

GENERAL SPECIFICATION

INSTRUMENTATION

GS EP INS 116

Instrument Cables

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1. Scope

This specification defines the minimum requirements for the design, manufacture, testing and supply of instrument cables for onshore and offshore oil & gas installations. This specification does not cover cables for instruments located subsea nor for electrical power supplies to Instrument control panels.

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

The equipment shall satisfy the requirements and regulations of the country of installation and specific standards referred to in this specification.

Where national regulations exist, their provisions and those of the standards and codes to which they refer shall apply, supplementing or amending the provisions of this document.

External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the effective date of this document.

Reference	Title
ASTM D2863	Standard Test Method for Measuring the Minimum Oxygen Concentration to support Candle-Like Combustion of Plastics (Oxygen Index)
EN 50288-7	Multi-element metallic cables used in analogue and digital communication and control - Part 7: Sectional specification for instrumentation and control cables
IEC 60028	International standard of resistance for copper
IEC 60079 (Parts 11; 14; 25)	Explosive atmospheres - Parts 11; 14; 25
IEC 60092 (Parts 350; 360; 376)	Electrical Installation in Ships - Parts 350; 360; 376
IEC 60228	Conductors of insulated cables
IEC 60331-21	Tests for Electric cables under fire conditions. Circuit integrity - Part 21: Procedures and requirements. Cables of rated voltage up to and including 0.6/1.0 kV
IEC 60332-3-22	Tests on electric cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A
IEC 60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)

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Reference	Title
IEC 60584-3	Thermocouples - Part 3: Extension and compensating cables - Tolerances and identification systems
IEC 60754	Test on gases evolved during combustion of materials from cables
IEC 61034	Measurement of smoke density of cables burning under defined conditions
IEC 61892-4	Mobile and fixed offshore units - Electrical installations - Part 4: Cables
ISO 7989	Steel wire and wire products Non-ferrous metallic coatings on steel wire
UL 1581 (partial)	Reference standard for electrical wires, cables, and flexible cords: Part about Physical properties after immersion in oil and part about Carbon - Arc and Xenon-Arc tests (1200)

Total General Specifications

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published in the applicable yearly collection.

Reference	Title
GS EP ELE 061	Minimum requirements for HV & LV cable sizing
GS EP ELE 161	Electrical cables
GS EP ELE 311	Cable trays/ladders
GS EP INS 101	Instrumentation Design
GS EP INS 109	Instrument cabinets
GS EP INS 110	Instrumentation for package units
GS EP TEL 191	Telecom Fibre Optic System Design
GS EP TEL 414	Telecommunication Cables

3. Terminology and Definitions

3.1 Definitions

There are five types of statements in this specification, the “shall”, “should”, “may”, “can” and must” statements. They are to be understood as follows:

Shall Is to be understood as mandatory. Deviating from a “shall” statement requires derogation approved by Company.