signal path from the demanding device to the steering controller.					
	3690	Message Checksum	J1939-71	61469	8.5	4	The message checksum is used to verify the signal path from the demanding device to the steering controller.					
	3691	Left Headlamp Dynamic Bending Light	J1939-71	64894	1.1	3	This parameter indicates whether the dynamic bending light of the left headlamp is working properly.					
	3692	Right Headlamp Dynamic Bending Light	J1939-71	64894	1.4	3	This parameter indicates whether the dynamic bending light of the left headlamp is working properly.					
	3693	Left Headlamp Light Distribution	J1939-71	64894	2.1	4	This parameter indicates what kind of light distribution is set by the AFS system for the left headlamp.					
	3694	Right Headlamp Light Distribution	J1939-71	64894	2.5	4	This parameter indicates what kind of light distribution is set by the AFS system for the right headlamp.					
	3695	Particulate Trap Regeneration Inhibit Switch	J1939-71	57344	6.1	2	Indicates the state of a switch available to the operator that inhibits particulate trap regeneration.					
	3696	Particulate Trap Regeneration Force Switch	J1939-71	57344	6.3	2	Indicates the state of a switch available to the operator that forces particulate trap regeneration.					
	3697	Particulate Trap Lamp Command	J1939-71	64892	1.1	3	Command to control the particulate trap lamp.					
	3698	Exhaust System High Temperature Lamp Command	J1939-71	64892	7.3	3	Command to control the exhaust system high temperature lamp.					
	3699	Particulate Trap Passive Regeneration Status	J1939-71	64892	2.1	2	Indicates the state of particulate trap passive regeneration.					
	3700	Particulate Trap Active Regeneration Status	J1939-71	64892	2.3	2	Indicates the state of particulate trap active regeneration.					
	3701	Particulate Trap Status	J1939-71	64892	2.5	3	Indicates the state of the particulate trap regeneration need and urgency.					
	3702	Particulate Trap Active Regeneration Inhibited Status	J1939-71	64892	3.1	2	Indicates the state of particulate trap active regeneration inhibition.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3703	Particulate Trap Active Regeneration Inhibited Due to Inhibit Switch	J1939-71	64892	3.3	2	Indicates the state of particulate trap active regeneration inhibition due to the Particulate Trap Regeneration Inhibit Switch.					
	3704	Particulate Trap Active Regeneration Inhibited Due to Clutch Disengaged	J1939-71	64892	3.5	2	Indicates the state of particulate trap active regeneration inhibition due to the clutch being disengaged.					
	3705	Particulate Trap Active Regeneration Inhibited Due to Service Brake Active	J1939-71	64892	3.7	2	Indicates the state of particulate trap active regeneration inhibition due to the service brake being active.					
	3706	Particulate Trap Active Regeneration Inhibited Due to PTO Active	J1939-71	64892	4.1	2	Indicates the state of particulate trap active regeneration inhibition due to the PTO being active.					
	3707	Particulate Trap Active Regeneration Inhibited Due to Accelerator Pedal Off Idle	J1939-71	64892	4.3	2	Indicates the state of particulate trap active regeneration inhibition due to the accelerator pedal being off idle.					
	3708	Particulate Trap Active Regeneration Inhibited Due to Out of Neutral	J1939-71	64892	4.5	2	Indicates the state of particulate trap active regeneration inhibition due to the transmission being out of neutral.					
	3709	Particulate Trap Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed	J1939-71	64892	4.7	2	Indicates the state of particulate trap active regeneration inhibition due to the vehicle speed being above an allowed limit.					
	3710	Particulate Trap Active Regeneration Inhibited Due to Parking Brake Not Set	J1939-71	64892	5.1	2	Indicates the state of particulate trap active regeneration inhibition due to the parking brake being not set.					
	3711	Particulate Trap Active Regeneration Inhibited Due to Low Exhaust Gas Temperature	J1939-71	64892	5.3	2	Indicates the state of particulate trap active regeneration inhibition due to the exhaust gas temperature being too low.					
	3712	Particulate Trap Active Regeneration Inhibited Due to System Fault Active	J1939-71	64892	5.5	2	Indicates the state of particulate trap active regeneration inhibition due to a system fault being active.					
	3713	Particulate Trap Active Regeneration Inhibited Due to System Timeout	J1939-71	64892	5.7	2	Indicates the state of particulate trap active regeneration inhibition due to a system timeout.					
	3714	Particulate Trap Active Regeneration Inhibited Due to Temporary System Lockout	J1939-71	64892	6.1	2	Indicates the state of particulate trap active regeneration inhibition due to a temporary system lockout.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3715	Particulate Trap Active Regeneration Inhibited Due to Permanent System Lockout	J1939-71	64892	6.3	2	Indicates the state of particulate trap active regeneration inhibition due to a permanent system lockout.					
	3716	Particulate Trap Active Regeneration Inhibited Due to Engine Not Warmed Up	J1939-71	64892	6.5	2	Indicates the state of particulate trap active regeneration inhibition due to the engine not being warmed up.					
	3717	Particulate Trap Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed	J1939-71	64892	6.7	2	Indicates the state of particulate trap active regeneration inhibition due to vehicle speed being less than the allowed vehicle speed.					
	3718	Particulate Trap Automatic Active Regeneration Initiation Configuration	J1939-71	64892	7.1	2	Indicates the configuration of particulate trap active regeneration automatic initiation.					
	3719	Particulate Trap 1 Soot Load Percent	J1939-71	64891	1	8	Indicates the soot load percent of particulate trap 1.					
	3720	Particulate Trap 1 Ash Load Percent	J1939-71	64891	2	8	Indicates the ash load percent of particulate trap 1.					
	3721	Particulate Trap 1 Time Since Last Active Regeneration	J1939-71	64891	3-6	32	Indicates the time since the last active regeneration event of particulate trap 1.					
	3722	Particulate Trap 2 Soot Load Percent	J1939-71	64890	1	8	Indicates the soot load percent of particulate trap 2.					
	3723	Particulate Trap 2 Ash Load Percent	J1939-71	64890	2	8	Indicates the ash load percent of particulate trap 2.					
	3724	Particulate Trap 2 Time Since Last Active Regeneration	J1939-71	64890	3-6	32	Indicates the time since the last active regeneration event of particulate trap 2.					
	3725	Aftertreatment 1 Total Passive Regeneration Time	J1939-71	64920	17-20	32	Total amount of time that aftertreatment device 1 has been in passive regeneration over the lifetime of the device.					
	3726	Aftertreatment 1 Total Number of Passive Regenerations	J1939-71	64920	21-24	32	Total number of passive regenerations by aftertreatment device 1 over the lifetime of the device.					
	3727	Aftertreatment 1 Total Number of Active Regeneration Inhibit Requests	J1939-71	64920	25-28	32	Total number of aftertreatment device 1 active regeneration inhibit requests by the operator over the lifetime of the device.					
