

GENERAL SPECIFICATION

ELECTRICAL

GS EP ELE 013

Electrical requirements for generating units

04	10/2012	Performances update and minor revisions
03	01/2011	General Revision
02	10/2008	Addition of PMS
01	10/2005	Addition of "EP" root to GS identification
00	10/2004	First issue
Rev.	Date	Purpose of the revision

Owning entity: DEV/TEC	Managing entity: DEV/TEC/ELE
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1. Scope

This specification defines the minimum requirements for the design, manufacture, inspection and testing of electrical equipment provided for generating units above 250 kVA.

This specification shall be read in conjunction with the General Specification **GS EP ELE 011** and the corresponding generating unit Project specification, drawings and data sheets, if any.

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.

Design and engineering shall conform as a minimum requirement to the current edition of the following in order of precedence:

- Applicable laws and regulations of the country in which the system will be operated. In cases where no "local" regulations exist, the French laws and regulations shall be used
- Company Particular Specifications and data sheet (if any)
- Company General Specifications
- Applicable International Electro technical Commission (IEC) Publications
- Applicable CENELEC Standards
- Applicable recognized standards and codes (UTE, BS, VDE, etc.) where IEC Publications have not yet been issued.

Reference	Title
IEC 62402	Obsolescence management - Application guide

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.

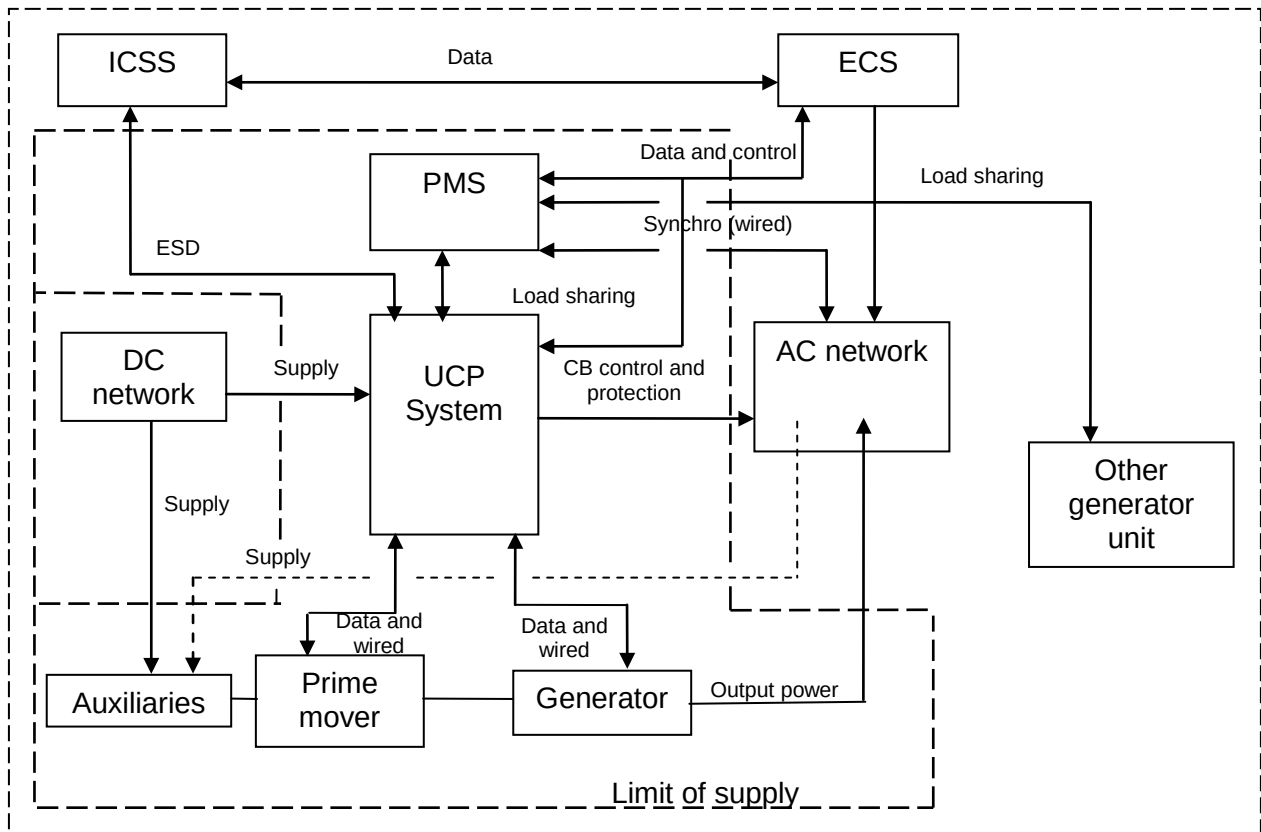
Reference	Title
GS EP ELE 011	Electrical requirements for packaged units
GS EP ELE 113	AC generators
GS EP ELE 137	Distribution boards
GS EP ELE 151	DC Uninterruptible Power Systems (UPS)

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Reference	Title
GS EP INS 110	Instrumentation for package units
GS EP INS 135	Cyber Security requirements for design and supply of ICSS and Package systems
GS EP MEC 011	Rotating Machine Package Specification - Diesel Engine Driven Emergency Generator
GS EP TEC 007	Obsolescence and Lifetime Cycle Management

3. Design Basis

3.1 Standard general diagram



ICSS: Integrated Control and Safety System

ECS: Electrical Control System

PMS: Power Management System (Active and Reactive load sharing system)

UCP System: Unit Control Panel

DC Network: Direct Current Network

AC Network: Alternative Current Network

ESD: Emergency Shut Down

Note: Wired means hardwired signal and Data means data exchanged through a serial link

3.2 Generator

The generator shall be in accordance with the general specification [GS EP ELE 113](#).

3.3 Unit Control Panel (UCP) and Power Management System (PMS)

The Unit Control Panel and the PMS shall be in accordance with the general specifications [GS EP ELE 137](#), [GS EP INS 110](#) and [GS EP INS 135](#).

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The generating unit shall be considered as a P3 type package as per **GS EP INS 110**.

The UCP shall allow easy communication with an Electrical Control System via a serial link.

3.3.1 Electrical protection

Unless otherwise specified, the generating unit protections and all hardware components shall be provided by the Package Supplier and installed into the Unit Control Panel.

The protections relay shall be of digital type with full testing facilities to allow secondary injection of the relays.

The protection system shall be supported by a software library of complete protection functions as defined in this specification.

The protections relay shall encompass a disturbance and fault recorder able to store at least 2.5 seconds of data triggered on status change and/or fault conditions with an adjustable time frame (typically [-500;+2000] ms).

A Maintenance Workstation shall allow users to activate all protections and logic. For all functions user's guide with aid of screen menus and windows, shall be available.