

GENERAL SPECIFICATION

INSTRUMENTATION

GS EP INS 102

Instrumentation Identification

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1. Scope

This document specifies the minimum requirements for the instrument identification and numbering to be used for all offshore and onshore oil and gas installations. It specifically addresses:

- The coding or tags and numbering system for instruments and instrumented functions
- The use of the coding system for the computerized creation and administration of lists of instruments and functions.

2. Reference Documents

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.

The reference documents listed below form an integral part 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
ISA-5.1	Instrumentation Symbols and Identification

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 EXP 501	Equipment and piping numbering

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.

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Must	Expresses a regulatory obligation.
Company	TOTAL E&P or any TOTAL E&P subsidiary.
Contractor	Any Party that has signed a Contract with Company for the Engineering, Procurement, Construction, and Installation in part(s) or in full 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 for the project.

3.1 Definitions

For the purpose of this specification, the definitions given in [ISA-5.1](#) shall apply.

4. General Principles

An instrument shall be identified by its functions and not by its type or its operating principles, except in exceptional circumstances which is detailed later in this specification.

All Instruments shall be identified by a unique tag number.

This specification provides the tagging philosophy to be used for:

- Field Instruments
 - Instrument loops
 - Instruments
 - Valves
 - Motors.
- Instrument Equipment
 - Cabinets
 - Junction boxes
 - Cables
 - Tubing.

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4.1 Deviations from the External Reference Document

Instrument identification principles generally comply with the latest editions of the [ISA-5.1](#) reference. It is generally amended by the differences, choice of options and complementary information as indicated below.

ISA-5.1 section	Title	Comments
1	Purpose	Applicable
2	Scope	Applicable
3	Definitions	Applicable
4	Identification letters table	Definition of identification fields left as "user's choice" by ISA-5.1 2009 + special features

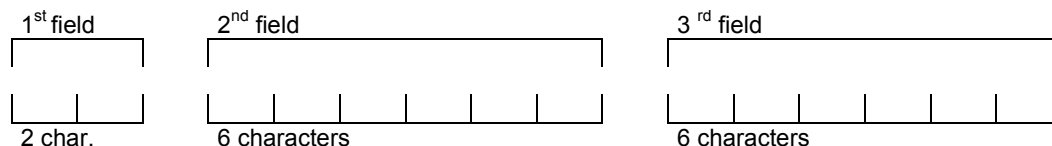
5. Field Instrument Tagging

All instruments shall be individually identified with a unique tag number.

When there are multiple instrument devices or functions on the same loop, then all such devices or functions shall be associated with the same loop tag.

5.1 Coding Structure

The alphanumeric code system used to identify instruments comprises of three fields:



The code structure as illustrated in table below represents a maximum. It is important to ensure that the control system and computer design tools support its use.

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Code Field	Structure	Description	Instrument Tag	Loop Tag
First	XX	Sector code (optional, not displayed if blank)	Maximum 2 Numeric characters	Maximum 2 Numeric characters
Second	YYYYYS	Instrument Function Code (Includes suffix)	Maximum 6 Alphanumeric characters	1 Alphabetical Character
Third	ZZZZZS	Serial Number (Includes suffix)	Maximum 6 Alphanumeric characters	Maximum 6 Alphanumeric characters

Example:

Loop Tag	Instrument Tag	Description/Comments
01-F-01010	01-FT-01010	Flow Transmitter
05-P-35001	05-PT-35001	Pressure Transmitter

Note: The “-” is used for convenience to separate fields and does not form part of the field count.

5.2 Coding Definitions

5.2.1 First Field - Sector Code

This is the sector code comprising a maximum of 2 numerical characters.

This code corresponds to the sector or structure code according to [GS EP EXP 501](#), and based on defined geographical, process or structural boundaries within a plant or field.

When a control loop involves several sectors, the unit considered for all instruments of the loop shall be the sector of the initiating measurement.

5.2.2 Second Field - Instrument Function Code

This is the instrument or function code comprising a maximum of 6 alphanumeric characters, which may include a suffix if necessary. The first character, which must be a letter, represents the initiating variable (process measured variable or, exceptionally, the first letter of a group of letters with a special meaning).

5.2.2.1 Standard Instrument Function Codes

The following table, which is based on [ISA-5.1](#), table 4.1, defines the standard instrument function codes.

Reading the table:

- Normal characters = initiating variables or functions strictly identical to the ISA document (relevant ISA notes also apply)
- *Italic characters* = fields left free by ISA and specified by Company