

Department of Electrical Engineering

Enquiry No. IITK/EE/SMARTCITY/2018/02

Opening Date: 17-09-2018

Closing Date: 15-10-2018

Subject: Purchase of Three Phase LTCT meters (20 Numbers).

We are interested in the purchase of 3 phase LTCT meters as per the following details.

Minimum desired technical specifications for 3 phase LTCT meters are:

The smart meters shall meet the following minimum features:

1. Measure and compute electrical parameters.
2. The smart meter shall support bidirectional communication feature.
3. The smart meter shall supports for **demand side management, import & export of power.**
4. Store and communicate requested data as per programmed interval.
5. Detect, resolve abnormal & tamper events for a required period.
6. Inbuilt memory to store all relevant meter data, events for a required period.
7. Meter communication protocol shall be as per open standard and mentioned IS/IEC codes.
8. Option for both prepaid and postpaid metering.
9. Shall be configurable remotely
10. Support remote firmware upgrade.
11. Support remote load management.
12. The following groups of data shall be captured
 - a) Electrical parameters
 - b) Power quality parameters.
 - c) Abnormal events.
13. Load reconnect/ disconnect switch-Requirements given below
 - All smart meter shall have a supply Disconnect/ reconnect switch/contacter
 - The smart meter compatible for AMI system integration, shall support only remote disconnect/reconnect of consumer supply via the supply contactor with 1 relay,2 relay & 4 relay outputs
 - When the smart meter performs a disconnect operation, all outgoing circuits from the meter shall be disconnected.

Specifications of item required:

Minimum desired technical specifications for 3 phase LTCT meters are:

Sr. No.	Technical Specifications	As per our Requirements	Details as per Offer
1	Name of Manufacturer		
2	Type of Meter (Model No.)		
3	Accuracy	Class 1.0	
4	Standard Applicable	IS-13779 with latest revision, IS 16444:2015/2017 IS15884:Alternating current direct connected static prepayment meters for active energy (class 1 and 2) IS15959 : data exchange for electricity meter - reading tariff and load control IS 14434 (1998) polycarbonate moulding & extrusion materials. IS 14772:2000 general requirements for enclosures for accessories electrical installations IEC 61850 MMS protocol. COSEM for 3-phase meters as per IS 15959.	
5	Rated voltage	415 V	
6	Operational Voltage	415 Volts, voltage variation range: -30% to +20%. As per IS 13779	
7	Rated Current	100 Amps (three-phase), I _{max} = 120%I _b , starting current = 0.2%I _b	
8	Meter Constant	3200 Impulse / KWh	
9	Frequency	50 Hz (+/- 5%)	
10	Power Factor	Zero (lagging) through to unity to zero (leading).	
11	Cut off voltage (at which meter stop working)	-50%	
12	Communication Options	RS485 Compatibility for SCADA, AMI integration Modems(GPRS/GSM) Master/slave arrangement Ethernet/Wi-Fi Internal modem power supply ANSI type 2 optical port	
13	Remote Connect & Disconnect	Connection/disconnection through latching relay	
14	Stored Data	TOD (Time of day) data Two seasons & four TOD tariff tables configuration in meter	

15	Load survey data parameters to be logged for each survey integration period (SIP). Last 45 days load survey to be available in meter. SIP can be configured as 15/30/60 minutes.		
16	Peak load management	Over current limit upper limit 120% Over load limit Reduced load limit Duration for thresholds Max one hour in resolution of 0.1 sec	
17	Communication setting	Two way communication IP address Port number APN name Allowed SMS sender max. 2 numbers	
18	Software	Software for programming and reading of meter compatible with windows, AMI system Allow offline configuration. Generate reports.	
19	Temperature range of operation	As per IS 13779	
20	a. Continuous current rating (Amp.) b) Running with no load & at 115% voltage	a) a.100 Amps b) b. No creeping	
21	Short time over current for one half cycle at rated frequency.	20 I _{max} .	
22	Starting current (min) at which meter shall run & continue to run.	0.2% of I _b .	
23	Power loss at rated frequency & reference temperature a) Current Circuit at rated current. (3ph) b) b) Voltage circuit at rated current. (3ph)	As per IS-13779	
24	Performance of meter in tamper conditions		
	i) Phase-neutral interchanged /Phase to phase interchanged	Should work within specified accuracy and shall record correct energy	
	ii)Main & load wire are interchanged	Should work within specified accuracy and shall record correct energy	
	iii)Load is not terminated back to meter & current is drawn through local earth fully or partially	Should work within specified accuracy and shall record correct energy	
	iv)Indication on above tamper conditions	LCD/LED indication	
25	Suitability of meter to sustain over voltage i.e. phase to phase	Should sustain	

	voltage injected between phase & neutral.		
26	LCD indicators for different tamper conditions	Reverse current Earth tamper Neutral missing Magnet tamper	
27	Meter constant (impulse / kwh)	To be specified by supplier	
28	Electromagnetic compatibility (EMI/EMC severity level)	As per IS 13779/99	
29	Effect on accuracy of external magnetic field & harmonics	Should work within accuracy as per specification	
30	Effect of accuracy in tamper conditions	Should work within accuracy	
31	Approximate weight of meter	To be mentioned	
32	Type of body	To be specified	
33	Whether mounting of components on PCB shall be SMT type	SMT type and ASIC technology	
34	Whether quality assurance plan submitted	Required to be submitted.	
35	Testing certificates	As per specifications.	
36	Whether offered meter type tested as per IS: 13779/99 or IEC 62053 and as per the requirement of specification. (Indicate name of laboratory / Ref. of report no. and date).	Name of laboratory to be specified. Page nos. of offer to be specified.	
37	Guarantee	5 year from the date of supply OR 5 years from the date of commissioning of meter whichever is earlier.	
38	BIS license no. & date with its validity for ISI certification mark on meter	To be mentioned	
39	ISO accreditation no. & date with its validity	To be mentioned	
40	Past experience	Copies of orders to be enclosed	

Please send your **Sealed Quotation** to the undersigned for the same.

Note:

1. Our organization is an educational institute of repute and liable to get educational discount from the manufacturer/supplier. Please specify the discount separately.
2. LTCT three phase meters should be compatible with Advanced Metering Infrastructure (AMI) system installed at IIT Kanpur.
3. All quotations must reach the undersigned on or before **15-09-2018**.
4. Quotation must be valid for 90 days.
5. Delivery period should not be more than 1 **month**.
6. Send complete detail of the product(s).
7. Payments terms: 90% after delivery, 10% after successful installation/mounting.
8. IITK is exempted from excise/custom duty.
9. All prices are to be for IIT Kanpur.

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