	3728	Aftertreatment 1 Total Number of Active Regeneration Manual Requests	J1939-71	64920	29-32	32	Total number of aftertreatment device 1 active regeneration manual requests by the operator over the lifetime of the device.					
	3729	Aftertreatment 2 Total Passive Regeneration Time	J1939-71	64921	17-20	32	Total amount of time that Aftertreatment device 2 has been in passive regeneration over the lifetime of the device.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3730	Aftertreatment 2 Total Number of Passive Regenerations	J1939-71	64921	21-24	32	Total number of passive regenerations by Aftertreatment device 2 over the lifetime of the device.					
	3731	Aftertreatment 2 Total Number of Active Regeneration Inhibit Requests	J1939-71	64921	25-28	32	Total number of Aftertreatment device 2 active regeneration inhibit requests by the operator over the lifetime of the device.					
	3732	Aftertreatment 2 Total Number of Active Regeneration Manual Requests	J1939-71	64921	29-32	32	Total number of Aftertreatment device 2 active regeneration manual requests by the operator over the lifetime of the device.					
	3733	Aftertreatment 1 Trip Fuel Used	J1939-71	64889	01-04	32	Total amount of fuel used by aftertreatment device 1 during the current trip period.					
	3734	Aftertreatment 1 Trip Active Regeneration Time	J1939-71	64889	05-08	32	Total amount of time that aftertreatment device 1 has been in active regeneration during the current trip period.					
	3735	Aftertreatment 1 Trip Disabled Time	J1939-71	64889	09-12	32	Total amount of time that aftertreatment 1 regeneration has been manually disabled during the current trip period.					
	3736	Aftertreatment 1 Trip Number of Active Regenerations	J1939-71	64889	13-16	32	Total number of active regenerations by Aftertreatment device 1 during the current trip period.					
	3737	Aftertreatment 1 Trip Passive Regeneration Time	J1939-71	64889	17-20	32	Total amount of time that aftertreatment device 1 has been in passive regeneration during the current trip period.					
	3738	Aftertreatment 1 Trip Number of Passive Regenerations	J1939-71	64889	21-24	32	Total number of passive regenerations by Aftertreatment device 1 during the current trip period.					
	3739	Aftertreatment 1 Trip Number of Active Regeneration Inhibit Requests	J1939-71	64889	25-28	32	Total number of aftertreatment device 1 active regeneration inhibit requests by the operator during the current trip period.					
	3740	Aftertreatment 1 Trip Number of Active Regeneration Manual Requests	J1939-71	64889	29-32	32	Total number of Aftertreatment device 1 active regeneration manual requests by the operator during the current trip period.					
	3741	Aftertreatment 2 Trip Fuel Used	J1939-71	64888	01-04	32	Total amount of fuel used by aftertreatment device 2 during the current trip period.					
	3742	Aftertreatment 2 Trip Active Regeneration Time	J1939-71	64888	05-08	32	Total amount of time that aftertreatment device 2 has been in active regeneration during the current trip period.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3743	Aftertreatment 2 Trip Disabled Time	J1939-71	64888	09-12	32	Total amount of time that aftertreatment 2 regeneration has been manually disabled during the current trip period.					
	3744	Aftertreatment 2 Trip Number of Active Regenerations	J1939-71	64888	13-16	32	Total number of active regenerations by aftertreatment device 2 during the current trip period.					
	3745	Aftertreatment 2 Trip Passive Regeneration Time	J1939-71	64888	17-20	32	Total amount of time that aftertreatment device 2 has been in passive regeneration during the current trip period.					
	3746	Aftertreatment 2 Trip Number of Passive Regenerations	J1939-71	64888	21-24	32	Total number of passive regenerations by aftertreatment device 2 during the current trip period.					
	3747	Aftertreatment 2 Trip Number of Active Regeneration Inhibit Requests	J1939-71	64888	25-28	32	Total number of aftertreatment device 2 active regeneration inhibit requests by the operator during the current trip period.					
	3748	Aftertreatment 2 Trip Number of Active Regeneration Manual Requests	J1939-71	64888	29-32	32	Total number of aftertreatment device 2 active regeneration manual requests by the operator during the current trip period.					
	3749	Engine Overcooled	J1939				Indicates that the engine has been overcooled enough to warrant triggering a diagnostic event.					
	3750	Particulate Trap 1 Conditions Not Met for Active Regeneration	J1939				Indicates that particulate trap 1 is not able to begin or continue an active regenerate event at the current engine operating conditions.					
	3751	Particulate Trap 2 Conditions Not Met for Active Regeneration	J1939				Indicates that particulate trap 2 is not able to begin or continue an active regenerate event at the current engine operating conditions.					
	3752	Wrapping Arm Fast Speed Rotation Actuator	J1939				The actuator for the wrapping arm fast speed rotation function. The wrapper is used to apply the wrapping material around the bale.					
	3753	Wrapping Arm Reverse Rotation Actuator	J1939				The actuator for the wrapping arm reverse rotation function. The wrapper is used to apply the wrapping material around the bale.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3754	Wrapping Arm Regular Speed Rotation Actuator	J1939				The actuator for the wrapping arm regular speed rotation. The wrapper is used to apply the wrapping material around the bale.					
	3755	Bale Rotational Speed	J1939				The measured rotational speed of the bale inside the chamber.					
	3756	Wrapper Knife Close Actuator	J1939				The close actuator for the knives used on the wrapper. The knives are used to cut the end of the wrapping material after it is on the bale.					
	3757	Wrapper Knife Open Actuator	J1939				The open actuator for the knives used on the wrapper. The knives are used to cut the end of the wrapping material after it is on the bale.					
	3758	Baler Gate Actuator	J1939				The actuator used to operate the gate on the back of the baler.					
	3759	Transfer Table Backward Actuator	J1939				The backward actuator for the baler transfer table control which delivers the bale to the wrapper. This backs up the table to move the bale away from the wrapper if needed.					
	3760	Transfer Table Forward Actuator	J1939				The forward actuator for the baler transfer table control which delivers the bale to the wrapper.					
	3761	Precutter Reverser Actuator	J1939				The actuator for the part of the baler precutter system that can reverse the flow of the crop to remove a plug.					
	3762	Precutter Knives Actuator	J1939				The crop precutting knives that process the crop before loading into the machine.					
	3763	Baler Pickup Actuator	J1939				The actuator for the pickup system mechanism that gathers the crop from the field.					
	3764	Baler Net Actuator Mode	J1939				The baler net actuator mechanism response to commands.					
	3765	Baler Net Actuator	J1939				The actuator mechanism that ties the net or wrapping material around the bale.					
	3766	Baler Tying Actuator Mode	J1939				The baler tying actuator mechanism response to commands.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3767	Baler Tying Actuator	J1939				The actuator mechanism that ties the twine or net around the bale.					
