Section IV L - Price Bid for local supplies

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

Tender Enquiry No :STDS/12-01/2020-21/PUR/RTL-Nashik-02

Description of the Equipment/Goods/Services : Fully Automatic Ten Positions Energy Meter Test System.

Name and address of the Bidder *	
Quotation Number and Date*	
HSN code (Harmonized system nomenclature)*	
GSTIN No*	
SAC code (Services Accounting Code)*	
Income Tax permanent account number(PAN)*	
Details of EMD submitted*	

Sl.No	Particulars	Qty	Unit Rate in Rupees	Total Amount in Rupees
1	**Basic Price (Including mandatory spares, packing and forwarding charges)** **(The list of mandatory spares shall be provided in the technical bid without mentioning the price)** **Insurance is under Supplier's Scope**	1		0.00
1(a)	*GST rate as applicable in percentage only*			
	IGST			0.00
	CGST			0.00
	SGST			0.00
	UTGST			0.00
	CESS if any			0.00
2	**Transportation Charges (To be Quoted in Lumpsum ,if applicable)**			0.00
2(a)	*GST rate as applicable in percentage only*			
	CGST			0.00
	IGST			0.00
	SGST			0.00
	UTGST			0.00
	CESS if any			0.00
3	**Installation and Commissioning Charges (To be Quoted in Lumpsum ,if applicable)**			0.00
3(a)	*GST rate as applicable in percentage only*			
	CGST			0.00
	IGST			0.00
	SGST			0.00
	UTGST			0.00
	CESS if any			0.00
	TOTAL LANDED COST			0.00
	Total Landed Cost in Words			

Section IV L - Price Bid for local supplies

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4	**OPTION-1** : **Post warrenty comprehensive AMC including, Labour, Travel, Spare Parts etc. in INR (lumpsum)** (This cost is optional hence will not to be considered for cost comparission evaluations.)			
5	**OPTION-2 :** **Optional accessories in INR (lumpsum)** **List of items with breakup price to be furnished in case CPRI demands for the same.** (This cost is optional hence will not to be considered for cost comparission evaluations.)			
6	**Guarantee/Warrantee period**			
7	**After sales and service facility (location of the facility and address to be furnished)**			
8	**Delivery period**			
9	**Validity of the offer**			
10	**Payment terms** **(as per CPRI payment terms)**			
11	**Details of enlistment if any under Department of expenditutre , Minsitry Of Finance , GOI.**			
12	**Name and address of the customer, if any to whome a similar equipment/items has been supplied with their purchase order number and date (as per the APPENDIX I).**			
13	**Whether a similar equipment could be demonstrated to our representative in case required.**			
15	**Acceptance for submission of security deposit in the event of placement of order.**			

PN:
1) The price bid shall be submitted in this format only.
2) All blue fields are madatorily to be filled in.
3) As a policy of CPRI High Sea Sales bids are not acceptable and shall be rejeced.
4) 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 rediness of the equipment/machinary for the PDI shall be communicated in writing at lease 70 days in advance.
5)UNDER TAKING: THE OFFER MADE IS IN STRICT COMPLAINCE WITH THE QUALITY AND OTHER TECHNICAL REQUIREMENT MENTIONED IN SECTION - IV T.

Section IV NL - Price Bid format for Non - Local supplies (Import) Offer

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

Tender Enquiry No : STDS/12-01/2020-21/PUR/RTL-Nashik-02

Description of the Equipment/Goods/Services :Fully Automatic Ten Positions Energy Meter Test System.

Name and address of the Bidder	
Quotation Number and Date	
HSN code (Harmonized system nomenclature)	
GSTIN No (if applicable)	
SAC code (Services Accounting Code)	
Income Tax permanent account number(PAN)	
Details of EMD submitted	

