

PROCUREMENT PROCEDURE OF CPRI (NON WORKS)

Revision No. : 04

Dt of Revision : 27.08.2020

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Section : Formats

Topic : Technical Specifications format

Issue No : 2

Issue Dt. : 30.06.2003

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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/BLR20ERED875641

Description of the Equipment/Goods/Services : Real time high speed data acquiring oscilloscope and 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		
			Details of guaranteed technical parameters offered by the bidder	Guaranteed Technical Particulars (GTP)	Deviations from GTP
1	Place where equipment /service to be supplied /provided- ERED, CPRI, Bengaluru, India				
2	Scope- Supply, installation, commissioning and training of real time high speed data acquiring oscilloscope and power analyzer	1 set			
3	Pre qualification criteria- The supplier should have supplied similar equipment to any national or international laboratories.				
4	General Requirement Multi Channel, Multi input type High speed Data Acquisition System with Modular Inputs (temperature measurement module can be either in-built or as an extra module but must be capable of measuring simultaneously with power parameters) The instrument shall be able to measure all electrical parameters as per the diagram shown in Annexure 1. The equipment is required for LED luminaires and inverter testing. The equipment must be able to have oscilloscope and power analyzer capability in-built in it. (See Annexure 2)				
5	Maximum Memory Length- Minimum of 200 Mpts or 500 Mpts or higher.				
6.1	Inputs Required Minimum 10 Voltage Channels, 5MS/s or higher Minimum 10 Current Channels, 5MS/s or higher Minimum of 4 Temperature inputs				
6.2	Higher input channels shall be provided if available Voltage leads (BNC or alligator types or appropriate) , current clamps or current transducers of high accuracy shall be provided and 4 T-type thermocouples of high accuracy and large temperature range.				
7	Continuous measurement All 24 channels shall be able to measure at same sampling interval for atleast 5 or 6 hours. Minimum sampling interval shall be 0.1 MS/s or 0.2 MS/s or higher				
8	Input Range Voltage: up to 1000 V DC and 600 V AC or higher range Current: up to 1000 A AC + DC Temperature: Thermocouple (T-Type)				
9	Input Resolution & Bandwidth For Analog Input: 16-bit Resolution and 2 MHz Bandwidth or better For Temperature Input: 16-bit Resolution and 600Hz Bandwidth or better.				
10	Type of Input -All input channels shall be made isolated				

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11	Altitude- The equipment shall be able to operate at a height of minimum 952 meters.				
12	Simultaneous Capturing - data recording on the same waveform at two different sample rates (optional). High speed measurements on all channels shall be given (demonstration shall be provided)				
13	Input Quality Analysis Function- Need high sampling data for capturing sags, transients, interfering impulses, phase shifts, low voltages/ dips for duration of 300 ms to 11 seconds or higher, frequency changes for a duration of 11 seconds or higher, etc.				
14	Viewing Display- Color LCD or LED monitor or Touch screen type				
15	Zoom Function- Instantaneous zooming shall be available				
16	X-Y display- Selectable X axis/Y axis				
17	Snapshot- Should have feature to retain the current displayed waveform on the screen. Option to take & save snapshot waveforms to be provided. Save option to txt or excel (CSV or xls) shall be provided				
18	Realtime recording on PC hard disk- Continuous PC based data acquisition shall be provided Data shall be saved while measuring				
19.1	External / internal temperature measurement- The equipment shall be able to measure minimum of 4 or higher temperature points of thermocouple T- type having range between 10 degree celsius to 120 degree celsius or better. The temperature measurement shall be in-built within the system or provided external to the equipment as a temperature data logger in sync with this				
19.2	Type and quantity of temperature sensors-1 Minimum 4 Nos. of T-type thermocouple shall be provided with 5 meters in length.				
19.3	Type and quantity of temperature sensors-2 In case of external equipment for temperature measurement (should be synchronised with the real time high speed data acquiring oscilloscope and power analyzer), then the T-type thermocouple shall be provided equal to number of channels in the external equipment.				
20	Waveform (Total) parameters measurement Voltage, Current, phase angle between V and I, power factor, real or active power, reactive power, apparent power, efficiency, frequency, temperature.				

