

ANNEXURE-I

Specification of Current Transformer(CT):

The specification covers manufacture, test, & supply of LT Current transformers of class 0.5s accuracy. The CTs shall be suitable for metering purpose.

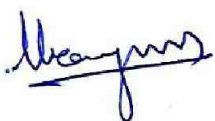
The CTs shall be of ring type (Other type of CT's shall not be accepted).

- The secondary leads shall be terminated with Tinned Cooper rose contact terminals with arrangements for sealing purposes.
- Polarity (both for primary and second leads) shall be marked.
- The CTs shall be varnished, fiberglass tape insulated or cast resin, air-cooled type. Only super enameled electrolytic grade copper wires shall be used.
- The CTs shall conform to IS 2705:Part-I & II/IEC:185 with latest amendments.
- Technical details shall be as given below:

1.	CT rating	1000/5 A
2.	Class of Accuracy	0.5s
3.	Rated Burden	15 VA
4.	Power Frequency Withstand Voltage	3KV
5.	Highest System Voltage	433 V
6.	Nominal System Voltage	400 V
7.	Frequency	50 Hz
8.	Supply System	3 Ph. Solidly grounded Neutral System

- Bore diameter of the CT shall not be less than 40 mm. Ring type CTs shall have suitable clamp to fix the CT to panel Board, wherever required.
- The limits of current error and phase angle displacement as per IS:2705.
- Rated extended primary current shall be 120% of rated primary Current in accordance with IS:2705 Pt-II.
- Rated ISF (Instrument Security Factor) shall be declared by the manufacturer & marked on the CT.
- CT's shall be made with good engineering practices. Core winding shall evenly spread stress & avoid stress concentration at any one point. Cast resin CT's shall be processed by hot curing method under controlled vacuum conditions.
- The base shall be of hot dip galvanized steel.
- All tests shall be carried as per IS.2705 Part-I and II and submit the related documents along with the material.
- The CTs shall have marking and nameplate as per IS 2705 in addition to class of insulation & ISF. The markings shall be indelible. The nameplate shall be securely fixed to the body of the CT

FOR TECHNICAL JUSTIFICATION: VENDORS SHOULD SUBMIT CATALOGUE.



ANNEXURE - II

LOAD MANAGER SPECIFICATIONS:

Multi-function Digital Panel load managers (Energy meters) suitable for 3phase, 415 Vac, 50Hz with below specifications. For Power and Harmonics monitoring, capturing abnormalities in the system. For analysis of Load Side Energy Consumption and identify energy Loss by load management

Type: Class 0.5s Accuracy as per IEC 62053-22; Sampling rate: 64 samples/cycle on all 3 voltage & current channels simultaneously.

Sensing/Measurement	True RMS up to 31 st harmonics, minimum 1 sec update time, 4 quadrant power & energy.
Measuring parameters:	
Voltage	Average voltage of L-L, L-N/phase
Current	Average line current of 3-phase, per phase and total. Min & Max Current per Phase wise (On communication) Unbalance Percentage of Current (On communication)
Frequency	Total frequency
Power factor	Per phase and total
Power	Active power(kW), Apparent Power(kVA), Reactive Power(kVAR) per phase and total
Energy	Total Active Energy(kWh), Apparent Energy(kVAh) and Reactive Energy(kVAR)
Harmonic Distortion (THD)	Total Harmonic Distortion (THD) for Voltage and Current Per Phase
Inputs:	
Current	5A nominal; 6A continuous max
Voltage	400V LL nominal; 480V LL continuous max
Aux Supply (Control Power)	80 - 270 V AC, 45 to 65 Hz 100 - 300V DC
Programmable CT & PT	User programmable PT/CT primary & Secondary ratio
Port	RS- 485 Communication Port with Modbus RTU Protocol

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CONTD....

General Specifications:	
Burden	Voltage & current input < 0.2VA per each phase
Overload	20times I max for Half Cycle as per IEC 62053-21
Isolation	Optical isolation between power and communication up to 2kV
Impulse withstand voltage	6 kV (peak) -1.2/50microsec
IP Rating	Minimum IP 52 (front) and IP 20 for case
Operating Temp	-10 to +55 deg C
Humidity	5 to 95% Non-condensing
Display	LCD Display/LED display with 5 digit or more and 2 or 3 Line or more.
Certification	CE, Standard IEC61010-1; 2010
Accuracy	
Voltage	0.2% of reading (10% to 120% nominal)
Current	0.2% of reading (5% to 120% nominal)
KWh	Class 0.5s as per IEC62053-22 & Kvarh: Class 2
THD	1% of reading
Calibration	Calibration certificate of the meter should be provided. Or relevant document that shows the meter is calibrated
Meter Size	Dimensions of the meter is to be mentioned by the bidder. Preferable dimension is 96x96x90 mm.

FOR TECHNICAL JUSTIFICATION: 1. OEM VENDORS SHOULD SUBMIT CATALOGUE.
2. VENDORS OTHER THAN OEM SHOULD SUBMIT AUTHORISED DEALER CERTIFICATE ALONG WITH CATALOGUE.

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