TECHNICAL SPECIFICATIONS
AUTOMATIC SCHERING BRIDGE (TAN DELTA & CAPACITANCE METER)

Sl. No.	Description		Vendor to Specify
1	**Purpose**: 1.1: Automatic Schering Bridge is required for precise measurements of Tan Delta & Capacitance of Current Transformers of up to 400 KV class in UST and GST/GSTg mode.		
2	**General Requirements:** 1: The Bridge should be able to give the direct readings of applied Current, Voltage, Frequency, Power Factor and Capacitance and Tan Delta of CTs. 2: Built-in memory locations to Store & Recall different reading. 3: Built-in date and time should be there. 4: Built-in data memory to store /recall minimum 500 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 Interface for PC communication, acquiring Software for communication, acquiring & managing measurement data on PC		
4	**Input power supply**	230 V AC ± 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 existing 100 pF, 300 KV, Tettex make standard Capacitors.	
7	**Test voltage**	Up to 300 KV	
8	**Current Input Range**	0-5 Amp 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 – 1.0% of reading or better. Resolution – 0.00001	
12	**Measurements Mode**	UST Mode GST Mode/GSTg 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 housed in shielded enclosures. 3: indication for earth connection should be there.	

5/7/17

05.07.17

15	**Cables**	All necessary power and control cables for smooth operation for the instrument will supplied with system.	
16	**Spares & Accessories**	1. All necessary spares for two years trouble-free operation. Spares are optional and price to be quoted item wise separately. 2. Vendor to furnish list and details of accessories if any.	
17	**Environmental conditions:** Operating Temperature: 0 ^{0}C to 50 ^{0}C, Humidity: 0-90% non-condensing, Storage Temperature: 0 ^{0}C to 50 ^{0}C, Ambient Temperature: 0 ^{0}C to 50 ^{0}C		
18	**Documents:** 1. Three sets of operating / maintenance manuals in English language 2. Three sets of calibration reports from **NABL accredited laboratory** 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 parameters range. 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	**Performance & Warranty Certificate & Acceptance:** **1.** Performance certificate of offered model supplied to different customer since last 05 years. Equipment must be Warranted for 60 Months after commissioning at our works from the date of acceptance by BHEL irrespective of date of supply or installation. **2.** 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 since more than last 5 years.		
20	**Installation & Commissioning:** 1. Commissioning of the instrument to be done at our work by supplier's representative free of charge. Supplier to take full responsibility for carrying out the startup and commissioning. 2. Successful proving of supplied components by the supplier shall be considered as part of commissioning. Following tests deemed necessary for system acceptance shall form part of the commissioning activity. i) Operational Tests ii) Calibration Tests 3. Demonstration of all features of the equipment & all accessories to the satisfaction of BHEL for their efficient and effective use. 4. Demonstration by actual use of all supplied components and accessories to their full capacity. 5. Commissioning schedule shall be submitted with the offer.		
21	**Training:** BHEL testing engineer and maintenance person 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.		

5/7/17

05.07.17

	Mentioned Technical data in catalog shall only be considered for technical evaluation.	
Instrument Live Demonstration		
24	Instrument live demonstration shall be given by supplier at BHEL Jhansi works at the time of technical evaluation. No extra charge applicable.	
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

05.07.17

Checked & Approved by