	3768	Wrapping Table Position 2	J1939				The second position monitor of the wrapping table.					
	3769	Wrapping Arms Home Position	J1939				The home, or initialized position of the baler wrapping arms.					
	3770	Transfer Table Home Position	J1939				The home, or initialized position of the baler transfer table.					
	3771	Wrapping Table Position 1	J1939				The first position monitor of the wrapping table.					
	3772	Wrapping Area Barrier	J1939				The barrier, or flap position used to keep people away from the wrapping area.					
	3773	Wrapping Material Dispensing	J1939				The state of the baler film or wrapping material & its dispenser.					
	3774	Baler Rear Gate Position Control	J1939				Baler rear gate position control.					
	3775	Wrapping Arm Speed Sensing	J1939				The speed of the baler wrapping arms.					
	3776	Bale Presence	J1939				Used to monitor the bale presence, such as on the transfer table.					
	3777	Baler Transfer Table Motion Sensing	J1939				Senses the motion of the baler transfer table.					
	3778	Chopper Knives Position	J1939				Used to monitor the position of the chopper knives which process the crop.					
	3779	Bale Oversize State	J1939				Used to monitor the maximum bale size before it can damage the machine.					
	3780	Baler Right Gate position	J1939				The position of the Baler right side gate.					
	3781	Net Cutting	J1939				After the net tying operation is completed, this is the function of cutting the net.					
	3782	Twine Sensor	J1939				The monitoring sensor for the twine that is used to tie up the bales.					
	3783	Intake Manifold Charge Combustion	J1939				This parameter provides diagnostics on a charge combustion event within the engine intake manifold, which is commonly called spit-back or intake manifold backfire					
	3784	Reserved for assignment										
	3785	Tractor Brake Stroke Axle 1 Left	J1939-71	64881	1.1	3	Brake stroke status for left brake actuator on tractor axle 1.			253		1

J1939 Reference										J1587 Reference	
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	SID
	3786	Tractor Brake Stroke Axle 1 Right	J1939-71	64881	1.4	3	Brake stroke status for right brake actuator on tractor axle 1.			253	2
	3787	Tractor Brake Stroke Axle 2 Left	J1939-71	64881	1.7-2.1	3	Brake stroke status for left brake actuator on tractor axle 2.			253	3
	3788	Tractor Brake Stroke Axle 2 Right	J1939-71	64881	2.2	3	Brake stroke status for right brake actuator on tractor axle 2.			253	4
	3789	Tractor Brake Stroke Axle 3 Left	J1939-71	64881	2.5	3	Brake stroke status for left brake actuator on tractor axle 3.			253	5
	3790	Tractor Brake Stroke Axle 3 Right	J1939-71	64881	2.8-3.2	3	Brake stroke status for right brake actuator on tractor axle 3.			253	6
	3791	Tractor Brake Stroke Axle 4 Left	J1939-71	64881	3.3	3	Brake stroke status for left brake actuator on tractor axle 4.			253	7
	3792	Tractor Brake Stroke Axle 4 Right	J1939-71	64881	3.6	3	Brake stroke status for right brake actuator on tractor axle 4.			253	8
	3793	Tractor Brake Stroke Axle 5 Left	J1939-71	64881	4.1	3	Brake stroke status for left brake actuator on tractor axle 5.				
	3794	Tractor Brake Stroke Axle 5 Right	J1939-71	64881	4.4	3	Brake stroke status for right brake actuator on tractor axle 5.				
	3795	Trailer Brake Stroke Axle 1 Left	J1939-71	64881	4.7-5.1	3	Brake stroke status for left brake actuator on trailer axle 1.			253	37
	3796	Trailer Brake Stroke Axle 1 Right	J1939-71	64881	5.2	3	Brake stroke status for right brake actuator on trailer axle 1.			253	38
	3797	Trailer Brake Stroke Axle 2 Left	J1939-71	64881	5.5	3	Brake stroke status for left brake actuator on trailer axle 2.			253	39
	3798	Trailer Brake Stroke Axle 2 Right	J1939-71	64881	5.8-6.2	3	Brake stroke status for right brake actuator on trailer axle 2.			253	40
	3799	Trailer Brake Stroke Axle 3 Left	J1939-71	64881	6.3	3	Brake stroke status for left brake actuator on trailer axle 3.			253	41
	3800	Trailer Brake Stroke Axle 3 Right	J1939-71	64881	6.6	3	Brake stroke status for right brake actuator on trailer axle 3.			253	42
	3801	Trailer Brake Stroke Axle 4 Left	J1939-71	64881	7.1	3	Brake stroke status for left brake actuator on trailer axle 4.			253	43
	3802	Trailer Brake Stroke Axle 4 Right	J1939-71	64881	7.4	3	Brake stroke status for right brake actuator on trailer axle 4.			253	44
	3803	Trailer Brake Stroke Axle 5 Left	J1939-71	64881	7.7-8.1	3	Brake stroke status for left brake actuator on trailer axle 5.				
	3804	Trailer Brake Stroke Axle 5 Right	J1939-71	64881	8.2	3	Brake stroke status for right brake actuator on trailer axle 5.				

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3805	Tractor Brake Stroke Alert Monitor	J1939				Tractor Brake Stroke Alert System Status		253	9		
	3806	Trailer Brake Stroke Alert Monitor	J1939				Trailer Brake Stroke Alert System Status		253	45		
	3807	Park Brake Release Inhibit Request	J1939-71	65265	1.7	2	Park Brake Release Inhibit Request signals the desire that an applied park brake remain applied and limit the ability of the vehicle to be moved.					
	3808	Park Brake Release Inhibit Status	J1939-71	65274	4.5	2	This parameter provides reports on the status of the Park Brake Release Inhibit function.					
	3809	Transmission Oil Level Request	J1939-71	64980	3.1	2	Conveys operator or vehicle system desire for a transmission oil level reading to be taken.					
	3810	Retract Status of ramp 1	J1939-71	64880	1.1	2	Retract status of ramp at doorway 1, counting from front to back on the vehicle.					
	3811	Enable status of ramp 1	J1939-71	64880	1.3	2	Enable status of ramp at doorway 1, counting from front to back on the vehicle.					
	3812	Movement status of ramp 1	J1939-71	64880	1.5	2	Movement status of ramp at doorway 1, counting from front to back on the vehicle.					
	3813	Retract Status of ramp 2	J1939-71	64880	2.1	2	Retract status of ramp at doorway 2, counting from front to back on the vehicle.					
	3814	Enable status of ramp 2	J1939-71	64880	2.3	2	Enable status of ramp at doorway 2, counting from front to back on the vehicle.					
	3815	Movement status of ramp 2	J1939-71	64880	2.5	2	Movement status of ramp at doorway 2, counting from front to back on the vehicle.					
	3816	Retract Status of ramp 3	J1939-71	64880	3.1	2	Retract status of ramp at doorway 3, counting from front to back on the vehicle.					
	3817	Enable status of ramp 3	J1939-71	64880	3.3	2	Enable status of ramp at doorway 3, counting from front to back on the vehicle.					
	3818	Movement status of ramp 3	J1939-71	64880	3.5	2	Movement status of ramp at doorway 3, counting from front to back on the vehicle.					
