

(PREVIEW)

*Indian Standard*

# DIRECT ACTING INDICATING ANALOGUE ELECTRICAL MEASURING INSTRUMENTS AND THEIR ACCESSORIES

## PART 1 DEFINITIONS AND GENERAL REQUIREMENTS

### 1 SCOPE

**1.1** This standard (Part 1) applies to direct acting indicating electrical measuring instruments having an analogue display, such as:

- a) Ammeters and voltmeters;
- b) Wattmeters and varmeters;
- c) Frequency meters of pointer and vibrating-reed types;
- d) Phasemeters, power-factor meters and synchrosopes;
- e) Ohmmeters, impedance meters and conductance meters; and
- f) Multi-function instruments of the above types.

**1.2** It also applies to certain accessories used with these instruments, such as:

- a) Shunts; and
- b) Series resistors and impedance elements.

**1.3** If other accessories are associated with instruments, this standard is applicable to the combination of the instrument and the accessory provided that the adjustment has been made for the combination.

**1.4** This standard also applies to a direct acting indicating electrical measuring instrument whose scale marks do not correspond directly to its electrical input quantity, provided that the relationship between them is known.

**1.5** This standard also applies to instruments and accessories having electronic devices in their measuring and/or auxiliary circuits.

**1.6** This standard does not apply to special purpose instruments, which are covered by their own Indian Standards.

**1.7** This standard does not apply to special purpose devices, which are covered by their own Indian Standards when they are used as accessories.

**1.8** This standard does not contain either requirements

for protection against environmental conditions or the relevant tests. However, when necessary, and then only by agreement between the manufacturer and the user, tests to approximate the conditions of use may be selected from IS 9000 series.

This standard does not specify requirements concerning dimensions of instruments (*see* IS 2419) or accessories.

### 2 REFERENCES

**2.1** The following standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1248	Direct acting indicating analogue electrical measuring instruments and their accessories:
(Part 2) : 2003	Special requirements for ammeters and voltmeters ( <i>third revision</i> )
(Part 3) : 2003	Special requirements for wattmeters and varmeters ( <i>third revision</i> )
(Part 4) : 2003	Special requirements for frequency meters ( <i>third revision</i> )
(Part 5) : 2003	Special requirements for phase meters, power factor meters and synchrosopes ( <i>third revision</i> )
(Part 8) : 2003	Special requirements for accessories ( <i>third revision</i> )
(Part 9) : 2003	Test methods ( <i>third revision</i> )
1885	Electrotechnical vocabulary:
(Part 11) : 1966	Electrical measurements
(Part 80) : 1994	General terms on measurements in electricity
(Part 81) : 1993	Electrical measuring instruments
2419 : 1979	Dimensions for panel mounted indicating and recording instruments
3722	Letter symbols and signs used in electrical technology:
(Part 1) : 1983	General guidance on symbols and subscripts ( <i>first revision</i> )
(Part 2) : 1983	Reference tables for symbols and subscripts ( <i>first revision</i> )

**IS 1248 (Part 1) : 2003**

<i>IS No.</i>	<i>Title</i>
8197 : 1976	Terminal markings for electrical measuring instruments and their accessories
9000	Basic environmental testing procedures for electronic and electrical items:
(Part 7)	Impact tests,
Section 1 : 1979	Shock test
Section 2 : 1979	Bump test
Section 3 : 1979	Drop and topple test
Section 4 : 1979	Free fall test
Section 5 : 1979	Free fall repeated test

<i>IS No.</i>	<i>Title</i>
(Part 8) : 1981	Vibration (sinusoidal) test
9249 (Part 1) : 1979	Safety requirements for indicating and recording electricals measuring instruments and their accessories: Part 1 Common safety requirements for instruments
9858 : 1981	Safety requirements for electronics measuring apparatus
12032 (Part 2) : 1987	Graphical symbols for diagrams in the fields of electrotechnology: Part 2 Symbols elements, qualifying symbols and other symbols having general applications