Sl.no	Partuculars	Qty	Unit Rate in Figures	Currency Type	Amount
1	**FOB value of the complete system (Including mandatory spares, packing and forwarding charges) (The list of mandatory spares shall be provided in the technical bid without mentioning the price)**	1			0.00
2	**Insurance charges upto CPRI(ware house to ware house basis in Lumpsum)**				0.00
3	**Freight Charges,As applicable(Lumpsum)**				
	3a) Air Freight Charges.(Lumpsum)				0.00
	3b) Sea Freight Charges.(Lumpsum)				0.00
4	**Total CIP/CIF cost**				0.00
	Total CIP/CIF cost in words				
5	**Installation and commission charges in INR (Lumpsum)**				0.00
5(a)	*GST as applicable (GST rate in percentage only)*				
	IGST				0.00
	CGST				0.00
	SGST				0.00
	UTGST				0.00
	CESS if any				0.00
	TOTAL COST				0.00
	Total Cost in Words				

Section IV NL - Price Bid format for Non - Local supplies (Import) Offer

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

Sl.no	Partuculars	Qty	Unit Rate in Figures	Currency Type	Amount
6	**OPTION-1 :** **Post warrenty comprehensive AMC including, Labour, Travel, Spare Parts etc. in INR (lumpsum)** (This cost is optional hence will not to be considered for cost comparission evaluations.)				
7	**OPTION-2 :** **Optional accessories in INR (lumpsum)** **List of items with breakup price to be furnished in case CPRI demands for the same.** (This cost is optional hence will not to be considered for cost comparission evaluations.)				
2	**Guarantee/Warrantee period**				
3	**After sales and service facility (location of the facility and address to be furnished)**				
4	**Delivery period**				
5	**Validity of the offer**				
6	**Payment terms** **(as per CPRI payment terms)**				
9	**Name and address of the customer, if any to whome a similar equipment/items has been supplied with their purchase order number and date (as per the APPENDIX I).**				
10	**Whether a similar equipment be demonstrated to our representative in case required.**				
12	**Acceptance for submission of security deposit in the event of placement of order.**				

NOTE : CPRI IS EXEMPTED FROM PAYMENT OF CUSTOMS DUTY UNDER NOTIFICATION NO.51/96 DATED 23-071996 AND AMENDED NOTIFICATION NO.24/2007-CUSTOMS DATED 1-3-2007(HOWEVER CONCESSIONAL CUSTOMS DUTY AND ADDITIONAL CUSTOMS DUTY AS APPLICABLE WIIL BE CONSIDERED.

UNDER TAKING: THE OFFER MADE IS IN STRICT COMPLAINCE WITH THE QUALITY AND OTHER TECHNICAL REQUIREMENT MENTIONED IN SECTION IV T

PROCUREMENT PROCEDURE OF CPRI (NON WORKS)

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Secti : Formats **Documents : PPM**

Topi : Technical Specifications format **FORMAT NO.:CPRI/PUR/eTBID/GTP**

Section IV T -Technical Specification

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

Tender Enquiry No : STDS/12-01/2020-21/PUR/RTL-Nashik-02

Description of the Equipment/Goods/Services : Fully Automatic Ten Positions Energy Meter Test System.

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	

					To be Completed by the Bidder	
Sl.No	**Parameters**	**CPRI Specification/Requirements**	**Qty**	**Detials of guaranteed technical parameters offered by the bidder**	**Guaranteed Technical Particulars (GTP)**	**Deviation/Remarks specify if any**
1.	Objective	To provide facilities for carrying out testing of Routine, Acceptance and Certification (Type Test) test on all types of Electro Mechanical /Electronics, 1 Phase / 3 Phase whole current & 3 phase CT/PT operated energy Meters, prepaid meters and smart meters in Active, Reactive and apparent Energy Mode.	**One Set**			
2.	Scope	Design, Engineering, Manufacture, Supply, Installation and Commissioning of Ten position Fully Automatic Energy meter test equipment with Reference meter of Accuracy Class 0.02 % in active and reactive and Apparent mode.				
3	Training	Three days training excluding duration of Installation and commissioning to CPRI Engineers on all aspects of operation and maintenance at CPRI Nashik.				
4	Warrantee	Warrantee of the test system is required covering all the supplies for period of Three (3) years from the date of successful installationand commissioning. Continued technical support during warranty period to be provided.				
5	Calibration	Reference standard, Voltage and Current Source, ICT, MSVT-shall be calibrated from ISO/IEC 17025 accredited laboratory. All the parameters with full ranges indicating with the claimed accuracies shall be covered in the certificate. Factory certificate will not be accepted for these items. Test certificate of complete test system				