	3819	Front axle group engagement status	J1939-71	61446	4.1	2	Front axle group engagement status					
	3820	Rear axle group engagement status	J1939-71	61446	4.3	2	Rear axle group engagement status					
	3821	Engine Exhaust Gas Recirculation (EGR) Valve 2 Control	J1939-71	64879	1	16	Desired percentage of maximum Exhaust Gas Recirculation (EGR) valve opening for valve 2.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3822	Engine Exhaust Gas Recirculation Valve 2 Position	J1939-71	64916	3	16	The position of the second exhaust gas recirculation valve expressed as a percentage of full travel.					
	3823	Transmission Torque Converter Oil Outlet Temperature	J1939-71	64917	2-3	16	Temperature of transmission torque converter outlet oil.					
	3824	Transmission Gear Latch Actuator	J1939				The actuator allows the transmission to hold a gear (i.e. gear latch) until the vehicle slows down when power is lost to the engine and/or transmission ECUs.					
	3825	Transmission Output Speed 2	J1939				Second sensor to measure transmission output speed.					
	3826	Average Catalyst Reagent Consumption	J1939-71	64878	1-2	16	Measured use of reagent by a Selective Catalytic Reduction system for exhaust emission control, averaged over the previous 15 hours of engine operation.					
	3827	Reserved for assignment										
	3828	Commanded Catalyst Reagent Consumption	J1939-71	64878	3-4	16	This parameter transmits the amount of reagent that the emissions control system has requested to be used, averaged over the past 15 hours of engine operation.					
	3829	EPS Supplying Load	J1939				The generator set controller indicates that the Emergency Power System (generator set) can supply load when the genset is actually supplying load and enabled to supply load.					
	3830	Aftertreatment 1 Secondary Air Differential Pressure	J1939-71	64877	1-2	16	Indicates the secondary air differential pressure for aftertreatment 1.		128	373		
	3831	Aftertreatment 1 Secondary Air Temperature	J1939-71	64877	3-4	16	Indicates the secondary air temperature for aftertreatment 1.		128	375		
	3832	Aftertreatment 1 Secondary Air Mass Flow	J1939-71	64877	5-6	16	Indicates the secondary air mass flow for aftertreatment 1.					
	3833	Aftertreatment 2 Secondary Air Differential Pressure	J1939-71	64876	1-2	16	Indicates the secondary air differential pressure for aftertreatment 2.		128	374		
	3834	Aftertreatment 2 Secondary Air Temperature	J1939-71	64876	3-4	16	Indicates the secondary air temperature for aftertreatment 2.		128	376		
	3835	Aftertreatment 2 Secondary Air Mass Flow	J1939-71	64876	5-6	16	Indicates the secondary air mass flow for aftertreatment 2.					
	3836	Reserved for assignment										

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3837	Aftertreatment 1 Secondary Air Pressure	J1939-71	64877	7-8	16	Pressure of the secondary air for aftertreatment 1		128	377		
	3838	Aftertreatment 2 Secondary Air Pressure	J1939-71	64876	7-8	16	Pressure of the secondary air for aftertreatment 2		128	378		
	3839	Brake Temperature Warning	J1939-71	64964	1.1	2	This parameter indicates if the temperature in the service brakes exceeds a certain value. It can be used for a warning information for the driver.					
	3840	Auxiliary I/O #17	J1939-71	42752	1.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3841	Auxiliary I/O #18	J1939-71	42752	1.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3842	Auxiliary I/O #19	J1939-71	42752	1.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3843	Auxiliary I/O #20	J1939-71	42752	1.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3844	Auxiliary I/O #21	J1939-71	42752	2.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3845	Auxiliary I/O #22	J1939-71	42752	2.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3846	Auxiliary I/O #23	J1939-71	42752	2.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3847	Auxiliary I/O #24	J1939-71	42752	2.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3848	Auxiliary I/O #25	J1939-71	42752	3.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3849	Auxiliary I/O #26	J1939-71	42752	3.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3850	Auxiliary I/O #27	J1939-71	42752	3.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3851	Auxiliary I/O #28	J1939-71	42752	3.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3852	Auxiliary I/O #29	J1939-71	42752	4.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3853	Auxiliary I/O #30	J1939-71	42752	4.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3854	Auxiliary I/O #31	J1939-71	42752	4.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3855	Auxiliary I/O #32	J1939-71	42752	4.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3856	Auxiliary I/O #33	J1939-71	42752	5.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3857	Auxiliary I/O #34	J1939-71	42752	5.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3858	Auxiliary I/O #35	J1939-71	42752	5.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3859	Auxiliary I/O #36	J1939-71	42752	5.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3860	Auxiliary I/O #37	J1939-71	42752	6.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3861	Auxiliary I/O #38	J1939-71	42752	6.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3862	Auxiliary I/O #39	J1939-71	42752	6.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3863	Auxiliary I/O #40	J1939-71	42752	6.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3864	Auxiliary I/O #41	J1939-71	42752	7.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3865	Auxiliary I/O #42	J1939-71	42752	7.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3866	Auxiliary I/O #43	J1939-71	42752	7.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3867	Auxiliary I/O #44	J1939-71	42752	7.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3868	Auxiliary I/O #45	J1939-71	42752	8.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3869	Auxiliary I/O #46	J1939-71	42752	8.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3870	Auxiliary I/O #47	J1939-71	42752	8.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3871	Auxiliary I/O #48	J1939-71	42752	8.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3872	Auxiliary I/O #49	J1939-71	42496	1.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3873	Auxiliary I/O #50	J1939-71	42496	1.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3874	Auxiliary I/O #51	J1939-71	42496	1.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3875	Auxiliary I/O #52	J1939-71	42496	1.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3876	Auxiliary I/O #53	J1939-71	42496	2.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3877	Auxiliary I/O #54	J1939-71	42496	2.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3878	Auxiliary I/O #55	J1939-71	42496	2.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3879	Auxiliary I/O #56	J1939-71	42496	2.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3880	Auxiliary I/O #57	J1939-71	42496	3.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3881	Auxiliary I/O #58	J1939-71	42496	3.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3882	Auxiliary I/O #59	J1939-71	42496	3.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3883	Auxiliary I/O #60	J1939-71	42496	3.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3884	Auxiliary I/O #61	J1939-71	42496	4.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3885	Auxiliary I/O #62	J1939-71	42496	4.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3886	Auxiliary I/O #63	J1939-71	42496	4.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3887	Auxiliary I/O #64	J1939-71	42496	4.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						
