

(PREVIEW)

## *Indian Standard*

# AC GENERATORS DRIVEN BY RECIPROCATING INTERNAL COMBUSTION ENGINES - SPECIFICATION

## PART 2 ALTERNATORS RATED ABOVE 20 kVA AND UP TO 1250 kVA

### 1 SCOPE

**1.1** This standard (Part 2) specifies the requirement for ac generators together with their exciters driven by reciprocating internal combustion engines and generators having rated outputs above 20 kVA and up to 1250 kVA at the specified conditions.

**1.2** This standard covers generators with the following excitation systems:

- a) Direct excitation adopting static exciters (magnetic or electronic);
- b) Brushless AC exciters;
- c) DC exciters; and
- d) Pilot exciters besides exciters in (b) or (c) above.

The excitation power in these cases is derived from the prime mover of the alternator.

The closed loop (involving an automatic voltage regulator) or open loop of excitation control may be used in the excitation systems.

**1.3** This standard does not cover generators intended for use in following special applications. However, machines built to this standard may be adopted with suitable modification for these applications when agreed to between the manufacturer and the purchaser/user.

- a) Exposure to:
  - 1) abrasive or conducting dust or chemical fumes,
  - 2) combustible dust,
  - 3) dusts/fumes of explosives,
  - 4) flammable gases,
  - 5) lint,
  - 6) nuclear radiation,
  - 7) oil vapour,
  - 8) salt air, and
  - 9) steam.
- b) Operation in mines, entirely enclosed boxes, poorly ventilated rooms, damp or very dry places.
- c) Operation at speeds other than rated (this excludes normal overspeed).

- d) Exposure to ambient temperatures above 40°C or below 0°C.
- e) Exposure to cooling media where the temperature values depart from those listed in this standard.
- f) Exposure to abnormal shock or vibration.
- g) Where departure from rated voltage or frequency, or both exceed limits given in this standard.
- h) Where the phase voltages, or currents, or both, are severely unbalanced.
- j) Where low noise levels are required.
- k) Exposure to external mechanical loads involving thrust or overhang.
- m) Subject to operation in an inclined position.
- n) Subject to intermittent, periodic, or varying duty.

**1.4** This standard does not apply to the following types of machines for which other Indian Standards are already available:

- a) Turbine type generators (see IS 5422 : 1979), and
- b) Electrical generators for use in ships [see IS 10242 (Part 3/Sec 1) : 1983]

## **2 REFERENCES**

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

### **ANNEX A**

#### **(Clause 2)**

#### **LIST OF REFERRED INDIAN STANDARDS**

<i>IS No.</i>	<i>Title</i>
1231: 1974	Dimensions of three-phase foot-mounted induction motors ( <i>third revision</i> )
3043 : 1987	Code of practice for earthing ( <i>first revision</i> )
4691: 1985	Degrees of protection provided by enclosures for rotating electrical machinery ( <i>first revision</i> )
4722 : 1992	Rotating electrical machines
4728 : 1975	Terminal marking and direction of rotation for rotating electrical machinery ( <i>first revision</i> )
4889 : 1968	Methods of determination of efficiency of rotating electrical machines
5422 : 1969	Turbine type generators
6362 : 1971	Designation of methods of cooling for rotating electrical machines
7132: 1973	Guide for testing synchronous machines
7306 : 1974	Methods of determining synchronous machine quantities from tests
10242 (Part 3/Sec 1) : 1983	Electrical installations in ships: Part 3 Equipment, Section 1 Generators and motors
12075 : 1987	Mechanical vibration of rotating electrical machines with shaft heights 56 mm and higher-measurement, evaluation and limits of vibration severity
12802 : 1989	Temperature-rise measurements of rotating electrical machines

