

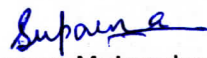
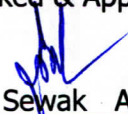
Indent No. : 20161438 Specification No. : ISE & CPL/01/16-17	HIGH PRECISION DIGITAL MICRO-OHMMETER	Date : 09.06.2016 Page 1 of 3
--	---------------------------------------	----------------------------------

1. Purpose :

The High precision digital micro-ohmmeter will be used for calibration of low resistance meters and measurement of conductivity of Copper and Aluminium conductors used in Turbo-generators and other electrical machines.

It should improve/extend capability of calibration and Testing of low resistances in the following ways :-

- a) The micro-ohmmeter should be able to perform highly accurate resistance measurements at objects with an extremely low resistance such as cables, contacts, fuses, power connections, graphite, carbon and metal samples.
- b) The provision of in-built temperature compensation should be provided with temperature measurement feature which shall converts the measuring value obtained to 20 °C using a coefficient of 0.392%/K for copper and 0.400%/K for aluminium. Also provision of Room temperature measurement and measurement at any set temperature from 15 °C - 35°C is mandatory.
- c) It should have a constant current system, which guarantees an extremely stable measuring current(max. 10A approx..) during a measurement.
- d) The measuring result shall be calculated as the quotient of the voltage drop across an internal reference resistor and the (amplified) voltage drop across the test object.
- e) The measuring current should not flow continuously, but only for a short period of a measurement, so that the heating-up of the test specimen/ instrument under test is reduced.
- f) The instrument should have, preferably, the feature of contact error detection prior to every single measurement.

Prepared by  Suparna Majumdar DGM(ISE&CPL)	Checked & Approved by  Ram Sewak AGM(ISE&GRI)
---	---

Indent No. : 20161438 Specification No. : ISE & CPL/01/16-17	HIGH PRECISION DIGITAL MICRO-OHMMETER	Date : 09.06.2016 Page 2 of 3
--	---------------------------------------	----------------------------------

2. Specifications:

The detailed specifications are as given below:

- a) The measurement kit should be provided with temperature measurement feature that converts the measuring value obtained to 20 °C using a coefficient of 0.392%/K for copper and 0.400%/K for aluminium.
- b) Resolution : atleast 10 nΩ and display of 4 ½ digits or more.
- c) The measurement kit should have current flow time of preferably 600 ms per measurement(max) to avoid heating of the test object.

2.1 Resistance Measurement Range : Preferably it should be 100.00 μΩ – 10.000 kΩ.

2.1.1 Resistance Measurement Accuracy:

Preferably ± 0.03% of reading ± 3 digit (100 μΩ – 1 mΩ) or better

Preferably ± 0.02% of reading ± 2 digit (10 mΩ – 10 kΩ) or better



2.1.2 Measurement Method: It should be based on integrating dual slope quotient method.

2.2 Maximum Test Current : Atleast 100 μA (10 kΩ) to 10 A (100 μΩ) or better

2.3 Current flow time: Approx. 600 ms or less

2.4 PC Communication Port : RS232 or GPIB or any compatible version to get external control over the instrument.

2.5 Software : The instrument should be provided with PC Software for transferring measurement values to any Windows based application such as excel.

Prepared by  Suparna Majumdar DGM(ISE&CPL)	Checked & Approved by  Ram Sewak AGM(ISE&GRI)
---	---

Indent No. : 20161438 Specification No. : ISE & CPL/01/16-17	HIGH PRECISION DIGITAL MICRO-OHMMETER	Date : 09.06.2016 Page 3 of 3
--	---------------------------------------	----------------------------------

3 Pre-Qualification Requirement(PQR)


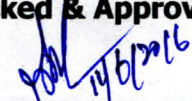
3.1 Only those vendors (OEMs/ Authorised dealers) should quote , who had supplied at least one such instrument along with accessories like S/W, cables and other optional accessories in the past 3-years (on the date of opening of tender) and the supplied instrument, is presently working satisfactorily for more than one year (on the date of opening of tender) .

3.2 The following informations are to be furnished by the vendor

- a. Name of the customer/company with complete address, telephones, email etc. where the high precision Digital Micro-Ohmmeter is installed and working satisfactorily.
- b. P.O.No., date, scope of supply and month & year of installation.
- c. Name and designation, mob. no., email of the contact / concerned person of the customer/ party.
- c. Performance certificate from the customer(s), clearly mentioning the break-downs if any, and corrective method applied.

4. General Requirements :

- a) The party should quote complete system including the accessories specific to their system.
- b) The party is to supply one set of original operational and service manuals (hard copy), detailed calibration certificate traceable to national/international standard.
- c) The party should provide guarantee/warrantee minimum for one year from the date of commissioning.

Prepared by  Suparna Majumdar DGM(ISE&CPL)	Checked & Approved by  Ram Sewak AGM(ISE&GRI)
--	--