	3888	Auxiliary I/O #65	J1939-71	42496	5.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3889	Auxiliary I/O #66	J1939-71	42496	5.5.	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3890	Auxiliary I/O #67	J1939-71	42496	5.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3891	Auxiliary I/O #68	J1939-71	42496	5.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3892	Auxiliary I/O #69	J1939-71	42496	6.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3893	Auxiliary I/O #70	J1939-71	42496	6.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3894	Auxiliary I/O #71	J1939-71	42496	6.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3895	Auxiliary I/O #72	J1939-71	42496	6.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3896	Auxiliary I/O #73	J1939-71	42496	7.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3897	Auxiliary I/O #74	J1939-71	42496	7.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3898	Auxiliary I/O #75	J1939-71	42496	7.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3899	Auxiliary I/O #76	J1939-71	42496	7.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3900	Auxiliary I/O #77	J1939-71	42496	8.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3901	Auxiliary I/O #78	J1939-71	42496	8.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3902	Auxiliary I/O #79	J1939-71	42496	8.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3903	Auxiliary I/O #80	J1939-71	42496	8.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3904	Auxiliary I/O #81	J1939-71	42240	1.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3905	Auxiliary I/O #82	J1939-71	42240	1.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3906	Auxiliary I/O #83	J1939-71	42240	1.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3907	Auxiliary I/O #84	J1939-71	42240	1.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3908	Auxiliary I/O #85	J1939-71	42240	2.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3909	Auxiliary I/O #86	J1939-71	42240	2.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3910	Auxiliary I/O #87	J1939-71	42240	2.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3911	Auxiliary I/O #88	J1939-71	42240	2.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3912	Auxiliary I/O #89	J1939-71	42240	3.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3913	Auxiliary I/O #90	J1939-71	42240	3.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3914	Auxiliary I/O #91	J1939-71	42240	3.3.	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3915	Auxiliary I/O #92	J1939-71	42240	3.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3916	Auxiliary I/O #93	J1939-71	42240	4.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3917	Auxiliary I/O #94	J1939-71	42240	4.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3918	Auxiliary I/O #95	J1939-71	42240	4.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3919	Auxiliary I/O #96	J1939-71	42240	4.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3920	Auxiliary I/O #97	J1939-71	42240	5.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3921	Auxiliary I/O #98	J1939-71	42240	5.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3922	Auxiliary I/O #99	J1939-71	42240	5.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3923	Auxiliary I/O #100	J1939-71	42240	5.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3924	Auxiliary I/O #101	J1939-71	42240	6.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3925	Auxiliary I/O #102	J1939-71	42240	6.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3926	Auxiliary I/O #103	J1939-71	42240	6.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3927	Auxiliary I/O #104	J1939-71	42240	6.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3928	Auxiliary I/O #105	J1939-71	42240	7.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3929	Auxiliary I/O #106	J1939-71	42240	7.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3930	Auxiliary I/O #107	J1939-71	42240	7.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3931	Auxiliary I/O #108	J1939-71	42240	7.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3932	Auxiliary I/O #109	J1939-71	42240	8.7	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3933	Auxiliary I/O #110	J1939-71	42240	8.5	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3934	Auxiliary I/O #111	J1939-71	42240	8.3	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3935	Auxiliary I/O #112	J1939-71	42240	8.1	2	Identifies the current status of auxiliary input/output functions that are configured uniquely per application.					
	3936	Aftertreatment Diesel Particulate Filter System					Indicates non-specific failures of the aftertreatment diesel particulate filter system.					
	3937	Reserved for assignment										
	3938	Generator Governing Bias	J1939-75	61470	1-2	16	Control signal used to govern the genset's speed or load (depending on isochronous or utility parallel operation, respectively)					
	3939	Enable Switch - PTO Engine Flywheel	J1939-71	64932	2.1	2	Status of the PTO Engine Flywheel enable switch					
	3940	Engagement Consent - PTO Engine Flywheel	J1939-71	64932	4.1	2	Engagement Consent status for the PTO Engine Flywheel					
	3941	Engagement Status - PTO Engine Flywheel	J1939-71	64932	6.1	2	Engagement status of the PTO Engine Flywheel					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	3942	Enable Switch - PTO Engine Accessory Drive 1	J1939-71	64932	2.3	2	Status of the PTO engine accessory drive 1 enable switch						
	3943	Engagement Consent - PTO Engine Accessory Drive 1	J1939-71	64932	4.3	2	Engagement consent status for the PTO engine accessory drive 1						
	3944	Engagement Status - PTO Engine Accessory Drive 1	J1939-71	64932	6.3	2	Engagement status of the PTO engine accessory drive 1						
	3945	Enable Switch - PTO Engine Accessory Drive 2	J1939-71	64932	2.5	2	Status of the PTO engine accessory drive 2 enable switch						
	3946	Engagement Consent - PTO Engine Accessory Drive 2	J1939-71	64932	4.5	2	Engagement Consent status for the PTO engine accessory drive 2						
	3947	Engagement Status - PTO Engine Accessory Drive 2	J1939-71	64932	6.5	2	Engagement status of the PTO engine accessory drive 2						
	3948	At least one PTO engaged	J1939-71	64932	7.1	2	Indicates that at least one PTO is engaged						
	3949	AC Power Voltage, 120V, 60 Hz	J1939				The electrical potential of an alternating current power supply at 120 Volts, 60 Hz.						
	3950	Air Horn	J1939				The air horn is the operator's externally mounted, pneumatically operated, signal device.						
	3951	Air Horn Switch	J1939				The air horn switch conveys the operator's demand to sound the air horn.						
	3952	Air Shield Light	J1939				The air shield light is the backlight for a lighted sign in the air fairing over the cab						
	3953	Auxiliary Gauge Package	J1939				The auxiliary gauge package incorporates non-standard gauges into a single physical package.						
	3954	Auxiliary Gauge Package Gauge 1	J1939				The first gauge of an auxiliary gauge package, numbered left to right, top to bottom.						
	3955	Auxiliary Gauge Package Gauge 2	J1939				The second gauge of an auxiliary gauge package, numbered left to right, top to bottom.						
	3956	Auxiliary Gauge Package Gauge 3	J1939				The third gauge of an auxiliary gauge package, numbered left to right, top to bottom.						
	3957	Auxiliary Transmission Constant Supply Actuator	J1939				The auxiliary transmission constant supply actuator energizes the supply port of an auxiliary transmission						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3958	Auxiliary Transmission High Range Actuator	J1939				The auxiliary transmission high range actuator energizes the high range port of an auxiliary transmission, demanding the high range of the auxiliary transmission.					
	3959	Auxiliary Transmission Neutral Actuator	J1939				The auxiliary transmission neutral actuator energizes the neutral port of an auxiliary transmission demanding a shift to neutral.					
	3960	Auxiliary Transmission Range Switch	J1939				The auxiliary transmission range switch indicates the desired range of an auxiliary transmission.					
	3961	Body Equipment Hydraulic Power Auxiliary Pump Inhibit Switch	J1939				The body equipment hydraulic power auxiliary pump inhibit signal prevents the operation of an auxiliary pump that supplies hydraulic power when the vehicle's PTO driven pump is not operating.					
	3962	Bus Amber Signal Light 1	J1939				Bus amber signal light 1 illuminates the left front bus amber signal lamp. When mounted on a school bus, bus amber signal lights will comply with SAE J887, except that the lens will be amber.					
