

# JIS

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**Direct acting indicating analogue  
electrical measuring instruments  
and their accessories  
Part 9 : Recommended test  
methods**

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In the event of any doubts arising as to the contents,  
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This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. By this establishment **JIS C 1102 : 1981** is withdrawn and replaced by this Standard.

### **Constitution of Standard**

**JIS C 1102** consists of the following nine parts under the common title *Direct acting indicating analogue electrical measuring instruments and their accessories*.

Part 1 : *Definitions and general requirements common to all parts*

Part 2 : *Special requirements for ammeters and voltmeters*

Part 3 : *Special requirements for wattmeters and varmeters*

Part 4 : *Special requirements for frequency meters*

Part 5 : *Special requirements for phase meters, power factor meters and synchroscopes*

Part 6 : *Special requirements for ohmmeters (impedance meters) and conductance meters*

Part 7 : *Special requirements for multi-function instruments*

Part 8 : *Special requirements for accessories*

Part 9 : *Recommended test methods*

The requirements are not included in **JIS C 1102-9**. The requirements are specified in **JIS C 1102-1** to **C 1102-8** and the reference to each test item of **JIS C 1102-9** is also shown in the said Standard.

For the test items stated below among the test items in **JIS C 1102-9** the corresponding requirements are not specified in **JIS C 1102-1** to **C 1102-8**. These performances are normally agreed between the manufacturer and the user, but the items are included in **JIS C 1102-9** for standardization of test methods.

Tracking error

Variation due to simultaneous influence of voltage and power factor

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# Direct acting indicating analogue electrical measuring instruments and their accessories

## Part 9 : Recommended test methods

**Introduction** This Japanese Industrial Standard has been prepared based on IEC 51-9, *Direct acting indicating analogue electrical measuring instruments and their accessories Part 9 : Recommended test methods*, published in 1988 as the fourth edition, Amendment 1 (1994) and Amendment 2 (1995) without modification of technical contents.

Standards of JIS C 1102-2 to JIS C 1102-8 are referred to as "detail specifications" in this Standard.

### 1 Scope and general test conditions

#### 1.1 Scope

This Standard contains recommended test methods for direct acting indicating analogue electrical measuring instruments and their accessories.

#### 1.2 General test conditions

The test methods described in this Standard shall be applied under the following conditions unless otherwise specified.

##### 1.2.1 Reference conditions

Reference conditions shall be according to Table I of JIS C 1102-1 to -8. Where a reference range is specified, tests shall be performed at both limits of the reference range.

##### 1.2.2 Parallax

Note : Care should be taken to avoid the effect of parallax error when taking instrument readings.

For an edgewise instrument, the line of vision should be perpendicular to the instrument dial at the index tip.

For an instrument having a mirror scale, the line of vision should be such that the index tip is coincident with its reflection in the mirror.

##### 1.2.3 Tapping

Immediately prior to taking a reading, either the instrument or its support shall be tapped lightly as with a finger or the eraser end of a pencil.

However, tapping is not permitted in certain tests such as those for determining intrinsic error, return to zero and the effects of shock and vibration, as stated in these test methods.