

**PROCUREMENT PROCEDURE OF CPRI (NON WORKS)**

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 Section : Formats  
 Topic : e-Tender Technical Specification Document

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**CPRI**

**CENTRAL POWER RESEARCH INSTITUTE, BHOPAL, Web: www.cpri.in, www.tenderwizard.com/CPRI, Telefax: 0755-2586283**

**Section II -Technical Specification**

**Tender Enquiry No: STDS/12-01/2019-20/PUR/STL/A-1999/**

**Description of the Equipment/Goods/Services : Three Phase Automatic Transformer turns Ratio Meter.**

**Note :The Offers should be submitted only in this format otherwise the offer will be liable for rejection**

**Note : 1) The Offers should be submitted only in this format otherwise the offer will be liable to be rejected.**

**2) All blue fields are mandatorily to be filled in.**

**3) Pre-despatch Inspection & Training expenses shall be borne by CPRI. Information regarding the readiness of the equipment/machinery for the Pre-despatch Inspection should be communicated in writing by the supplier at least 70 (Seventy) days in advance, to obtain clearance from the Ministry, Government of India for deputation of nominated CPRI officers.**

**Name of the Vendor:**

**Offer Number and Date:**

Sl. No.	Parameters	CPRI Specification/Requirements	Quantity	To be completed by the Bidder	
				Guaranteed Technical Particulars (GTP)	Deviation/Remarks Specify if any
1	Place where equipment to be supplied	STL STDS, CPRI, Bhopal			
2	Scope (supply / supply & Installation / supply, installation & training)	The scope of supply covers- supply, installation & training of one unit of Three Phase Automatic Transformer turns Ratio Meter with necessary accessories and optional features spares at STL, STDS, CPRI, Bhopal	01 (One)		
3	Application	The Three Phase Fully Automatic microprocessor based Transformer turns Ratio Meter with digital display is required to measure the turns ratio of single phase and three phase transformers with high degree of accuracy as per IS and IEC specification and standards.			
4	Operating Temperature	05° C (Min.),50° C (Max.),35° C (Ave.)			
5	Humidity	0-95% RH (Non Condensing)			
6	Altitude	523 meters above MSL			
7	Installation	Indoor			
8	Input supply	150 V to 250 VAC at 48 to 52Hz			
9	Measurement	Automatic measurements of Voltage, Turns Ratio and Phase displacement			

10	Connection	One time connection to transformer for measuring three phase & single phase ratios			
11	Measuring Test Voltages	1V, 10 V, 40 V, 80 V, 250 V or in similar steps with Automatic Range switching:			
12	Ratio Measuring Ranges:	0.9000 to 10,000: 1			
13	Accuracy & Range	Typical Range(s)			
13.a		At 250 V- Range 0.9 to 10,000 Accuracy $\pm 0.1\%$ Rdg $\pm 1$ LSD or better			
13.b		At 100 V & 40 V- Range 0.9 to 4000 Accuracy $\pm 0.1\%$ Rdg $\pm 1$ LSD or better Range 4001 to 10,000 Accuracy $\pm 0.3\%$ Rdg $\pm 1$ LSD or better			
13.c		At 10V - Range 0.9 to 500 Accuracy $\pm 0.1\%$ Rdg $\pm 1$ LSD or better Range 501 to 1,000 Accuracy $\pm 0.15\%$ Rdg $\pm 1$ LSD or better Range 1001 to 3,000 Accuracy $\pm 0.4\%$ Rdg $\pm 1$ LSD or better			
13.d		At 1 V- Range 0.9 to 50 Accuracy $\pm 0.1\%$ Rdg $\pm 1$ LSD or better Range 51 to 100 Accuracy $\pm 0.15\%$ Rdg $\pm 1$ LSD or better Range 101 to 300 Accuracy $\pm 0.4\%$ Rdg $\pm 1$ LSD or better			
14	Current	0-1 A			
14.a		Accuracy: $\pm 2$ mA or better			
14.b		Resolution: 0.1 mA			
15	Phase Angle	Range: $\pm 90$ Degree			
15.a		Resolution: $0.05^\circ$ or better			
15.b		At 250 V - Range 0.9 to 5,000 Accuracy $\pm 0.1^\circ$ or better Range 5,000 to 10,000 Accuracy $\pm 0.2^\circ$ or better			
15.c		At 100 V - Range 0.9 to 2000 Accuracy $\pm 0.1^\circ$ or better Range 2001 to 4,000 Accuracy $\pm 0.2^\circ$ or better Range 4001 to 10,000 Accuracy $\pm 0.4^\circ$ or better			
15.d		At 40 V - Range 0.9 to 200 Accuracy $\pm 0.1^\circ$ or better Range 201 to 2,000 Accuracy $\pm 0.2^\circ$ or better Range 2001 to 4,000 Accuracy $\pm 0.25^\circ$ or better Range 4001 to 10,000 Accuracy $\pm 0.5^\circ$ or better			
15.e		At 10 V - Range 0.9 to 50 Accuracy $\pm 0.2^\circ$ or better Range 51 to 500 Accuracy $\pm 0.25^\circ$ or better Range 501 to 3,000 Accuracy $\pm 0.6^\circ$ or better			
15.f		At 1 V - Range 0.9 to 5 Accuracy $\pm 0.2^\circ$ or better Range 5 to 50 Accuracy $\pm 0.25^\circ$ or better Range 51 to 300 Accuracy $\pm 0.6^\circ$ or better			
16	Resolution:	4 Digits or better			
17	Load on test object	<0.1 VA or better			
18	Phase vector detection	Automatic			
19	Result Display	Deviation from a nominal ratio or % error between measured value and name plate value, Phase vector group			