	3963	Bus Amber Signal Light 2	J1939				The bus amber signal light 2 illuminates the right front bus amber signal lamp.					
	3964	Bus Amber Signal Light 3	J1939				The bus amber signal light 3 illuminates the left rear bus amber signal lamp					
	3965	Bus Amber Signal Light 4	J1939				The bus amber signal light 4 illuminates the right rear bus amber signal lamp					
	3966	Bus Crossing Gate	J1939				The bus crossing gate extends a rod that encourages passengers to stay within the driver's forward view when crossing in front of a bus.					
	3967	Bus Passenger Door Close Relay	J1939				The bus passenger door close relay energizes the closing actuator of a bus passenger entrance door.					
	3968	Bus Passenger Door Control Switch 1	J1939				The bus door control switch 1 requests that the passenger entrance door be opened or closed.					
	3969	Bus Passenger Door Control Switch 2	J1939				The bus door control switch 2 provides an alternate switch signal for requesting the passenger entrance door to open or close.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	3970	Bus Passenger Door Open Relay	J1939				The bus passenger door open relay energizes the device that opens the passenger entrance door					
	3971	Bus Red Signal Light 1	J1939				The bus red signal light 1 is the left front bus red signal lamp. When mounted on a school bus, these lamps comply with SAE J887.					
	3972	Bus Red Signal Light 2	J1939				The bus red signal light 2 is the right front school bus red signal lamp.					
	3973	Bus Red Signal Light 3	J1939				The bus red signal light 3 is the left rear school bus red signal lamp.					
	3974	Bus Red Signal Light 4	J1939				The bus red signal light 4 is the right rear school bus red signal lamp.					
	3975	Bus Stop Arm	J1939				The bus stop arm signals oncoming traffic to stop to permit passengers to cross the road.					
	3976	Cab Dome Light 1	J1939				The cab dome light 1 is the forwardmost interior light mounted on the ceiling of the cab behind the driver's shoulders. Typically, the cab dome light 1 will illuminate when the driver's or passenger's door is open.					
	3977	Cab Dome Light 2	J1939				The cab dome light 2 is the second forwardmost interior light mounted on the ceiling of the cab behind the driver's shoulders. Typically, the cab dome light 2 will illuminate when a rear passenger door is open.					
	3978	Cab Dome Light 2 Switch	J1939				The cab dome light 2 switch controls the operation of the second dome light in the cab or sleeping berth.					
	3979	Cab Floor Light	J1939				The cab floor light illuminates the cab's floor					
	3980	Cab Floor Light Switch	J1939				The cab floor light switch initiates cab floor illumination.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3981	Cab HVAC Mode Control Actuator	J1939				The cab HVAC mode control actuator selects which ducts convey conditioned air into the cabin of the vehicle. The actuator directs the air through the ducts [e.g. floor, defrost, dash, or a combination], based on the position of the operator's control.					
	3982	Cab HVAC Rear Blower Speed Control Switch	J1939				The cab HVAC rear blower speed control switch controls the blower speed of the second (rear) or sleeper HVAC system in the cab.					
	3983	Cab HVAC Rear Temperature Control Switch	J1939				The cab HVAC rear temperature control switch controls the temperature of the second (rear) or sleeper HVAC system					
	3984	Cab HVAC Recirculation Door Control Actuator	J1939				The cab HVAC recirculation door control actuator positions the door in the HVAC module that controls the amount of outside air drawn into the HVAC system.					
	3985	Cab HVAC System Controller	J1939				The cab HVAC system controller provides the operator controls and logic for operating the cabin's heating ventilation and cooling (HVAC) system.					
	3986	CAB HVAC Temperature Control Actuator	J1939				The cab HVAC temperature control actuator controls the door in the HVAC system to bypass the heater core, producing a balance between heating and cooling.					
	3987	Compression Brake Enable Switch Indicator Lamp	J1939				The compression brake switch indicator signals the status of the compression brake enable switch to the operator.					
	3988	Door 1 Control Module	J1939				The status of the first door control module. Doors are numbered left to right, front to back.					
	3989	Door 1 Window Motor	J1939				The window motor in door 1. Doors are numbered left to right, front to back.					
	3990	Door 2 Control Module	J1939				The status of the second door control module. Doors are numbered left to right, front to back.					
	3991	Door 2 Window Motor	J1939				The window motor in door 2. Doors are numbered left to right, front to back.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	3992	Door 3 Control Module	J1939				The status of the third door control module. Doors are numbered left to right, front to back.					
	3993	Door 3 Window Motor	J1939				The window motor in door 3. Doors are numbered left to right, front to back.					
	3994	Door 4 Control Module	J1939				The status of the fourth door control module. Doors are numbered left to right, front to back.					
	3995	Door 4 Window Motor	J1939				The window motor in door 4. Doors are numbered left to right, front to back.					
	3996	Electrical Accessory Power	J1939				Electrical accessory power identifies that the ignition keyswitch is in the accessory state.					
	3997	Electrical Accessory Power Relay	J1939				The electrical accessory power relay energizes the vehicle's accessory bus (or portion thereof)					
	3998	Electrical Load Shed OFF	J1939				The electrical load shed OFF deactivates the system that saves power by selectively disabling the power supplied to individual devices or circuits of the vehicle during low battery charge.					
	3999	Electrical Load Shed ON	J1939				Electrical load shed ON activates the system that saves power by selectively disabling the power supplied to individual devices or circuits of the vehicle during low battery charge					
	4000	Engine Exhaust Brake Enable Switch	J1939				The exhaust brake enable switch permits or inhibits the engine exhaust brake function.					
	4001	Engine Exhaust Brake Enable Switch Indicator	J1939				The engine exhaust brake enable switch indicator signals the status of the engine exhaust brake enable switch					
	4002	Engine Remote Start	J1939				Engine remote start initiates an engine start from an alternate operator's station or sleeping berth.					
	4003	Engine Remote Stop	J1939				Engine remote stop stops the engine from an alternate operator's location or sleeping berth					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	4004	Exterior Lamp Check Switch	J1939				The exterior lamp check switch requests activation or deactivation of the exterior lamp check function.					
	4005	Fifth Wheel Lock Actuator	J1939				The fifth wheel lock actuator operates the fifth wheel lock that secures the king pin in the fifth wheel.					
	4006	Fifth Wheel Slider Lock Actuator	J1939				The fifth wheel slide latch solenoid clock actuator operates the latch that permits the fifth wheel to slide forward or aft of its current location.					
	4007	Fifth Wheel Slider Lock Switch	J1939				Fifth wheel slider lock switch provides operator input to the fifth wheel slider lock actuator.					
	4008	Fog Light 2	J1939				Fog light 2 is second (or right) fog lamp mounted facing forward on the vehicle.					
	4009	Fuel Filter Fuel Heater Relay	J1939				The fuel filter fuel heater relay energizes the heating element in the fuel filter, which typically is self regulating when energized.					