6		**QUALIFYING REQUIREMENTS (FOR MANUFACTURERS):**				
6.1		Should have supplied at least two test benches of same configuration and make & should be in successful operation at ISO/IEC 17025 accredited Govt laboratories on the date of offer.				
6.2		Bidder must give details like Copy of P.O, name of the users, contact person, address and phone no. of user who is using similar system in support of above.				
6.3		The bids may be submitted by the manufacturer or their sole authorized representative duly supported by certificate of authorization.				
6.4		The Bidder should have its own service centre and trained engineers dedicated for trouble shooting and technical support permanently posted in India.				
7		Meter Test System shall be CE compliant for Operating and Safety Requirement. The test system shall meet requirement of IEC60736				
8	Power supply	The meter test system shall be suitable for giving an uninterrupted service in following conditions: Ambient temperature (+) 10°C to (+) 40°C for operation. Relative humidity up to 90%,				
		Mains voltage shall be 3x240V ±10% for three phase supply. Frequency 50Hz ± 5 %.				
		The Equipment must be Dust proof. Meter Test system shall be designed to work satisfactory on power supply fed from UPS.				

9		**CONFIGURATIONS & TESTS TO BE PERFORMED**				
		Test bench shall be suitable to test 10 nos of meters simultaneously for Active , Reactive and apparent Energy with following configuration :				
9.1		1 PH 2 W (10 positions with closed link):Active, Reactive and Apparent Energy prepaid and post paid meters and smart meters				
9.2		3 PH 4 W (10 positions with closed link):Active,Reactive & Apparent Energy prepaid and post paid meters and smart meters				
9.3		3 PH 4 W (10 positions transformer operated):Active, Reactive & Apparent Energy prepaid and post paid meters and smart meters				
9.4		3 PH 3 W (10 positions transformer operated): Active, Reactive & Apparent Energy meters				
9.5		3phase 4 wire ABT meters (3 phase 4 wire 10 positions) in Active, Reactive and Apparent				
9.6		3hase 4 wire panel meters, 10 positions				
9.7		Single phase and three phase multifunction meters				
10		The test system shall have communication provision to read DLMS compliant meters from optical port , RS485 and integration of RF communication of the DLMS compliant meters to carry out Tamper events verifications as per IS 15959. During warrantee period the manufacturer shall support to integrate and include new tamper events as and when included in IS 15959 part1,2 and 3.				
11		Calibration of Electronic Reference Standard meter shall be feasible.				
12		The offered meter test system shall be capable to perform the following tests on the meters as per IEC 62052-11, 62053-11 ,21, 22, 23, IS 13010, IS13779, IS14697 , IS15884, IS 16444 part 1 &2 , IS 15959 part 1 , part2 and part3, IEC62055-31, CBIP 325				
12.1		Test of Meter constant				
12.2		Test of Starting Condition				
12.3		Test of No Load				
12.4		Test of Power Consumption				
12.5		Voltage Dips and Short interruptions with programmable interruption time as per IEC 62052-11 and IS 13779, IS 14697				
12.6		Test of Self heating				
12.7		Test of Heating				
12.8		Test of Immunity to Earth fault				
12.9		Test of Influence quantities: voltage variation, frequency variation				
12.1		Accuracy Test for Active & Reactive Energy :				
12.11		Limits of Error (Balanced & Un balanced in all 4 Quadrants)				
12.12		Test of repeatability of error				
12.12		Voltage variation and frequency variation				
12.13		Wave form: 10% of 3rd harmonic in the current				
12.14		Harmonics Components in the Current & Voltage circuits (IEC 62053 -21 Table 8)-				
12.15		DC & Even harmonics in AC current circuit(IEC 62052-11, 62053-11 and 21, and IS 13779, IS 14697) Rectifier set of 120 A rating to be supplied				
12.16		Harmonic in current and voltage circuit in phase and ant phase as per IEC 62052-11				
12.17		DC and even harmonic (Diode Rectifier set for this test shall be provided)as per IEC 62052-11, IS 13779 and IS 14697				
12.18		Sub harmonics in current circuit - burst fire waveform as per IEC 62052-11 , EC 62053 -21 , 22				
12.19		Odd Harmonics in current -90 degree phase fired waveform as per IEC 62052-11, IEC 62053 -21 Sub Harmonics in AC Current circuits(as per IEC 62052-11 & IEC 62053 -21)				
12.2o		Reverse Phase sequence test				
12.21		Voltage Unbalance test				
12.22		Tamper test event simulation and testing of three phase and single phase meters as per IS 15959 part 1,2, and 3 . Supplier shall support to upgrade software during warrantee period to include addition of tamper events if required as per future ammendment or revision of IS15959 part1, 2 and 3, CBIP325				

