

ANNEXURE-1

REV00

BHARAT HEAVY ELECTRICALS LIMITED, JHANSI		
Technical Compliance sheet for 3 Phase Digital Transformer turn Ratio Tester		
Sr. No	Technical Specification	Bidder's Confirmation
1	This Specification covers the requirement to measure Turn ratio, Phase Angle displacement of Three phase Power transformer in a Substation & Manufacturing Environment.	Bidder to confirm
2	General Requirement	
2.1	Type - Turn ratio measurement instrument with Digital Display. The Equipment shall have automatic measurement of turn ratio, Phase Displacement (degree).	Bidder to confirm
2.2	Display - The Equipment should have Suitable Display facility to facilitate visibility.	Bidder to confirm
2.3	The Equipment should perform Quick test to provide a fast determination of turn ratio in three phase transformer.	Bidder to confirm
3	Technical Requirement	
3.1	Test Voltage Range: Upto 200V OR BETTER with different ranges for Transformers.	Bidder to confirm
3.2	Turn Ratio Range: 0.8 to 200 or Better	Bidder to confirm
3.3	Ratio Measurement Accuracy : 0.1% Rdg. Or better	Bidder to confirm
3.4	Phase Angle Measurement Accuracy and Resolution: $\pm 90^\circ @ \pm 0.5\%$ Accuracy with 0.01° Resolution.	Bidder to confirm
3.5	Power Supply : 100-250V AC, 50 Hz, Single Phase	Bidder to confirm
3.6	Humidity : 1 to 90% or better none condensing	Bidder to confirm
3.7	Operating Temperature: up to 50 deg	Bidder to confirm
3.8	Storage Temperature : up to 50 deg	Bidder to confirm
3.9	Weight : portable	Bidder to confirm
4	Safety :	
4.1	Safety Standards : should follow any of EN 61010-1, EN 81326-1, EN 61100-3-2/-3, EN 61326-1, IEEE C 57.12.90-1993, IEC 76-1-1993	Bidder to confirm
5	The test equipment shall be offered complete with the items mentioned below:	
5.1	Main Equipment with Transport/storage case & bag for cables .	
5.2	Power supply cord & Leads.	
5.3	Cable Set for resistance measurement :	

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	<p>One complete set of cable of sufficient length (Min 15 Mtr) with suitable clamps & connectors, compatible with the instruments should be provided for successfully carrying out the test. Additionally all the required accessories should be provided for the smooth functioning of kit. Further it should be robust/ rugged enough for safety during transportation. All the standard accessories for desired monitoring, operation & control of instrument shall have to be provided.</p> <p>If supplier is supplying test lead length of less than 15 mtrs, then test lead extension are also to be provided to make the lead length upto 15 mtrs.</p>	Bidder to confirm and submit along with supply.
5.4	Two sets of operating / maintenance manuals in English language.	Bidder to confirm
5.5	Two sets of calibration reports from NABL accredited Lab with essential data. Traceability details of standard used for calibration. All documents should be endorsed by authorized signature.	Bidder to confirm and submit along with supply.
6	SPARES-	
6.1	Vendor to ensure availability of all spares item with OEM for atleast 5 years of operation.	Bidder to confirm
7	PACKING:	
7.1	Packing for all items of complete system, all accessories and other supplied items to avoid any damage/loss in transit.	Bidder to confirm
8	GUARANTEE/WARANTY :	
8.1	24 months from date of supply or 18 months from date of commissioning whichever is later.	Bidder to confirm.
8.2	<p>Warranty replacement:</p> <p>The system shall be guaranteed for satisfactory operation and against the defects in design, materials & workmanship for above guarantee period. The commissioning date shall be the date from which the equipment is in satisfactory operation. Any replacement during warranty period shall be provided on F.O.R. BHEL Jhansi / Customer Site.</p>	Bidder to confirm.