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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 12786-2021

Replacing GB/T 4712-2008

**General technical conditions for automatic internal combustion
engine power stations**

自动化内燃机电站通用技术条件

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1 Scope

GB/T 12786-2021 is the Chinese national standard on general technical conditions for automatic internal combustion engine power stations, in the field of electrical engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 30 April 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2021. Classification: ICS 29.160.40, CCS K52. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the classification and grading, technical requirements, quality assurance regulations, completeness, and completeness of automated internal combustion engine power stations (hereinafter referred to as power stations). Marking, packaging, storage and transportation, manufacturer's guarantee, etc. This standard applies to land-use AC power frequency internal combustion engine power stations with a power range not exceeding 5000kW. DC power station, 60Hz power station can participate Use as per.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated

reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 755-2019 Rotating electric machine rating and performance

GB/T 2423.16-2008 Environmental testing of electric and electronic products Part

3 Terms and definitions

GB/T 2820.1-2009, GB/T 2820.2-2009, GB/T 2820.3-2009, GB/T 2820.4-2009, GB/T 2820.5- Defined in.2009, GB/T 2820.6-2009, GB/T 2820.12-2002, GB/T 37089-2018, GB/T 6072.1, JB/T 8194 And the following terms and definitions apply to this document.

3.1 Stand-alone automation On a single power station, it can automatically realize the functions of unit startup, power supply loading and power failure, and shutdown, and can display the main performance of the unit Parameters and operating status.

3.2 Linkageautomation Linked with the mains or other power stations, and automatically realizes the start, power supply, and shutdown of the unit by detecting whether the mains or other power stations are faulty Features.

3.3 Paraleling automation When two or more power stations are in parallel, the unit's functions of starting, paralleling, de-training and shutting down are automatically realized.

3.4 Paralelinggridautomation When it is connected to the mains grid, it automatically realizes the functions of starting, connecting to the grid, off-grid and stopping the unit.

3.5 Localautomation On the power station side, it can automatically realize the functions of unit startup, power supply with load, power failure, and shutdown, and can display the main performance parameters of the unit And running status.

3.6 Remote automation The automatic start and stop functions of the unit can be realized remotely, and the main performance parameters and operating status of the unit can be displayed.

4 Control device and switchgear

GB/T 2820.5-2009 AC generator set driven by reciprocating internal combustion engine Part

4.1 Classification

4.1.1 According to the automation mode, power stations can be divided into. stand-alone automation, linkage automation, parallel automation, and grid-connected automation.

4.1.2 According to the control mode, the power station can be divided into. local automation and remote automation.

4.1.3 According to the switching time, the power station can be classified according to the requirements of GB/T 2820.12-2002, see Table 1, the typical types specified in Table 1. See Table 2 for examples. Table

1 Power stations used in special environments (such as chemical pollution, radiation, flammable gas, etc.) should be specified. In order to ensure the function and performance of the power station, the user should put forward relevant requirements and parameters to the power station manufacturer in the product specification, and its specific terms It should meet the requirements of GB/T 2820.7.

5.5 Appearance The appearance of the power station should meet the following requirements.

- a) The welding should be firm, and the welding seam should be uniform, free of defects such as cracks, weld penetration, undercut, missing welding and pores; no residues such as welding slag and welding flux;
- b) The outer surface of the car body (outer cover) should be flat;
- c) The surface of the control panel of the power station should be flat, reasonably wired, safe, well-contacted, well-defined, neat and beautiful, and the color of the wire should conform to The provisions of GB/T 4026-2019.
- d) The paint film of the painted part should be uniform without cracks, shedding, flow marks, bubbles, scratches, etc.;
- e) The color of the outer surface of the box body (outer cover) should meet the requirements of the product specification;
- f) The coating of the electroplated parts should be smooth, and there should be no leakage of plating spots, rust, etc.;
- g) Fasteners should have anti-loose measures and no looseness;
- h) The electrical wiring is reasonable, safe and tidy;
- i) Fire-fighting facilities, appliances, spare tools and spare accessories should be fixed and installed firmly.

5 Generator set

GB/T 2820.6-2009 AC generator set driven by reciprocating internal combustion engine
Part

5.6 Structure

5.6.1 Dimensions The external dimensions of the power station should comply with the product specifications.