

GENERAL SPECIFICATION

INSTRUMENTATION

GS EP INS 150

**Design method for system configuration -
Standard functions**

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1. Scope

The purpose of this document is to define the Design Methodology for Control and Safety System Configuration Standard Functions. The principle of this methodology is the development of Standard Functions which are re-usable within a hierarchical structure.

These Standard Functions are key requirements for the development of the Functional Analysis as defined in [GS EP INS 131](#).

These Standard Functions shall define the operating and control requirements of equipment in both normal and degraded conditions, along with its operator interface definition.

A set of Standard Functions Specifications, listed in § 9, has been prepared and detailed within the [GS EP INS 196](#), [GS EP INS 197](#) and [GS EP INS 198](#), based on the general principles defined in this document. It is believed that these Standard Functions cover the majority of cases. However, each project shall review its specific requirements and prepare supplementary Standard Functions as necessary. Company subsidiaries may use their own library of Standard Functions when available.

This specification requires that the methodology of using Standard Function when configuring instrument systems is maintained in all cases. These shall always be fully tested in accordance with Appendix 4 of the [GS EP INS 134](#), early in the software lifecycle to prove their operation meets the required functionality. This will therefore assist in reducing the overall configuration development time, while at the same time improving overall quality.

All Standard Functions shall be fully documented.

2. Reference documents

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
Not applicable	

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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 INS 131	Standards Functions and Functional Analysis Development Requirements
GS EP INS 134	Design and supply of integrated control and safety system
GS EP INS 196	Input and Output Standard Functions
GS EP INS 197	Process Standard Functions
GS EP INS 198	Safety and Fire & Gas Standard Functions

3. Glossary

DCS	Distributed Control System
ESD	Emergency Shut-Down
FGS	Fire and Gas System
HMI	Human Machine Interface
ICSS	Integrated Control and Safety System
MCC	Motor Control Centre
PCS	Process Control System
PDS	Process Data Server
PSS	Process Safety System
UCP	Unit Control Panel (package)

4. Definitions

4.1 Standard Function

A Standard Function describes all logic and calculation functions that characterise either process equipment (transmitter or actuator), or control algorithm management (pressure/temperature compensated flow, totalized flow, duty/backup/standby, etc.).

These functions may be carried out by the Process Control System (PCS), the safety system (ESD system, PSS and FGS), or the package control panel (UCP).

It also describes the associated Human Machine Interface (HMI) representation. Access to operator commands or specific faceplates (pop-up) are detailed in the different Standard Functions, but might be changed in function of Systems features.

All dynamic elements / objects shall be associated with a dedicated faceplate showing detailed information.