



Exploration & Production

GENERAL SPECIFICATION

INSTRUMENTATION

GS INS 108

Instrumentation for the design of plant rooms and control rooms

02	10/04	Revised as per marking
01	10/03	Revised as per marking – Change of Group name and logo
00	02/01	First issue
Rev.	Date	Notes



Contents

1. Scope	3
2. Reference documents.....	3
3. Deviations from reference documents	4
3.1 Requirements for plant rooms	4
3.2 Control room	5
3.3 Gas and fire detection.....	5

1. Scope

This standard specification defines the conditions and precautions to be taken into account for installation of the instrumentation in technical rooms and control rooms.

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
IEC 60079	Electrical apparatus for explosive gas atmospheres
IEC 60364	Electrical installations of buildings
IEC 60529	Degrees of protection provided by enclosures (IP Code)
IEC 61000	Electromagnetic compatibility (EMC)

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
SIREP-WIB-EXERA report	"Ergonomics in process control rooms" No. M 2656 X 98 part 2: Design guideline

Total General Specifications

Reference	Title
GS CIV 404	Design and construction of offshore living quarters
GS ELE 031	Design of earthing and bonding systems
GS HVA 101	General requirements for heating, ventilation and air conditioning systems
GS INS 101	Instrumentation engineering, supply and construction general requirements
GS INS 107	Design and installation of instrumentation links

3. Deviations from reference documents

The end-products provided shall comply with the reference documents, as amended by the differences and/or options specified below.

However, all regulations or directives applicable in the country of destination of the structure shall be taken into consideration if they are stricter than the documents cited for reference.

3.1 Requirements for plant rooms

The plant rooms shall be designed to incorporate the following points:

3.1.1 Arrangement

The architecture of the room and access to it shall be designed so that control cabinets assembled in pairs can be brought in, carried vertically.

The raised floor shall be of computer standard with a minimum free height of 0.5 m.

The cabinets and MCT frames shall be designed to allow clear distribution of all cables.

The way the cabinets are positioned, preferably at right angles to a wall, shall be in accordance with the process and the functions of the cabinets.

The distribution frame and associated control cabinets shall be arranged in such a way as to minimize interlinking cable lengths.

HVAC: There must be no circulation of cooling liquid or condensation above the cabinets.

The furniture shall include at least: a desk, a chair and a cabinet or shelving for storing documentation.

Spare room will be provided for allowing installation of 30% additional cabinets unless otherwise specified within the project specifications.

3.1.2 Electrical wiring

There shall be, at least, near the desk, a power outlet fed by a 220 V inverter supply. This outlet shall be marked.

Cable entries into the plant room:

- Cables shall enter directly into the raised floor void; the point of entry inside the room must not be located under a cabinet.
- Entries in explosive areas shall use MCT frames approved for the area concerned.
- Outside of potentially explosive areas, entries through walls shall be removable and ingress protected to IP 65 as per [IEC 60529](#)
- In addition to the requirements of [IEC 60364](#), the physical distribution of the cables inside the MCT frames must be in accordance with safety/control segregation requirements.
- At least 50 % spare capacity must be allowed inside the MCT frames.

Cables under the raised floor shall be run on cable trays.

The earthing of marshalling/ system cabinets shall be achieved under the raised floor as per the [GS ELE 031](#)

3.2 Control room

An ergonomic study shall be carried out and focus on the ergonomic engineering of the consoles and its environment, including not only the workstations but also the ancillary equipment, in accordance with the recommendations of [SIREP-WIB-EXERA](#) report [No. M 2656 X 98 part 2](#): "Ergonomics in process control rooms: Design guidelines".

It will focus on the following points:

- Interaction between lighting and control screens
- Generation of noise by the equipment (power supplies, printers, etc.)
- Positioning of consoles to optimise movement of personnel
- Ergonomic engineering of consoles, incorporating, in addition to the control stations, all ancillary equipment such as communication resources, security control panels, and so on.

3.3 Gas and fire detection

Plant rooms shall include a gas and fire detection system.