13		**CONSTRUCTION AND COMPONENT OF SYSTEM**				
13.1		The source shall be Modular type of rack design in which components of the source and reference standard shall be placed. Cabinet shall have cooling fan of sufficient capacity to avoid temperature increase in side the cabinet during normal operation. The source cabinet shall have protective earth terminal & mains-switch on front or side panel. Te bidder shall list all instruments, test bench, PC, software and other accessories , viz cable, scanners, etc. The bidder shall also submit the block diagram for interconnection of all instruments.				
13.2		Protection against under voltage and over voltage of mains supply shall be provided				
13.3		Provision of limit Setting of output voltge and current				
13.4		System shall be easily programmable to give reference output frequency independent of mains from 45 Hz to 65 Hz in steps of 0.01 Hz				
13.5		Bidder shall give list all the instruments of test bench, software, cables etc which is a part of supply . Bidder shall also give block diagram of interconnections of the instruments.				
13.5		**THE SYSTEM SHALL COMPRISE minimum OF** :				
13.6		Voltage Source 1000 VA per phase				
13.7		Current Source1200 VA per phase				
13.8		3 phase Isolation current transformers 10 nos				
13.9		Multi-secondary voltage transformer for single phase Meters				
13.1 O		Three Phase Reference Meter of 0.02 Accuracy class.				
13.1		Connecting cables.				
13.1		Meter Mounting Rack with Local Error display units.				
13.1		Harmonic Injection facility for Voltage & Current source.				
13.1		Scanning head and error display unit				
13.2		Communication facility for DLMS compliant meters				
13.2		Operation, control, measurement and report making Software				
13.2		PC and Printer				
13.2		10 kVA ON Line UPS with 2 hours back up				

14		**Voltage source capability**				
14.1		It should have output VA burden rating not less than 1000**VA per phase**				
14.2		Electronic protection against overload and short circuit. LED indication for fault shall be provided on amplifier.				
14.3		Distortion factor less than 0.5 %.				
14.4		Provision for superimposition of voltage and current				
14.5		harmonics(Programmable) for the range of 2nd to 20thharmonics With In Phase & Anti Phase with Fundamental frequency				
14.6		0% to 10 % up to 5th harmonic as per IEC 62052-11, latest with phase angle setting				
14.7		Resolution - better than 0.01 %				
14.8		Test voltage range: 40 -300 V (Phase-Neutral) and 70-500V(Phase to Phase)				
14.9		Accuracy of the test setting amplitude <0.05 % or better				
14.1 O		Accuracy of the test setting phase adjustment 0.01 ° or better.				
15		**CURRENT SOURCE CAPABILITIES:**				
15.1		It should have output VA burden rating not less than **1200 VA** per phase				
15.2		Electronic protection against open circuit and over load.				
		Stability 100 ppm / h with integration time of 60 sec				
15.3		Accuracy of the test setting amplitude 0.05 % or better				
15.4		Accuracy of the test setting phase adjustment 0.01 °				
15.5		Distortion factor <0.5 %				
15.6		Maximum possible DC content < 0.05 %				
15.7		Provision for superimposition of voltage and current				

