

PROCUREMENT PROCEDURE OF CPRI (NON WORKS)

Revision : 04  
 Dt of Revi : 27.08.2020  
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 Section : Formats  
 Topic : Technical Specifications format

Issue No : 2  
 Issue Dt. : 30.06.2003  
 Issued by : P A  
 Documents : PPM

FORMAT NO.:CPRI/PUR/ETBID/GTP

Section IV T -Technical Specification

CENTRAL POWER RESEARCH INSTITUTE, BENGALURU/BHOPAL Web: www.cpri.in, www.tenderwizard.com/CPRI

Tender Enquiry No : CPRI/BLR22UHVRL110C992

Description of the Equipment/Goods/Services : Digital Power Analyzer

Note : 1) The technical bid submitted in other than this format is liable to be rejected.

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

Name and address of the bidder

Quotation Number and Date

Sl.No.	Technical Specifications/Parameters	Qty	To be completed by the Bidder		
			Detials of guaranteed technical parameters offered by the bidder	Guaranteed Technical Particulars (GTP) Mention Complied/Not Complied	Deviations from GTP
<b>Three Phase Digital Power Analyzer</b>					
1	<b>Equipment:</b> Three Phase Digital Power Analyzer with measuring leads and all accessories	02 Numbers			
2	<b>Scope:</b> The scope of supply covers testing and commissioning of power analyzer with measuring leads and accessories for measuring No load losses & current and Load losses of single and three phase distribution and power transformers at UHVRL, Hyderabad				
3	<b>Application:</b> Power analyser shall be used for measuring No load losses & current and Load losses of single and three phase distribution and power transformers, it shall also include the other measurements e.g. voltage, current, power factor, Frequency, vottage and current harmonics and other measurements etc. as per IS and IEC specification and standards				
4	<b>Operating Conditions at site:</b> Ambient temperature: 10°C to 40 °C Relative humidity: 45 % to 85% RH (Non-Condensing) Mean height of site above sea level: 542 meters				
5	<b>Input voltage:</b> 230 V, 50 Hz				
6	Installation: Indoor				

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7	<b>General Features:</b> Instrument shall be rugged, having water proof casing and light in weight, so that the measurement can be used in rough environment. It shall have large display which can show all the data at a glance. Protective devices shall be provided to protect the meter from any type of faults inside or outside the equipment under test				
8	Input impedance of channels: $\geq 1 \text{ M}\Omega$ with capacitance of $\leq 25 \text{ pF}$				
9	Numbers of voltage measuring channels : Three numbers				
10	Number of current measuring channels: Three numbers				
11	<b>Measuring configurations</b>				
11.1	1 Phase 2 wire configuration				
11.2	3 phase 3 wire				
11.3	3 phase 4 wire				
12	<b>Voltage Measuring Channels</b>				
12.1	Voltage measurement range : 15 to 600 Vrms (direct input) (Phase-neutral)				
12.2	Accuracy of voltage measurement : $\pm 0.1\%$ of reading $\pm 0.1\%$ of range or				
13	<b>Current Measuring Channels</b>				
13.1	Current measurement range : 0.5 to 20A rms (direct input)				
13.2	Accuracy of current measurement : 0.1% of reading+0.1% of range or better at				
14	<b>Power Measurement</b>				
14.1	Power measurement: shall capable to measurement the kW, kVAR, kVA, kWh,				
14.2	Accuracy of power measurement : 0.1% or better				
14.3	Accuracy of power measurement : $\pm 0.5\%$ of reading or better				
15.1	Power factor:0.05 lag to unity for lag and lead conditions				
15.2	Accuracy of power factor: $\leq 0.1\%$				
16	Input type Floating				

