

ICS 29.160.20

CCS K 21



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

GB/T 27989-2011

**Fundamental technical requirements for small hydraulic
generators**

小型水轮发电机基本技术条件

Issued on: December 30, 2011

Implemented on: June 1, 2012

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by the People's Republic of China Ministry of Water Resources. This standard by the Ministry of Water Resources Bureau of Comprehensive Development. This standard was drafted. MWR product quality Standards Institute, Hangzhou JME Engineering Company Limited. The main drafters of this standard. Chen Wei, Zhou Zhengming, Chang-Lu, Yu Jianfeng, Zhu Chunying. Small hydro basic technical conditions

1 Scope

China's national fundamental technical requirements for small hydraulic generators. It specifies the scope of supply, the testing, the inspection, the marking, packaging, transport and storage, the safety, the installation, commissioning and guarantee period, the spare parts, the special tools and the technical documentation required for a small hydro generator. It applies to three-phase salient pole synchronous generators at 50 Hz, of 125 kVA and above and below 12 500 kVA, in vertical or horizontal configuration, excluding bulb turbine sets; 60 Hz machines may refer to it. Small hydro is a distinct industry rather than a scaled-down version of large hydro, and this standard is written for it. A small station is built on a river a long way from anywhere, frequently by a developer who is not an electrical utility, and it is operated by a small crew or remotely. The machine that goes into it is bought as a package rather than engineered individually, and what the purchaser needs from a standard is therefore not only what the generator must do electrically but what must come with it: the scope of supply, the documentation, the spare parts, the special tools, the commissioning support and the guarantee. Those clauses occupy as much of the document as the technical requirements, and they are what prevents a machine arriving without the drawings needed to install it or the tools needed to maintain it. The technical requirements themselves are the electrical and mechanical properties of a salient pole synchronous machine driven by a water turbine: the rating and the voltage to GB/T 156, the insulation

and temperature rise to GB 755, the excitation, the overspeed capability that a hydro machine must have because a load rejection lets the turbine run away, the vibration and the bearing performance, and the tests by which each is verified. Issued on 30 December 2011 and in force since 1 June 2012.

This standard specifies the technical requirements for small hydro product scope of supply, testing, inspection, marking, packaging, transportation and storage, security Installation, commissioning and guarantee period, spare parts, special tools, technical data of the basic requirements. This standard applies to three-phase, 50Hz, 125kVA and above, 12500kVA less vertical or horizontal (except lamp Tubular) Convex Pole synchronous generator (hereinafter referred to as hydro). Frequency of 60Hz Hydro also be implemented by reference.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 156 standard voltage

GB/T 191 Packaging - Pictorial signs

GB 755 rotary motor fixed and performance

GB/T 1029 Test Methods for Three-phase synchronous motors

GB/T 2900.25 Electrotechnical terminology rotary motor GB /Measurement of loss and efficiency of the motor T 5321 calorimetry

GB/T 7894-2001 hydroelectric basic technical conditions

GB/T 8564 Specification for installation of hydro-generating unit

GB/T 10069.1 rotating electrical machines - Part

3 Terms and Definitions

Terms and definitions GB 755 and GB/T 2900.25 as defined in this document apply.