		harmonics up to 20th (Programmable) for the range of 2nd to 5th harmonics With In Phase & Anti Phase with Fundamental frequency as per IEC 62052-11				
		0% to 40 % for 2nd to 5th harmonic as per IEC62052-11				
		The peak value of the superimposed current or voltage shall not exceed 1.4 *I*max resp. 1.4 Umax				
15.8		Test Current range 1 mA to 120A				
15.9		Test voltage and test current system should be freely selectable as symmetrical & Un symmetrical with change in phase sequence				
		Star systems(Phase angle 120°)				
		Any non symmetrical system				
		Any non balanced system				
		Angle setting in step of 0.01° or better				
16		**ISOLATING CURRENT TRANSFORMER AT ALL 10 POSITIONS**				
16.1		The meter test system shall have isolating current transformer(ICT) for each phase and at all 10 positions to test single phase and three phase closed link whole current meters				
16.2		There shall be provision to bypass ICT automatically (electronic protection) when secondary of ICT is kept open.				
16.3		LED Indication shall be provided on ICT to indicate healthiness of ICT.				
16.4		Technical requirements of ICTs shall be as follows.				
16.5		Primary current :120A Continuous				
16.6		secondary current : 120A Continuous				
16.7		VA rating & Burden : 50VA				
16.8		Accuracy Ratio Error 0.01% or better				
	1A to 100A	Phase angle error : 1 minute or better				
16.9		Accuracy ration error : 0.05% or better				
	Below 1 A	Phase angle error : 4 minutes or better				
17		**MSVT at all ten positions for single phase meters**				
		Single phase MSVT at all ten position to test single phase meter is required. This is in addtion to ICT. (As some of the low rating meter are required to be tested with MSVT and not ICT)				
17.1		Phase angle error shall be less than 1 min				
17.2		Primary to secondary Ratio error shall be less than 0.05%.				
17.3		**THREE PHASE REFERENCE METER OF 0.02 ACCURACY CLASS**				
17.4		The class of accuracy of reference standard should be 0.02 % for active and reactive energies and independent of the measuring mode.				
17.5		Voltage range from 10-500 V (Phase - neutral)				
17.6		Working Current range of reference standard should be 1 mA to 120 A Direct connected.				
17.7		Frequency OUTPUT/INPUT proportional to the power to calibrate reference standard against High or Lower precision reference standard.				
17.8		RS 232 serial communication port for communicating with PC				
17.9		Reference standard should have auto-range selection facility.				
17.1O		Measuring modes :				
117.11		2 wire active &Reactive				
17.12		3 wire active & reactive & apparent mode				
17.13		4 wire active & reactive & apparent mode				
17.14		Frequency Range : 45... 65 Hz Fundamental. Indicate harmonic measurement capabilities.				
17.15		Accuracy of Parameters:				
17.16		Voltage : better than 0.01 %				
17.17		Current : : better than 0.01 %				
17.18		Power / Energy (For active and reactive measurement)				
17.19		0.02 % or better at cos Ø / sin Ø =1				
17.2O		0.04% or better at cos Ø / sin Ø =0.5 , Phase Angle Accuracy 0.05 °				
17.21		0.1% or better for the range of 1mA to 50mA at cos Ø / sin Ø =1				
17.22		Drift for individual parameters shall be defined clearly in the offer				
17.23		Temperature drift for voltage & current measurement shall be 5 PPM/ºC or better. Define value of drift in the offer.				
17.24		Temperature drift for power measurement shall be 10PPM/K or better				

