

TECHNICAL SPECIFICATIONS
DIGITAL CAPACITANCE & TAN DELTA METER / BRIDGE FOR INSTRUMENT
TRANSFORMER TESTING

Sl. No.	Description	Vendor to Specify
1	Purpose: Automatic Schering Bridge is required for precise measurements of Tan Delta & Capacitance of Current Transformers of up to 400 KV class in UST mode.	
2	General Requirements: 1: The Bridge should be able to give the direct readings of applied Current, Voltage, Frequency, Capacitance & Tan Delta etc. of CTs. 2: Built-in date and time should be there. 3: Data memory to store /recall measured data items with selectable storing & recalling intervals.	
3	Software: 1: User-friendly PC based software for controlling the Schering Bridge, acquisition of all parameters communicated, and display for data, computation and analysis of the measured data. 2: Inbuilt USB/RS-232/Ethernet Interface for PC communication, acquiring Software for communication & analyzing measurement data on PC	
4	Input power supply	230 V AC $\pm$ 10% , 50 Hz Single phase
5	Display:	Large size bright LED/LCD/TFT display with visibility in sun light.
6	Standard Capacitor Selection	Should be compatible with 100 pF, 300 kV, Tettex make standard Capacitors available with us.
7	Test voltage	25 kV to 300 kV
8	Current Input Range	0-5A from Std. Capacitor and Test object input.
9	Frequency	45 Hz – 65 Hz. Accuracy – 0.1 % of reading or better Resolution – 0.01 Hz
10	Capacitance	100 pF – 100 nF Accuracy – 1.0% of reading or better. Resolution - 0.01
11	Tan Delta	0-100% or better Accuracy – 1.50 % of reading or better. Resolution – 0.00001
12	Measurements Mode	UST Mode
13	Electromagnetic Compatibility	Should be able to work in high inductance region.
14	Safety Arrangements	1: System should have adequate and reliable safety interlocks / devices to avoid damage to the system, work piece and the operator due to the malfunctioning or mistakes. It should comply with applicable safety IS/IEC Standards. 2: All electronics parts should be shielded. 3: indication for earth connection should be there.
15	Cables	All necessary power and control cables for smooth operation for the instrument will supply with system.

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16	Spares & Accessories	1. All necessary spares for two years trouble-free operation. Spares are optional and price to quote item wise separately if any. 2. Vendor to furnish list and details of accessories if any.	
17	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		
18	Documents: 1. Two sets of operating / maintenance manuals in English language 2. Two sets of calibration reports from NABL accredited laboratory with following data: Calibration date, periodicity, calibration validity duration & next calibration due date. Traceability details of standard used for calibration. Enclose all documents with authorized signature. 3. Provide the list of NABL accredited calibration agency having the facility to calibrate the equipment in future.		
19	Qualifying Requirements: 1. Min two-performance certificate of offered model supplied to different customers. 2. Equipment warranty for 24 Months after successful commissioning at BHEL Jhansi works. 3. Party to furnish contact name, address and contact numbers of the users where the offered equipment, same model, is in successful operation for similar purpose.		
20	Installation & Commissioning: 1. Commissioning of the supplied instrument to be done at BHEL Jhansi works by supplier's representative. Supplier to take full responsibility for carrying out the startup and commissioning. Following tests deemed necessary for system acceptance will be part of the commissioning activity. i) Operational Tests ii) Calibration Tests 2. Demonstration of all features of the equipment & all accessories to the satisfaction of BHEL for their efficient and effective use.		
21	Training: BHEL Testing and Maintenance Engineer should be trained by vendor mutually agreed period in the area of 1. Use of all system Features, programming for Measuring Systems & supplied accessories etc. 2. Electrical, Electronic & maintenance for system & other supplied equipment.		
22	Supplier should provide any other attachment/accessories required for smooth functioning of the instrument		
23	Original technical catalog to be included along with technical bid. Mentioned Technical data in catalog shall only be considered for technical evaluation.		
Note: Supplier should submit 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
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