



Exploration & Production

GENERAL SPECIFICATION

INSTRUMENTATION

GS INS 160

**Analogue Output Command
standard function
- HIC -**

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Rev.	Date	Notes



Contents

1. Scope	3
2. Reference documents.....	3
3. General description of functions	4
3.1 List of main functions	4
3.2 Functional scheme.....	4
4. Interface description.....	5
4.1 General description.....	5
5. Detailed description of functions	5
5.1 Standalone/cascade mode.....	5
5.2 Output value handling	5
5.3 Process shutdown function	6
5.4 analogue output fault status	6
6. Tuning parameters and variables	6
7. Representation and animation description animation (HMI).....	6
7.1 Events and values to be recorded.....	6
7.2 Alarm handling.....	6
7.3 Control display	6



1. Scope

The purpose of this document is to define the Standard Function for an Analogue Output Command.

In order to assist in understanding, this document should be read in conjunction with **GS INS 150**, Design Methods for System Configuration Standard Functions.

This standard shall not be considered for analogue outputs handled by PID standard; its application is dedicated to speed variator or choke valves.

Generally the set point is set by the operator, but in some cases it may be processed by an algorithm (e.g. Full Control of Well).

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	

Total General Specifications

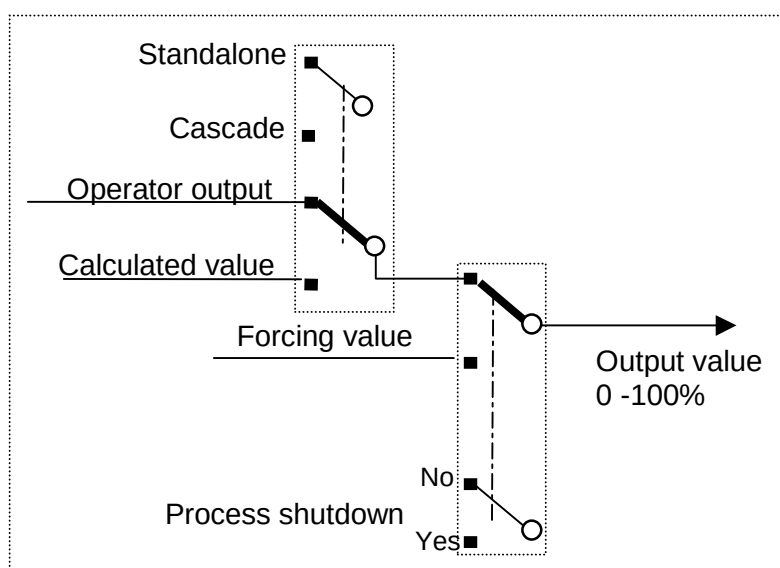
Reference	Title
GS INS 150	Design Method for System Configuration Standard Functions

3. General description of functions

3.1 List of main functions

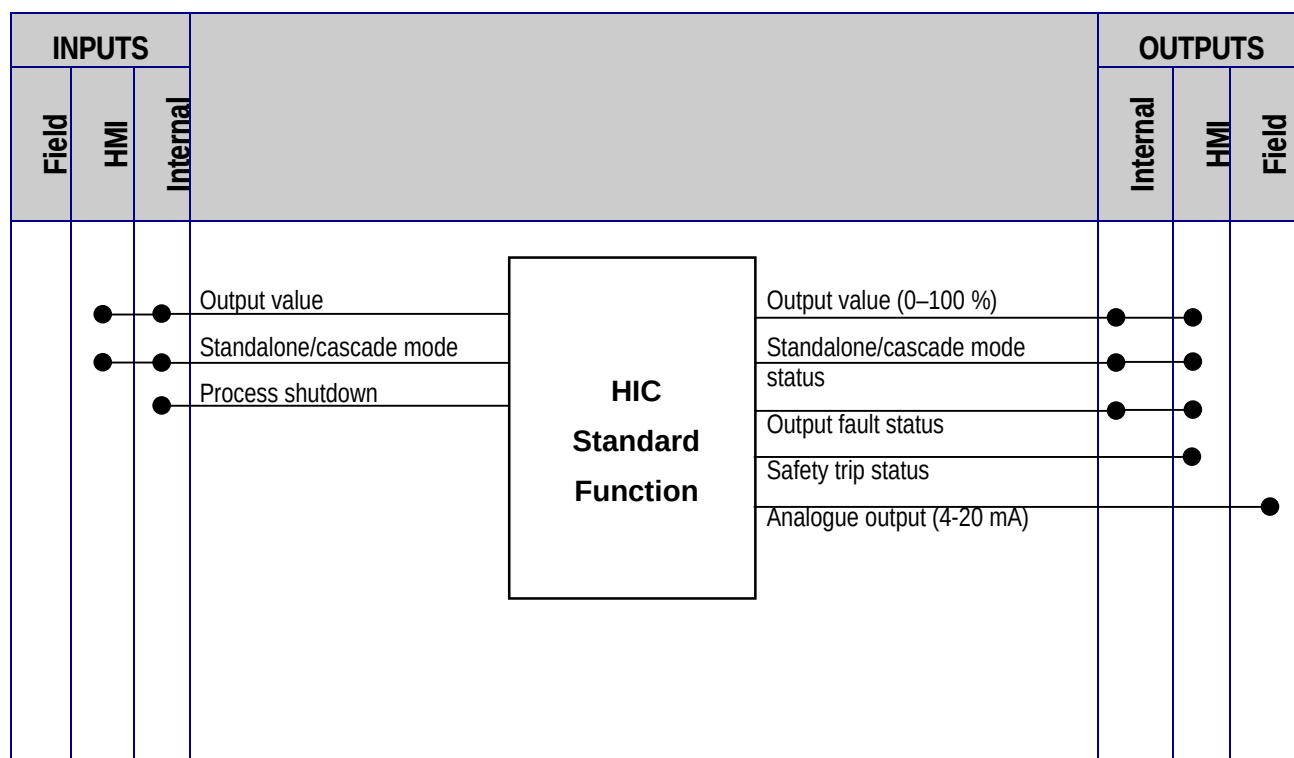
- Output adjustment
- Process shutdown (initiated for instance upon associated SDV status)
- Analogue output fault