17.25.1		**The reference meter shall have following display parameters.**				
17.25.2		True RMS value of each voltage & current input				
17.25.3		Phase angle between voltage / current and defined reference				
17.25.4		Power factor of each phase, Waveform of voltage and current				
17.25.5		Active, reactive & apparent power of each phase				
17.25.6		Total active, reactive & apparent power				
17.25.7		Phase Sequence				
17.25.8		Frequency				
17.25.9		Integration time				
17.25.10		Facility to select integration time between 1 to 99 second				
17.25.11		Meter constant				
17.25.12		Vector Graphical disply on LCD or PC				
17.25.13		Representation of Harmonic voltage & Current in Bar Chart mode & THD				
17.25.14		**Reference Channel**				
		The RSM shall have facility to select reference for phase angle measurement. Selection of reference shall be provided manually & automatically.				
17.25.15		**Frequency output for calibration of reference standard:**				
		This shall provide frequency output proportional to power to calibrate the reference standard against high precision reference standard. This output shall be in commonly used BNC type socket.				
		BNC type socket is preferred for output.				
17.25.16		**Frequency Input for calibration of substandard meters**:				
		Frequency input connections shall be provided preferably with BNC socket to receive electrical pulses from substandard meters. It shall be possible to calibrate/ test substandard meters on offered system.				
18		**CONNECTION CABLES:**				
18.1		All cables required to test ten meters simultaneously in the following range and configuration shall be provided.				
		One extra set of cable shall be supplied. The bidder can quote charges separately of the extra set of cables.				
18.2		120A whole current three phase four wire Ten nos. of meters.Connections from ICT				
		Voltage connections of all meters.				
18.3		10A CT PT operated three phase – four wire for meters 10 nos. of meters				
		Voltage connections of all meters.				
18.4		30A, Single phase meter 10 nos., Direct connection				
		These connections will be without ICT. In case of meters with small ratings such as 5-30A (or below) the terminals of meters are very small and the ICT cables ae not compatible then MSVT has to be used for such meters to isolate voltage and current circuits. Many times burden of current circuits of such meters is very high and therefore secondary voltage of ICT drops.				
18.5		Current cables for 60A, Three phase meters . Connectons from ICT for 10 Meters				
18.6		Voltage connection from bench to meter.				
18.7		Voltage connection cable for testing ERSS : 1 sets				
18.8		Current connection cable for testing ERSS : 1 sets				
		Optical communication head as per IEC 62056-21 for 10 meters				
		RS232 cables , Optical communication cables as required.				
		RS485 cables for reading DLMS meters at 10 positions				
19		**METER MOUNTING RACK WITH ERROR DISPLAY UNIT**				
19.1		The rack shall consist of a light weight aluminum frame for mounting of sensor heads, display devices and meters.				
19.2		The meter mounting rack shall be provided with necessary number of BNC sockets for absolute measurement. The offered software shall have facility to test the external and internal reference standards by using this BNC terminals.these terminal shall be provided with necessary hardware .Necessary cables shall be provided along with equipment to test ERS having frequency output on BNC socket.				
19.3		Emergency button to shut the system shall be available at easy accessible points.				
19.4		Current connection:				
		Incoming and out going terminals of current Source suitable for 120 A continues rating shall be provided on front desk.				
		ICT secondary terminals shall be brought and fixed with spring loaded female connector compatible with push fit type male connector on the desk of meter mounting rack for connection of different types of 6 nos of three phase meters.				
19.5		**Voltage connections :**				
		All voltage connections shall be available on desk of bench with safety connector.				