		Warning of wrong connections			
20	Screen	Touch screen , preferably with coloured LCD			
		Size more than 5 inch			
		Back lighting			
21	Interface	USB			
		RS 232			
22	Cable Set	Complete compatible cable sets (H and X lead ) & extension cables and power cord)			
23	Enclosure	Shall be rugged, Dust proof , shock and vibration proof , Separate heavy duty plastic moulded transport case with soft padded shall be provided, and it shall be suitable to carry for lab or field testing activities.			
		Cable carrying bag			
24	Data logging/ Memory	Data logging and storage of measurements shall be possible for at least 1,000 results			
25	Printer	Shall have built-in printer to print the readings and corresponding time.			
26	Protection	Shall have Enhanced protection circuitry for protection of operator, fuse protection, Emergency Stop switch and auto grounding after measurement.			
27	Calibration	The system shall have calibration certificate traceable to National/International Standards from an NABL accredited lab. Calibration results shall comply with specifications. Calibration charges if extra to be quoted separately. Calibration certificate date should later than the date of Purchase order date. This is mandatory for the approval of CPRI.			
28	Warranty	Two year warranty from the date of successful commissioning at CPRI Service backup at least for 10 years.			
29	Software	All dedicated software, if any shall be supplied in original in CDs.			
30	Safety	For wrong connection on object/Transformer:Wrong connection safety should be available in the meter and meter should display the same.Meter must stop voltage injection during wrong connection on transformer terminal i.e, connecting HV to LV or viceversa by mistake.			
31	Manual	Maintenance & Operation Manual in English with detailed procedures			
32	Accessories	Suitably configured branded laptop (hp/DELL/Lenovo) which enables to upload the data/ graphs from the instrument up to date (The complete configuration of laptop should be given in detail )			
		≥ 10m length of test leads with clamps- 02 sets			

PN: 1) Bidder shall indicate complete details/information how the CPRI GTP are complied with against each and every specification parameters & mere statement of '**complied**' do not suffice the requirement.

2) A detailed technical/catalogue/literature/phamplet and any other technocal details shall be submitted in hard copy in a sealed cover superscribing enquiry number and due date so as to reach the below mentioned address within due date and time.

3) The Indian representative of the foreign/overseas firms shall submit the Letter of Authorization issued by their principals.

4) The bidder shall submit the quotation / offer in the above prescribed format of Section IA, IB and II only . Informations any other forms shall shall be rejected.

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