3.2 Functional scheme



4. Interface description

4.1 General description



5. Detailed description of functions

5.1 Standalone/cascade mode

Standalone/cascade mode is normally set in standalone mode, except if higher level automatic control exists.

5.1.1 Cascade/standalone transitions

5.1.1.1 Cascade → Standalone transition

The HMI output value is aligned to the last calculated value.

5.1.1.2 Standalone → Cascade transition

The calculated output value is not affected by the HMI value

5.2 Output value handling

The Output value range is 0 to 100 %.

5.3 Process shutdown function

The process shutdown function is initiated upon activation of the corresponding input command (e.g. closed status of the associated SDV).

The output value is forced to the defined value and the safety trip animation is activated.

The operator can no longer access the output value.

5.4 analogue output fault status

This status is active when the signal is out of range or when the output card is faulty.

6. Tuning parameters and variables

PARAMETER	ACCESS LEVEL
Output limits (High and Low)	Method

7. Representation and animation description animation (HMI)

7.1 Events and values to be recorded

7.1.1 Events

- Standalone/cascade command (if available to the operator)
- Output fault status

7.1.2 Values

- Operator output value

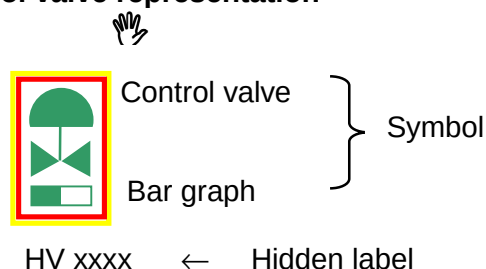
7.2 Alarm handling

Alarm Description	Priority
Output fault alarm	Level 1

7.3 Control display

The hereafter description gives examples of representation. However, they may be amended dependant on the DCS features.

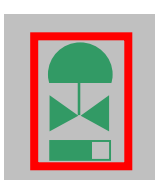
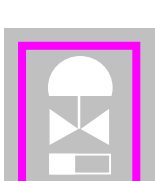
7.3.1 Control valve representation



HV xxxx instrument label appears on operator request (soft key)

Symbol and HV xxxx instrument tag are used as call-up area for the faceplate display

7.3.2 Animation of the control valve (Symbol and Frames)

Display description	Display	Valve and bargraph	Frames (Signalling and Alarm)
Opening > 5%		Fluid colour	NA
Opening ≤ 5%		White	NA
Safety trip		as above	External frame: White
Output fault		as above	Internal frame : Red flashing before acknowledgement Red steady after acknowledgement
Communication or system fault		White	External frame : Magenta

The bar graph shows the opening percentage of the valve. This information reflects the command signal or the position transmitter when available.

The events which drive these frame displays may not be mutually exclusive. Therefore, the precedence on the display, from most to least important, shall be : magenta, white, blue, yellow

7.3.3 Animation of the “hand” symbol

A full yellow “hand” symbol is displayed near the valve when output value is available to the operator.