		MSVT out put of all Ten positions shall be available with safety connectors.				
19.6		**SCANNING HEAD AND ERROR INDICATION UNIT**				
19.7		Photoelectric scanning head for each position suitable for reading the marking from the disc of Ferraris wheel meters without opening the cover of the meter. Same scanner should also be suitable for reading the optical pulse output of electronic meters with LED & LCD Display.				
19.8		Mounting arrangement for scanning head should have facility to move vertical, horizontal, forward or backward directions.				
19.9		The scanning heads must be insensitive to ambient light and shall meet the requirements of IEC 62052-11,Clause 5.11.				
19.1O		The pulse frequency shall be minimum 500 Hz & actual frequency shall be stated by the manufacturer.				
19.11		An Error indication device shall be mounted on each test position. The resolution of error indicate shall be 4½decimal point shall be configurable by software. There shall be provision on the error indication to reset the error to repeat or if something is wrong.				
19.12		Emergeny Switch shall be provided on the bench				
20		**SOFTWARE FEATURES :Shall have provisions for**				
20.1		Operation of the test equipment, display of the actual values, processing and display of the test results and print out of test report should be effected by the test software.				
20.2		The window based software must have facility of making tables for common and changing information.				
20.3		The computer should be interfaced to the measuring device and power source.				
20.4		The user friendly software should be menu driven operated with the help of mouse and keyboard in manual and automatic mode.				
20.5		The manual operation mode shall have following tasks:				
20.6		Control of source				
20.7		Actual value on PC screen				
20.8		Waveform of output and harmonic analysis				
20.9		Perform the accuracy test of the energy meters				
20.1O		The window based software should have different module to prepare test sequence to carry out the testing in fully automatic mode. These module shall be designed in such a way that user can prepare test sequence very easily. It shall be posible to run predifined and saved program. Program should supports the following tasks.				
20.11		User interface to operate the system. Easy to operate test table				
20.12		Supervision and control of the test procedure				
20.13		Supervision and display of the test current and voltage				
20.14		Indication of the meters under test, evaluation and report of the test results				
20.15		Facility to define test parameters in terms of percentage and absolute term				
20.16		Facility to define error limit in two level				
20.17		Facility to protect the system from over voltage in manual mode and automatic mode				
20.18		Facility to check meters for short circuit and open circuit conditions prior to start of testing in fully automatic mode for each sequence				
20.19		Facility to limit maximum current and voltage of the meter under test for protection of the meter				
20.2O		It shall have facility to interrupt and restart testing				
20.21		Printout facility with desired header				
20.22		Back up facility				
20.23		Testing facility of at least 10 different meter with 10 different meter constant				
20.24		Software shall have facility to display of different voltage and current				
20.25		Display of curve of test voltage and current in presence of harmonics				
20.26		The software shall have facility to display following parameters				
20.27		Individual phase voltage				
20.28		Individual phase current				
20.29		Phase angle, power factor symmetrical or unsymmetrical star system				
20.3O		Total power factor				
20.31		Individual phase power(Active, Reactive and Apparent power)				
20.32		Total power(Active, Reactive and Apparent power)				
20.33		Frequency				
20.34		Phase sequence				
20.35		Measurement Mode				
20.36		Vector display				
20.37		Tamper logs read out through optical port				

21	**Documentation**	The bidder shall submit detailed General arrangement drawing for Source, Meter Mounting Rack with different terminal required for voltage and current circuit connection,, Fixing arrangement of ICT and connection scheme used for ICT				
21.1		Wiring during testing and proposed installation scheme of complete system and leads and connectors provided to mount any number of meters on the Meter Mounting Rack along with their offer. In absence of this offer will be liable to rejection				
22		The test system will be installed with UPS. The system shall be able to function on power supply of ON line UPS.				
23		following documents shall be supplied along with each test system.				
		1.Operating manual of each components like reference standard, amplifier, etc.				
		2.Wiring diagram				
		3.Service manual				
		Procedure to validate software shall be provided				
24	Installation and Commissioning	The supplier shall be responsible to install & commission the meter test equipment at the purchaser location. The supplier shall submit the layout plan, installation proposal and electric supply requirements within 4 weeks after receiving the purchase order				
25	PC	Shall be supplied with configuratiomas- Colour Monitor : SVGA 18.5" LCD				
		Pentium Processor : 8th Generation Intel core i5 Processor , 2 TB HDD, 8 GB SD RAM				
		Ports (Minimum) : 2 serial, 2 USB,1 parallel and Ethernet100 , Mbps(For LAN & Internet)				
		Operation System : Windows latest				
		MAKE - HP/DELL				
		Laser Printer				
26	UPS	10 kVA ON Line UPS with 2 hours back up shall be supplied				
		Make – APC, Tata Libert, Schneider, POWER ONE only.				
27		ADDITIONAL ACCESSORIES				
27.1		Scanner 2 nos				
27.2		Diodes Rectifire set(For testing DC & Even Harmonics test) ; 1 Set with connecting cables to meters				
		Any other spare parts require to maintain the system				
28		PN : 1. A detailed technical catalogue/literature/pamphlet and any other technical details shall be sent in hard copy in a sealed cover super scribing enquiry number and due date so as to reach within the due date and time.				
		2. Letter of authorization issued by the foreign Principal shall also be sent by the Indian agents who have offered on their behalf.				

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.
Address : Joint Director (Purchase), Purchase Authority,
Central Power Research Institute, Govindpura, Bhopal-462023
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