

BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
TECHNICAL SPECIFICATION OF CT ANALYZER FOR CTs TESTING

REF. NO. : DEBOTTLENECKING-CAPITAL/SPECS/2018-19/13 REV.01 DATE: 17.06.2019

Note:

- i) Vendor must submit complete information against qualifying conditions. The offer meeting this clause would only be processed.
 - ii) The 'Vendor to specify' column of the format shall be filled by vendor and submit along with the offer. Technical details also submitted with the offer.
 - iii) The offer and all documents enclosed with offer should be in English language only.
- Design, manufacturing, supply, Erection & commissioning of CT analyzer as per Specification below...

Sl. No.	Purpose:	Description	Vendor to Specify
1	CT analyzer instrument test set suitable for precise measurements of Turn Ratio, Polarity, Secondary winding resistance, Knee point voltage test, CT burden etc. of up to 400 kV class CTs & ring type turrett CTs mounted in turrett assembly in Power transformer and special transformers.		
2	General Descriptions	2.1: The CT Analyzer should be able to give the direct readings of ratio, Phase, Polarity, Secondary winding resistance & Knee point voltage etc. 2.2: Built-in data memory to store /recall minimum 100 measured data items with selectable storing & recalling intervals.	
3	Software	3.1: User-friendly PC based software to assist in analyzing the measurements / test results. 3.2: Inbuilt USB/RS-232 Interface for connecting with external PC/Laptop.	
4	Input Power Supply	230 V AC $\pm$ 10%, 50 Hz, Single phase supply	
5	Display	Large size bright LED/LCD/TFT inbuilt display with visibility in sun light (Separate display or PC/Laptop as a primary display is not acceptable). Range: 1 to 5000	
6	Ratio Measurement	Accuracy for 1 to 2000: $\pm$ 0.1% of rdg. or better, and for 2001-5000: $\pm$ 0.2% of rdg. or better Resolution: 4 1/2 digit or better	
7	Phase Measurement	Range: 0-360 Degree Accuracy: $\pm$ 3 Min, Resolution: 1 Min	

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8	Secondary winding resistance measurement	Range: 1.0 mΩ to 30.0 Ω Accuracy: ±0.2 % of rdg or better, Resolution: 3 1/2 digit or better	
9	Knee point voltage measurement	Range: 1.0 V to 4.0 kV or more Accuracy: ±1.0 % of rdg or better Resolution: 4 digit or better	
10	Exciting Current Measurement	Current Range 1.0 mA – 5.0 A Accuracy: ±1.0 % of rdg. or better Resolution: 4 digit or better	
11	Demagnetization	Instrument should demagnetize the CT after resistance measurement.	
12	Electromagnetic Compatibility	Instrument should be able to work in high inductance region.	
13	Safety Arrangements	13.1: 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. 13.2: All electronic parts should be house in shielded enclosures. 13.3: Indication for earth connection should be there.	
14	Standard Accessories	All necessary power and control cables / leads for smooth operation for the instrument will supplied with system.	
15	Spares	15.1: Confirmation on availability of all necessary spares for five years trouble-free operation of supplied equipment. 15.2: Vendor to furnish list and details of accessories if any.	

Page-3

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182

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16	Environmental Conditions	16.1: Operating Temperature: 0C to 45C, Humidity: 0-90 % non-condensing, Storage Temperature: 0C to 45C, Ambient Temperature: 0C to 45C 16.2: If any safety /environmental protection enclosure is required it should be built in the system by the vendor.	
17	Documents	17.1: Two sets of Operating /Instruction / Maintenance manuals along with circuit diagrams and schematics in English language. 17.2: Two sets of calibration reports from NABL Accredited Lab covering full range of the equipment for each tests with following details... Calibration date, periodicity, calibration validity duration & next calibration due date. Traceability details of standard used for calibration. All documents endorsed by authorized signature. 17.3: Provide the list of NABL accredited calibration agency having the facility to calibrate the equipment in future.	
18	Warranty Certificate & Acceptance:	The warranted of the equipment should be 24 Months from the date of successful commissioning at BHEL works.	
19	Qualifying Conditions	19.1: Only those vendors who have supplied at least 5 Nos. of the offered model of the equipment within last 10 years from the date of tender opening shall be eligible for participating in the tender. 19.2: Following documents are required to be submitted along with the offer. 19.2.1: Reference list of customers mentioning the customer name, contact details and year of supply. Copy of Purchase Order (with details-contact name, address, contact number & e-mail ID of the users etc.) of 5 Nos. of offered model of equipment as referred in clause 19.1. 19.2.2: Performance certificates of at least 2 Nos. of the offered model of the equipment certifying 1 year or more of satisfactory performance. Performance certificate and purchase order issued by the user in the name of OEM or Authorised dealer of OEM are acceptable.	

Page -2

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Page 3 of 4

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20	Erection, Commissioning & Acceptance:	20.1: Erection & Commissioning of the equipment and its operation at BHEL work by supplier's representative. Equipment shall be acceptable only after successful commissioning.	
		20.2: Demonstration of all features of the equipments & all accessories to the satisfaction of BHEL for their operational use.	
		20.3: Schedule of Erection and commissioning shall be submitted with the offer.	
		20.4: Charges, duration, terms & conditions for E&C should be furnished in details separately by vendor along with the offer.	
21	Training	BHEL testing engineer & maintenance person should be trained at BHEL works in the area of i) Use of system features, programming for monitoring system and supplied accessories etc. ii) Electrical, Electronics & Maintenance for system & other supplied equipments .	
22		Supplier should provide all necessary attachment / accessories required for smooth functioning of the instrument	
23		Technical catalog is required along with technical bid.	
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.			

Page - 1

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Page 4 of 4

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180