

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS C 1302 : 2018

(JEMIMA/JSA)

Insulation resistance testers

ICS 17.220.20;29.080.01;29.240.01

Reference number : **JIS C 1302 : 2018 (E)**

C 1302 : 2018

Date of Establishment: 1968-04-01

Date of Revision: 2018-02-20

Date of Public Notice in Official Gazette: 2018-02-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for IEC area

JIS C 1302:2018, First English edition published in 2018-07

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2018

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

KK/AT

PROTECTED BY COPYRIGHT

Contents

| | Page |
|---|------|
| Introduction | 1 |
| 1 Scope | 1 |
| 2 Normative references | 2 |
| 3 Terms and definitions | 2 |
| 3.1 Items relating to performances | 2 |
| 3.2 Items relating to safety and structure | 4 |
| 4 Types of insulation resistance testers | 4 |
| 5 Recommended values of rated output voltage and effective maximum indicated value | 5 |
| 6 Requirements | 7 |
| 6.1 Rated operating condition | 7 |
| 6.2 Permissible range of tolerance and deviation | 7 |
| 6.3 Open-circuit voltage | 8 |
| 6.4 Rated current | 8 |
| 6.5 Short-circuit current | 8 |
| 6.6 Output voltage | 8 |
| 6.7 Influence at d.c. voltage superimposing | 8 |
| 6.8 Influence of environment | 8 |
| 6.9 Instantaneous maximum voltage | 9 |
| 6.10 Battery check facility | 10 |
| 6.11 Possible number of measurements | 10 |
| 6.12 Safety | 10 |
| 6.13 Measuring terminals | 10 |
| 6.14 Resistance to vibration | 10 |
| 6.15 Overvoltage protection | 11 |
| 6.16 Type indication | 11 |
| 6.17 Additional functions | 11 |
| 7 Marking and operating instructions | 12 |
| 7.1 Marking on product | 12 |
| 7.2 Operating instructions | 12 |
| 8 Tests | 13 |
| 8.1 Test conditions and reference conditions | 13 |
| 8.2 Permissible range of tolerance, intrinsic uncertainty and deviation | 13 |
| 8.3 Open-circuit voltage | 13 |
| 8.4 Rated current | 14 |
| 8.5 Short-circuit current | 14 |

| | | |
|------------------------|---|----|
| 8.6 | Output voltage | 14 |
| 8.7 | Influence at d.c. voltage superimposing | 15 |
| 8.8 | Influence of environment | 15 |
| 8.9 | Instantaneous maximum voltage | 16 |
| 8.10 | Battery check facility | 16 |
| 8.11 | Possible number of measurements | 16 |
| 8.12 | Safety | 16 |
| 8.13 | Measuring terminals | 17 |
| 8.14 | Resistance to vibration | 17 |
| 8.15 | Overvoltage protection | 17 |
| 8.16 | Type indication | 17 |
| 8.17 | Additional functions | 18 |
| 8.18 | Marking and operating instructions | 18 |
| 8.19 | Records of test results | 18 |
| 9 | Inspections | 18 |
| 9.1 | Type inspection | 18 |
| 9.2 | Acceptance inspection | 18 |
| Annex JA (informative) | Comparison table between JIS and corresponding International Standards | 19 |

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Electric Measuring Instruments Manufacturers' Association (JEMIMA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 1302:2014** is replaced with this Standard.

However, **JIS C 1302:2014** may be applied in the **JIS** mark certification based on the relevant provisions of Article 19 Clause 1, etc. of the Industrial Standardization Law until February 19, 2019.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Insulation resistance testers

Introduction

This Japanese Industrial Standard has been prepared based on IEC 61557-1:2007, Edition 2, and IEC 61557-2:2007, Edition 2, with some modifications of the technical contents.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standards. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies portable insulation resistance testers of built-in battery type, having a rated output voltage not exceeding 1 000 V, which are used for the measurements of the following a) to e).

- a) **Insulation measurement of low voltage distribution path** The insulation measurement of paths and devices which are powered off in a distribution system up to 1 000 V a.c. and 1 500 V d.c.
- b) **Insulation measurement of device, appliance, component, etc.**
NOTE : The photovoltaic array not in power generating state corresponds to an appliance or a component.
- c) **Insulation measurement of high-voltage equipment**
- d) **Insulation measurement of photovoltaic array in power generating state by short-circuiting P-N terminals**
- e) **Insulation measurement of photovoltaic array in power generating state without short-circuiting P-N terminals**

NOTE : The International Standards corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 61557-1:2007 *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c.—Equipment for testing, measuring or monitoring of protective measures—Part 1: General requirements*

IEC 61557-2:2007 *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c.—Equipment for testing, measuring or monitoring of protective measures—Part 2: Insulation resistance (overall evaluation: MOD)*

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21-1.