	4010	Fuel Tank Transfer Pump	J1939				The fuel tank transfer pump transfers fuel from the secondary fuel tank to the primary fuel tank					
	4011	Headlamp 1 High Beam	J1939				The headlamp 1 high beam provides the high beam function of the left headlamp.					
	4012	Headlamp 2 High Beam	J1939				The headlamp 2 high beam provides the high beam function of the right headlamp.					
	4013	Headlight Interrupt Switch	J1939				The headlight interrupt switch signals that the head lights are to be turned off for a limited interval of time. This switch allows drivers to extinguish DRL or other headlight features, such as when in line at a weigh station.					
	4014	High Current Auxiliary Load Switch 1	J1939				The high current auxiliary load switch 1 requests the operation of the first auxiliary high current load relay to power a high current auxiliary bus.					
	4015	High Current Auxiliary Load Switch 2	J1939				The high current auxiliary load switch 2 requests the operation of the second auxiliary high current load relay to power a high current auxiliary bus.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	4016	High Current Auxiliary Power Relay 1	J1939				The high current auxiliary relay 1 switches power to the first high current auxiliary bus.					
	4017	High Current Auxiliary Power Relay 2	J1939				The high current auxiliary relay 2 switches power to the second high current auxiliary bus.					
	4018	Lift Axle Lower Actuator	J1939				The lift axle lower actuator unstows a lift axle and lowers it to the roadway.					
	4019	Lift Axle Lower Switch	J1939				The lift axle lower switch requests that a lift axle be unstowed and lowered to the roadway.					
	4020	Lift Axle Raise Actuator	J1939				The lift axle raise actuator raises and stows a lift axle from the roadway.					
	4021	Lift Axle Raise Switch	J1939				The lift axle raise switch requests that a lift axle be raised from the roadway and stowed.					
	4022	Lift Gate Power Control Enable	J1939				The lift gate power control enable permits operation of the lift gate through the lift gate power control switch.					
	4023	Lift Gate Power Control Switch	J1939				The lift gate power control switch requests that power is supplied to an electric lift gate motor attached to the vehicle's body.					
	4024	Marker Light Interrupt Switch	J1939				The marker light interrupt switch requests that the marker lights be toggled (turned off if on or turned on if off)					
	4026	Mirror 2 Heater	J1939				Mirror 2 heater defrosts the second rear view mirror					
	4027	Power Inverter Enable Switch	J1939				Switch used to enable or disable the vehicle AC bus					
	4028	Service Brake Circuit 1 Air Tank Drain Valve	J1939				The service brake circuit 1 air tank drain valve purges condensed moisture from the primary air tank when opened.					
	4029	Service Brake Circuit 1 Air Tank Drain Valve Switch	J1939				The service brake circuit 1 air tank drain valve switch allows the primary air tank drain valve to cycle and purge condensed moisture from the secondary air tank.					
	4030	Service Brake Circuit 2 Air Tank Drain Valve	J1939				The service brake circuit 2 air tank drain valve switch allows the secondary air tank drain valve to cycle and purge condensed moisture from the secondary air tank.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	4031	Service Brake Supply Air Tank Drain Valve	J1939				The service brake supply air tank drain valve actuator opens the valve that purges the supply air tank of collected condensation.					
	4032	Service Brake Supply Air Tank Drain Valve Switch	J1939				The service brake supply air tank drain valve switch operates the supply air tank drain valve to purge the air tank of collected condensation.					
	4033	Engine Remote Start/Stop Enable	J1939				Engine remote start/stop enable activates the engine's remote start/stop function from alternate equipment operating stations or sleeping berth of the vehicle.					
	4034	Snow Plow High Beam Light 1	J1939				The snow plow high beam light 1 activates or de-activates the left headlamp high beam light mounted above a snow plow					
	4035	Snow Plow High Beam Light 2	J1939				The snow plow high beam light 2 activates or de-activates the right headlamp high beam light mounted above a snow plow					
	4036	Snow Plow Low Beam Light 1	J1939				The snow plow low beam light 1 provides the left headlamp mounted above a snow plow blade.					
	4037	Snow Plow Low Beam Light 2	J1939				The snow plow low beam light 2 provides the right headlamp mounted above a snow plow blade.					
	4038	Snow Plow Forward Lighting Relay 2	J1939				The snow plow forward lighting relay 2 switches the forward lights from the normal headlamps to the lamps mounted above the snow plow blade. The snow plow forward lighting relay 2 controls the right headlamp if lighting control is divided left from right.					
	4039	Snow Plow Forward Lighting Relay 1	J1939				The snow plow forward lighting relay 1 switches the forward lights from the normal headlamps to the lamps mounted above the snow plow blade. The snow plow forward lighting relay 1 controls the left headlamp if lighting control is divided left from right.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	4040	Snow Plow Lighting Mode Switch	J1939				The snow plow lighting mode switch directs that the forward illumination switch to snow plow mode from normal mode.					
	4041	Software Loop Time Exceeded	J1939				Software loop time exceeded is reported should a device detect that the maximum loop execution time has been exceeded.					
	4042	Trailer Auxiliary Power Switch	J1939				The trailer auxiliary power switch controls the supply of power to the trailer's auxiliary power circuit.					
	4043	Transfer Case Front Driveline Actuator	J1939				The transfer case front driveline actuator engages the driveline output of a transfer case to provide power to the vehicle's front axle.					
	4044	Transfer Case High Range Actuator	J1939				The transfer case high range actuator engages the high range of the transfer case.					
	4045	Transfer Case Low Range Actuator	J1939				The transfer case low range actuator engages the low range of the transfer case.					
	4046	Transfer Case Neutral Actuator	J1939				The transfer case neutral actuator commands the transfer case to neutral.					
	4047	Transfer Case Output Shaft PTO Actuator	J1939				Actuator that engages the output shaft PTO drive of the transfer case.					
	4048	Transfer Case Range Switch	J1939				The transfer case range switch signals the operator's desire to operate in high range, low range or neutral (if available).					
	4049	Transfer Case Rear Driveline Actuator	J1939				Commands the driveline output of a transfer case to be engaged to provide power to the vehicle's rear axle(s).					
	4050	Transmission Secondary Mode Switch	J1939				The transmission secondary mode switch signals the transmission to operate in a secondary mode (e.g, the most fuel efficient manner possible)					
	4051	Transmission Input Shaft PTO 1 Actuator	J1939				Actuator which engages the PTO of the first transmission input shaft PTO drive mounted on the transmission.					
	4052	Transmission Input Shaft PTO 1 Retention Actuator	J1939				Actuator which locks the PTO of the first transmission input shaft PTO drive retention device in place.					

J1939 Reference											J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID			
	4053	Transmission Input Shaft PTO 2 Actuator	J1939				Actuator which engages the PTO of the second transmission input shaft PTO drive mounted on the transmission.						
	4054	Transmission Input Shaft PTO 2 Retention Actuator	J1939				Actuator which locks the PTO of the second transmission input shaft PTO drive retention device in place.						
	4055	Transmission Retarder Enable Switch	J1939				The transmission retarder enable switch indicates whether the operator allows the transmission to engage its integral retarder when indicated by vehicle operating conditions.						