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21	Waveform (Individual) parameters measurement - peak to peak, amplitude, Maximum value, Minimum value, High level, Low level, Average, Mid, Rms, Sdev, +OvrShoot, -OvrShoot, Rise time, Fall time, Frequency, time Period, etc.				
22	Cursor measurement- Horizontal, Vertical, Marker (4 Nos.), Horizontal & Vertical				
23	Trigger Mode- auto, auto level, normal, single, etc.				
24	User-Defined Function- Computation setting to be provided by combining any following operators and parameter measurement items:- Phase Function, Differentiation and Integration, trigonometric function, FFT Function, etc.				
25.1	Current Sensor accuracy- 0.5% to <1% or better range for equipment measurement with voltage leads and current sensors				
25.2	Measurement accuracy of voltage- 1.5% or better (combined accuracy with sensor/ clamp/ probe)				
25.3	Measurement accuracy of current- 1% or better (combined accuracy with sensor/ clamp/ probe)				
25.4	Measurement accuracy of temperature- 0.5% ± 1°C or better (combined accuracy with temperature probe/ sensor)				
26	Current sensor type- Fixed type/ benchtop type with Highly accurate for small and high currents measurements up to 1000 A (AC and DC)- shall have accuracy of 0.5% or better				
27	Real-time Math Function- Types of computation:- Basic Arithmetic like addition, subtraction, multiplication and divide, Differentiation, Integration, RMS Value, Effective Power, Frequency, Period, Active power, Reactive Power, apparent power, phase angle Difference				
28	Power Math Function- Measurement capability of:- Active power, Reactive Power, power factor, phase difference, voltage frequency, integrated power along with the capability of selecting wiring configuration of a 3 phase system				
29	Storage- SD card slot, USB port for flash drive, Internal HDD of 500 GB or SSD of 256 GB or higher [SSD will be preferred over HDD]				

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30	Communication Ports - USB, Ethernet, VGA output , etc.				
31	Probe Power Supply- Built-in probe power supply for all probes if available shall be provided. External power supply shall also be considered				
32	Software - Continuous PC/ laptop based data acquisition/ Remote monitor/ operation and transferring of images from PC options shall be provided. Necessary software shall be provided with the system. The equipment should be the best in quality and free of bugs in the software during use				
33	Personal Computer ALL_IN ONE DESKTOP/PC or laptop with minimum configuration of:- 9th Generation Intel® Core™ i7 or latest version Processor. Windows 10 OS, 16GB RAM, 1TB Hard Drive & 23.8-inch FHD IPS Display or a better configuration and 1 No. high quality multi functioning colour printer (copy, printing and scanning, double side printing) shall be provided to take waveform from PC or test system				
34	Accessories Required - Part 1 Voltage Measurement: 10:1 / 100:1 Isolated Probe (5 kV/ 10 kV or appropriate), measurement capability up to 1000V DC (1 No.) and 600 V AC (9 Nos.)- (Total:10 Nos.) Current Measurement: Current Clamp or fixed CT's with measurement capability up to 1000A AC+DC (Total: 10 Nos.)				
35	Accessories Required - Part 2 Additional 1 No. of 16 GB USB 3.0 or higher pendrive of best quality shall be provided for data transfer from USB to PC/ laptop. Appropriate capacity UPS (1kVA or 5 kVA) shall be provided for back up for 8 hours to support this equipment				
36	Installation - Installation and commissioning along with training of this equipment usage shall be done by expert people to CPRI officials (ERED) for 2 to 3 days.				
37	Documentation- 2 copies of instruction manuals along with calibration certificates/ reports for the equipment shall be provided.				
38	Calibration- Calibration report/ Certificate shall be from ISO/IEC 17025 Standard or NABL or its equivalent accredited laboratory. Calibration date should be after the purchase order date. Calibration shall be in the name of " Central Power Research Institute, Bengaluru". Calibration parameters of the equipment shall be covered under the scope of NABL or its equivalent.				
39	Warranty- Equipment shall have warranty for 3 years from the date after completion of commissioning at CPRI.				

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 accredited agencies/facilities shall be submitted wherever applicable.

3) CPRI reserves the right to conduct "predispatch inspection" prior to dispatch at the works of the supplier and the expenditure towards PDI shall be borne by CPRI. However information regarding the redness of the equipment/machinery for the PDI shall be communicated in writing at least 70 days in advance.