

1023288/2022/HEP-SW/49300



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12930 REV. 01
(For PSTCL)

PAGE 1 OF 2

MULTI FUNCTION METER

1.0 APPLICATION: This annexure covers the requirement of Multi function meter used in switchgear panels.

2.0 TECHNICAL DETAILS OF MULTI FUNCTION METER:

Description	BHEL Mandatory Technical Requirement	Vendor compliance in (Yes/ No)
1	Type	Digital
2	Sensing	3 element, 3 phase, 4 wire system
3	Voltage Input	63.5V Ph-to-N
4	Current Input	1A OR 5A (Site selectable preferred)
5	PT Primary ratio	Site Programmable
6	CT Primary ratio	Site Programmable
7	ACC. Class	It-01 :: 0.2S; It-02 :: 0.2 It-03 :: 0.5; It-04 :: 0.5S (As per enquiry description)
8	Applicable Standard	IS14697/ IEC62053/CBIP88 & CBIP 304 (latest).
9	Mounting / Size	Flush Type / 96 sq mm
10	Max. Continuous current	120% I _{basic}
11	Aux. Supply.	110VAC from PT supply (if required)
12	Measurement	i) 3-Ph Voltages RMS ii) 3-Ph Currents RMS iii) Frequency iv) Power Factor
13	Power parameters	i) KVAR ii) KW iii) KVA
14	Energy parameters	i) KWH Import ii) KWH Export iii) KVARH Import iv) KVARH Export
15	Separate registering of KWH consumption for import & export	
16	Separate registering of KVARH consumption for import & export	
17	All meters must have non-volatile memory or memory backed up by lithium battery.	
18	All meters shall have LED/LCD display for display of all electrical parameters.	
19	Multifunction meters shall have industry standard Modbus RTU protocol with RS485 serial port. In case of any other port in meter, suitable converter shall be provided with each meter.	
20	Multifunction meters shall support Modbus RTU function code 3 (Read Holding Register) or 4 (Read Input Registers) for polling number of registers at consecutive memory locations in one query.	

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REV.	01	PRINTS TO:-	APPROVED –		
ALTD.	RR/DP	Issued by email and placed on web.	S. Chaturvedi		
APPD.	MHN		PREPARED	ISSUED	DATE
DATE.	27.10.21		Rahul	M. Hussain	02.06.2012



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PAGE 2 OF 2

21	Supplier to give demonstration at site regarding capability of multifunction meter for supporting Modbus RTU/RS 485 protocol during SCADA/EMS commissioning, if required.	
22	Energy shall be directly computed in CT and VT primary ratings for display and stored in a register.	
23	All the electrical parameters shall be automatically displayed in a cyclic manner on the meter at regular intervals. It shall, however, be possible to manually hold and monitor any parameter, on demand, by pressing a push button switch on the meter.	

4.0 GENERAL NOTES :

SL.NO	DESCRIPTION	VENDOR COMPLAINT	REMARKS
1.	Compliance to Technical details shall be filled as per clause 2.0 of multifunction meter.	YES/NO	
2.	All items shall be procured from one source on technically cleared package wise L-1 basis.	YES/NO	
3.	Lugs (if special type of lugs are required) for use with the meters shall be supplied in adequate qty. along with the meters with no extra charge.	YES/NO	
4.	Supplier to submit the technical catalogues giving over all dimensions, cutout dimensions, mounting details & terminal disposition, connection/wiring diagram for all items at the time of offer.	YES/NO	
5.	Multifunction meter offered shall be of type tested design as per relevant IEC/IS. In case of any discrepancy or inadequacy is found by end user at any stage, the same shall be resolved by supplier with end user with no binding on BHEL and without any price implication.	YES/NO	
6.	The supplier will provide technical support for testing of multifunction meter at BHEL Bhopal works during inspection by customer, without any price implication.	YES/NO	
7.	If required, the supplier will provide technical support to BHEL engineers for commissioning the equipment at site, without any price implications.	YES/NO	

5.0 ACCEPTANCE CRITERIA:

i)	Visual checks for cracks and surface finish.
ii)	Availability of all routine test certificates.
iii)	Model as per PO annexure or engineering approval

6.0 PERFORMANCE GUARANTEE:

Meter shall perform satisfactorily for a minimum period of 48 months from the date of receipt of last lot at BHEL Bhopal works.

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PQR, Rev-00- (Multifunction meter)**Annexure-1****1. Past Performance**

The Bidder shall have supplied at least 10% of the total quantity covered under this enquiry as on the date of techno-commercial bid opening of this enquiry

Document required: Bidder to furnish unpriced P.O or Invoice copy or relevant documents in support of supply.

2. Experience Criteria

The offered type of multifunction meter should be in successful operation for at least 2 year in last 7 years as on the date of techno-commercial bid opening date of this enquiry

Document required: Bidder to furnish MOM with customer/ Site or Customer email/ letter or any customer document for commissioning status

3. Organizational Capability:

The Bidder shall have after sales service support set-up for providing product repair/ rectification in India.

Bidder to furnish set-up details along with an undertaking in respect of above.

Arvind Kumar
Dy. Manager / SWE