

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

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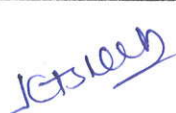


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TEST REPORT

Sheet 1 of 3

| | | |
|---|---|--|
| NAME & ADDRESS OF CUSTOMER RISHABH INSTRUMENTS PVT. LTD., F-31, MIDC, SATPUR, NASHIK - 422 007 INDIA. | REPORT NO.: T.03/11/351-1 DATE: 31/12/2007 | |
| | CUSTOMER REF No.: RIPL/PSK/ERDA/11- 2007/03 dtd. 1/11/2007 | |
| | DATE OF SAMPLE RECEIPT | DATE OF TESTING |
| | 2/11/2007 | 19/12/2007 |
| SAMPLE DESCRIPTION 3Ph3W/4W Multifunctional Instruments with option RS 485 Output Type : RISH Master 3430 Input/Freq : 110V (L-L) / 45-66 Hz Current : 5A Auxiliary Voltage : 12-48 V DC Class : 0.2 Month/Year : March 2007 Make : Rishabh | SAMPLE IDENTIFICATION SR. NO. 07/11/8386 ERDA CODE NO. TDCCALWO0055690 | |
| TEST DETAILS 1. Spring hammer test 2. Shock test 3. Impulse voltage test | TEST SPECIFICATION Test as per customer requirement procedure as per IS: 13779, 1999 Cl. No. 12.3.3 Tests as per customer requirement and as per IEC-68-2-27 Tests as per customer requirement and as per IEC-688:2001 Cl. No. 6.20 | |
| REMARK - The above Multifunction instrument conforms to the requirements of the standard in respect of the tests carried out. | | |
|  PREPARED BY |  CHECKED BY |  APPROVED BY |

- Note: 1. This report relates only to the particular sample received in good condition for testing at ERDA.
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3. Publication of this report requires prior permission in writing from Director, ERDA.
4. Only the tests asked for by the customer have been carried out.

No 1689368



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TEST REPORT No. T.03/11/351-1

Dated: 31/12/2007

SHEET 2 OF 3

| Sr. No. | Particular of tests & Cl. No. | Requirement as per specification | Obtained value | Remarks |
|---------|---|--|---|----------|
| 1. | Spring hammer test (As per customer requirement procedure as per 12.3.3 of IS: 13779, 1999) | The Multifunction Instrument shall be mounted in its normal working position and the spring hammer shall act on the outer surfaces of the Multifunction Instrument cover (including windows) and on the terminal cover with a kinetic energy of $0.22 \text{ Nm} \pm 0.05 \text{ Nm}$. The Multifunction Instrument case and terminal cover shall not sustain damage, which could affect the function of the Multifunction Instrument, and it is not possible to touch live parts. | No damage observed in Multifunction Instrument on application of spring hammer and function of all three meters was not affected. | Conforms |
| 2. | Shock test [Test procedure as per as per IEC-68-2-27] | The test shall be carried out as per IEC 60068-2-27, under the following conditions: -multifunction meter in non-operating condition, without the packing -half sine pulse -peak acceleration: $3 \times 15g$ -3 shocks 6 direction After the test, the meter to function normally after the test. No mechanical damage should occur. | Meter was subjected to shock test. After the test, the meter showed no damage or change of the information and operated correctly. | Conforms |

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SHEET 3 OF 3

TEST REPORT No. T.03/11/351-1

Dated: 31/12/2007

| Sr. No. | Particular of tests & Cl. No. | Requirement as per specification | Obtained value | Remarks |
|---------|---|--|---|----------|
| 2. | Impulse voltage test [Test procedure as per as per IEC-60688:A2:2001 & clause no.6.20] | <p>The impulse voltage wave 5kV (1.2/50 micro sec) is applied 3times with one polarity and repeated with the other polarity. Min. time between the impulses shall be 5 sec.</p> <p>a) Between auxiliary terminal and input voltage + current terminals.</p> <p>b) Between current and voltage terminal.</p> <p>Any flashover (capacitance discharge) shall be considered a criterion of failure unless occurring in a component designed for such.</p> | <p>Waveform chopped in all 3 shots in both the polarities.</p> <p>Withstood 3 shots in both the polarities</p> <p>No flashover observed during the test. After the test meter operated correctly.</p> | Conforms |

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