

GENERAL SPECIFICATION

INSTRUMENTATION

GS EP INS 115

Instrument Earthing

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1. Scope

This Specification defines the minimum requirements for the design and installation of the instrument earthing system, applicable for onshore and offshore Oil and Gas installations. This specification shall be read in conjunction with **GS EP ELE 031** which is also fully applicable.

2. Reference documents

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

The earthing systems 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 General Specification.

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
IEC 60079-14	Explosive atmospheres - Part 14: Electrical installations design, selection and erection
IEC 60364 (Parts 4-44; 5-54)	Low voltage electrical Installations - Parts 4-44; 5-54
IEC 61000-5-2	Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines - Section 2: Earthing and cabling
IEC 61557-4	Electrical safety in low voltage distribution systems up to 1,000 V a.c. and 1,500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding
IEC 61892 (Parts 6; 7)	Mobile and fixed offshore units - Electrical installations - Parts 6; 7

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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 031	Design of earthing and bonding systems for Offshore Installations
GS EP ELE 364	Electrical installations
GS EP EXP 105	Pre-commissioning Execution
GS EP INS 116	Instrument Cables

3. Terminology and 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.
Should	Is to be understood as strongly recommended to comply with the requirements of the specification. Alternatives shall provide a similar level of protection and this shall be documented.
May	Is to be understood as permission.
Can	Is to be understood as a physical possibility.
Must	Expresses a regulatory obligation.
Company	TOTAL E&P or any TOTAL E&P subsidiary.
Contractor	Any Party TOTAL E&P has signed a Contract with for the Engineering, Procurement, Construction, and Installation of a part of a project.
Vendor	The Package Vendor sub-contracted by the Contractor or by Company.
Supplier	The party that manufactures or supplies equipment, either individually or as a packaged unit.

3.1 List of Abbreviations

The following terms and abbreviations will be used in this document:

GS	Company's General Specification
ITR	Instrument Technical Room
IE	Instrument Earth
IPE	Instrument Protective Earth
IS	Intrinsically Safe
ISE	Intrinsically Safe Earth