	4056	Two Speed Axle Actuator	J1939				Identifies the status of the actuator for the two-speed axle						
	4057	Wiper Motor	J1939				Motor which operates the windshield wiper system						
	4058	Cab Dome Light 1 Switch	J1939				The cab dome light 1 switch controls the operation of the dome lights in the vehicle.						
	4059	Steer Axle Group Weight Available	J1939-71	64875	1.1	2	Indicates the availability of the steer axle group for purposes of weight measurement						
	4060	Lift Axle Group Weight Available	J1939-71	64875	1.3	2	Indicates the availability of the lift axle group for purposes of weight measurement						
	4061	Drive Axle Group Weight Available	J1939-71	64875	1.5	2	Indicates the availability of the drive axle group for purposes of weight measurement						
	4062	Tag Axle Group Weight Available	J1939-71	64875	1.7	2	Indicates the availability of the tag axle group for purposes of weight measurement						
	4063	Additional Tractor Axle Group Weight Available	J1939-71	64875	2.1	2	Indicates the availability of the additional tractor axle group for purposes of weight measurement						
	4064	Trailer A Axle Group Weight Available	J1939-71	64875	2.3	2	Indicates the availability of the trailer A axle group for purposes of weight measurement						
	4065	Trailer B Axle Group Weight Available	J1939-71	64875	2.5	2	Indicates the availability of the trailer B axle group for purposes of weight measurement						
	4066	Trailer C Axle Group Weight Available	J1939-71	64875	2.7	2	Indicates the availability of the trailer C axle group for purposes of weight measurement						
	4067	Trailer D Axle Group Weight Available	J1939-71	64875	3.1	2	Indicates the availability of the trailer D axle group for purposes of weight measurement						
	4068	Trailer E Axle Group Weight Available	J1939-71	64875	3.3	2	Indicates the availability of the trailer E axle group for purposes of weight measurement						

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	4069	Trailer F Axle Group Weight Available	J1939-71	64875	3.5	2	Indicates the availability of the trailer F axle group for purposes of weight measurement					
	4070	Trailer G Axle Group Weight Available	J1939-71	64875	3.7	2	Indicates the availability of the trailer G axle group for purposes of weight measurement					
	4071	Trailer H Axle Group Weight Available	J1939-71	64875	4.1	2	Indicates the availability of the trailer H axle group for purposes of weight measurement					
	4072	Additional Trailer Axle Group Weight Available	J1939-71	64875	4.3	2	Indicates the availability of the additional trailer axle group for purposes of weight measurement					
	4073	Axle Group Location	J1939-71	64874	1.1	4	Specific axle group used in conjunction with and when communicating the axle group weight					
	4074	Axle Group Location	J1939-71	64873	1.1	4	Specific axle group used in conjunction with and when communicating the axle group calibration					
	4075	Zero Net Vehicle Weight Change	J1939-71	64871	1.1	2	Zero Net Vehicle Weight Change command					
	4076	Engine coolant temperature 2	J1939-71	64870	1	8	Second temperature of liquid found in the engine cooling system.					
	4077	Aftertreatment 1 Fuel Pressure 2	J1939-71	64869	1-2	16	Second fuel pressure measurement for the aftertreatment 1 system					
	4078	Generator Alternator Efficiency	J1939-75	64915	2-3	16	Measured, calculated, and/or estimated operating efficiency of the generator alternator.					
	4079	Generator Governing Speed Command	J1939-75	64915	4.1	2	Command from user and/or generator control system for the genset (engine) to govern to low idle or rated base speed setpoints.					
	4080	Generator Frequency Selection	J1939-75	64915	4.3	4	Command from user and/or generator control system for the genset (engine) to target operations for 50 Hz, 60 Hz, or 400 Hz.					
	4081	Oil Recovery Pump	J1939				Electronically actuated pump that recovers oil vapor condensation for the crankcase filter and returns it to the crankcase.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description			PID	MID	SID
	4082	Fuel Pump Primer Control	J1939-71	64914	1.5	2	Parameter used to activate or deactivate a priming system on the fuel transfer system. The fuel priming system is a system that purges air in the fuel lines and may assist fuel delivery to a second pump at lower speeds.					
	4083	Fuel Pump Primer Status	J1939-71	65130	7.4	2	Parameter used to transmit the actual status of the fuel priming system. The fuel priming system is a system that purges air in the fuel lines and may assist fuel delivery to a second pump at lower speeds.					
	4084	General Purpose Valve Spool	J1939				The internal hydraulic spool associated with a general purpose valve. Flow from a general purpose valve is determined by the movement of an internal spool.					
	4085	General Purpose Valve	J1939				A hydraulic valve, such as used on an implement control system, that offers flows of extend, retract, neutral, and float.					
	4086	Valve Load Sense Pressure	J1939-71	1792	1-2	16	The maximum of the currently measured pressures of a valve's work port A and work port B.					
	4087	Valve Pilot Pressure	J1939-71	1792	3	8	Pressure of a valve's pilot supply port.					
	4088	Valve Assembly Load sense Pressure	J1939-71	1792	4-5	16	The maximum pressure of a valve assembly's current collective load sense pressures where a valve assembly can consist of two or more valves.					
	4089	Valve Assembly Supply Pressure	J1939-71	1792	6-7	16	Pressure of the hydraulic supply port to a valve assembly.					
	4090	NOx limits exceeded, root cause unknown	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded, but the root cause cannot be determined by the OBD system.					
	4091	NOx limits exceeded due to Deactivation of EGR	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to deactivation of EGR.					

J1939 Reference										J1587 Reference		
Rev	SPN	SPN Name	SPN Doc	PGN Number	Pos in PG	Bit Size	SPN Description	PID	MID	SID		
	4092	NOx limits exceeded due to Incorrect EGR flow	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to incorrect EGR flow.					
	4093	NOx limits exceeded due to Low Reagent Consumption	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to low reagent consumption.					
	4094	NOx limits exceeded due to Insufficient Reagent Quality	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to an insufficient reagent quality.					
	4095	NOx limits exceeded due to Interrupted Reagent Dosing	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to an interruption in reagent dosing activity.					
	4096	NOx limits exceeded due to Empty Reagent Tank	J1939				Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded due to the reagent tank being empty.					
	4097	Aftertreatment 1 Fuel Drain Actuator	J1939-71	64929	7.1	2	Indicates whether aftertreatment 1 fuel drain actuator is on or off					
	4098	Aftertreatment 2 Fuel Drain Actuator	J1939-71	64928	7.1	2	Indicates whether aftertreatment 2 fuel drain actuator is on or off					
	4099	XBR urgency	J1939-71	1024	4	8	The idea of the urgency value is to adjust the endurance brake integration behavior in the EBS system according to the traffic situation.					
	520192	Manufacturer Assignable SPN (first entry)	J1939-73			19						
	524287	Manufacturer Assignable SPN (last entry)	J1939-73			19						

Note: While most SPNs can only be found in at most one PGN, there are exceptions. SPNs marked with a superscript 1 (¹) (for example, SPN 2419) are used in multiple PGNs.