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17	<b>Frequency Measurement</b>				
17.1	Frequency measurement range: DC and 0.1 Hz to 100 KHz				
17.2	Accuracy of frequency measurement: Accuracy : 0.1% or better				
17.3	Input terminal type: Insulated, plug in				
18	<b>Scaling:</b> The meter shall have provision to set the current sensor transformation ratio, VT ratio, CT ratio, and power factor when applying the external current sensor, VT, or CT output to the instrument. Significant digits: Selected automatically according to significant digits in the voltage and current ranges. Selectable range: 0.001 to 9999				
19	Duty cycle: Continuous				
20	<b>Continuous over loading capacity</b>				
20.1	Voltage $\geq$ 1000V rms				
20.2	Current - $\geq$ 25 A rms				
21	Over voltage protection: 2.5kV peak				
22	ADC resolution: 16 bits				
23	Range selection for measurements : Manual, Auto				
24	<b>Power quality analysis features</b>				
24.1	THD for voltage and current signals				
24.2	Crest factor				
24.3	Phase angles				
24.4	Harmonics Current and voltage up to 50th harmonics				
25	Display refresh rate : 100ms, 250ms, 500ms, 1s				

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26	<b>Interface/Data Transfer:</b> The equipment shall be provided with following mentioned peripherals for interface with PC and further analysis				
26.1	RS 232				
26.2	USB Port				
26.3	Ethernet				
26.4	PC Interface card				
27	<b>Functions:</b> W, VA, VAR, pf, Phase angle, FF, Hz, VRectified mean ,Harmonic content, THD, Total power, Vaverage etc.				
28	<b>Display type:</b> TFT/LCD Graphical display				
29	<b>Software:</b> Necessary software package for Numerical Visualization, Accessing and analyzing the stored data, FFT analysis of harmonics, Transfer of data to spread sheets for further analysis. The software for extraction of measured results in report generation format shall be provided				
30	Additional measrement features shall be incorporated for the following : rms effective value, rectified mean values; peak values, crest factor, form factor, fundamental content, distortion factor. Voltage (rms and average) and current. Active Power (W); Reactive Power (var); Apparent Power (VA); voltage and current harmonics, cos $\Phi$ , phase angular; Integral function for active power, reactive power, apparent power, mean voltage and mean current				

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31	The equipment shall be portable and hand held. The weight of the equipment shall be less than 5 kgs				
32	<b>Accessories:</b> All suitable accessories such as power supply card, measuring cables and earth cables, shunts (if any), Fork terminal adapter, Conversion adapter, shall be provided in one set along with carrying bag for cables and accessories				
33	<b>Service Backup:</b> The equipment shall be provide with service back of equipment at least for 5 years from date of successful commissioning				
34	<b>Calibration:</b> The equipment shall be supplied with calibration certificate from any laboratory accredited as per IEC/ISO 170252017 standard for all parameters (voltage, current, power factor, apparent power, reactive power, active power, harmonics, THD, power quality parameters etc.)				
35	<b>Demonstration:</b> The equipment shall be demonstrated for the following tests at site a. Functionalities and features of the equipment b. Measurement of Load losses of Three phase or single phase transformers at site <b>Note:</b> The test sample and testing equipment will be provided by the CPRI				
36	<b>Training:</b> One day training shall be provided on features and operation of power analyzers to CPRI personnel at site				

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37	<p><b>Technical information to be provided:</b> The following technical information shall be provided during supply:</p> <ul style="list-style-type: none"> <li>• Calibration certificates</li> <li>• Operational manual and Maintenance manual in triplicate : these manuals shall include specific instruction relevant to the handling, installation, troubles shooting and servicing.</li> </ul> <p>All documents shall be issued in English language and provided both on paper and software copy.</p>				
38	<p><b>Warranty:</b> The equipment shall be guaranteed for minimum 12 months from date of successful demonstration at site</p>				

PN: 1) Mere statement of "Complied" do not suffice the requirement. The details of technical parameters in proof of CPRI requirements shall be furnished along with technical write-up, catalogues, brochures, literatures, phamplates, or any other documents shall be submitted in hard copy along with technical bid.  
 2) Calibration reports/certificates, factory test reports/certificates from an laboratory accredited as per ISO/IEC 17025:2017 /facilites shall be submitted wherever applicable.  
 3) CPRI reserves the rights to conduct "predispatch inspection" prior to dispatch at the works of the supplier and the expenditure towards PDI shall be borne by CPRI. However