

**TECHNICAL SPECIFICATIONS OF SINGLE CHANNEL
MICRO OHMMETER**

(COMPLIANCE SHEET)

E-7120510

Sl. No.	Description	Remarks / Vendor to Specify
1	The test set should be fully automatic for finding out the winding resistance of three phase & single phase Transformers up to 400 kV, 315 MVA rating & Rectifier transformer of 100 KA current rating. Instrument should be suitable to provide stable resistance value of high inductive winding quickly.	
2	The test set should be able to give direct readings of the resistance of test object automatically.	
3	No of channel--Single	
4	Measurement Principle—Four Wire Kelvin Bridge	
5	Display of Resistance Value	
6	Display of timer time for Heat run test resistance measurement	
7	The test current should be automatic up to the preset value, which shall be determined by the resistance value or measurement range selected under test	
8	The test voltage to be applied on the object under test should be independent of the supply frequency to avoid any variation in the frequency during the testing.	
9	The accuracy, reliability, steadiness and the repeatability of the readings should not be affected with the test voltages.	
10	Input power supply 230 V +/- 10% , 50 Hz Single phase	
11	Test Current Auto range 10 Amp & Continuous	
12	Display Red LED & Display resistance value with appropriate unit	
13	Operator control Key pad/ Menu driven for setup, data input, result storage	
14	Environmental conditions: Operating Temperature: 0 °C to 50 °C, Humidity: 0-90% non condensing, Storage Temperature: 0 °C to 50 °C, Ambient Temperature: 0 °C to 50 °C	
Protection: Instrument should be protected against following		
15	Discharge the specimen safely when test is completed, if lead accidentally disconnects or if power is lost	
16	Monitoring circuit for contact operation of on load tap changer for proper make before break sequence/High speed current interrupt detector. If open circuit exist instrument should shut down immediately without any hazard/damage to instrument or operating personal.	
17	Both visual & audio Hazard warning should be provided for following Test in progress Test specimen is discharging Test specimen is fully discharged ready for connection changing	
The ranges of the test set for different parameters should be at least as per the points mentioned below		
18	Resistance Range : (1-10-100) mΩ to (1-10-100) Ω Resolution : 4 digit Accuracy : (±)0.2 % rdg for range 1 mΩ to 100Ω or better	

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19	Current Range : 0-10 Ampere Auto Range & Continuous	
20	Stability: Reading should be stable & in steady state variation in measured value shouldn't be more than +/-0.1% of mean value	
21	Time for resistance measurement for 200 MVA transformer less than 90 sec	
22	The instrument should have detachable test leads for avoiding damage to the cables as well as to the instrument.	
23	The test set should have safety monitoring system to ensure perfect grounding of test system while test is under progress and the accessories required for the same are also to be supplied along with the instrument.	
24	The test kit shall meet all the relevant safety specifications	
The Test equipment shall be offered complete with the items mentioned below:		
25	Main Equipment	
26	Window based PC software for report generation Report format resistance against tap position in tabular form with all transformer details & temperature conversion from measuring temperature to standard temperature	
27	Power supply cord	
28	Cable Set for resistance measurement 15 meter potential lead with proper termination :1 pair 15 meter current lead with proper termination :1 pair 10 meter Safety ground lead with clamp	
29	Two sets of operating and maintenance manuals in English language	
30	Three sets of calibration reports with following data Calibration date, periodicity, calibration validity duration & next calibration due date At least 20 sample calibration results of which minimum 2 results at each resistance range Traceability details of standard used for calibration All documents should be endorsed by authorized signature	
31	Performance & Warranty Certificate Warranty 2 years after commissioning at our works	
32	Transport/storage case/bag for cables	
33	Different type of accessories needed to connect the leads to equipment under testing.	
34	Commissioning of the instrument to be done at our work by supplier's representative free of charge	
35	Price of one set of spare cable sets to be quoted separately	
36	One set of spare cable sets to be included in scope of supply	
37	Supplier should provide any other attachment/accessories required for smooth functioning of the instrument	
38	Original technical catalog to be included along with technical bid	
Instrument Live Demonstration		
39	Instrument live demonstration shall be given by supplier at BHEL Jhansi works when it is required at the time of technical evaluation.	
Note: Supplier should submit his technical compliance/comments against each of the above points in above format. Technical bid without complete technical compliance sheet will not be considered for technical evaluation.		

Prepared By

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Checked & Approved by