

**MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.**  
**EHV (O&M) DIVISION, AKOLA**

<p><i>Office of</i> <b>Executive Engineer</b> <b>EHV (O&amp;M) Division, Akola</b> 2nd Floor, Vidyut Bhawan, Ratanlal Plots, Akola – 444 005 Tele : 0724-2410356 Email Id.: <a href="mailto:ee1210@mahatransco.in">ee1210@mahatransco.in</a> Website: <a href="http://www.mahatransco.in">www.mahatransco.in</a></p>
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No. : EE/EHV/O&M/DN/AKL/Tech/ 1393

Date: 09.09.2022

**\*\*E - ENQUIRY\*\***

**Subject: Enquiry for work of providing & fixing of Multifunction Digital Energy Meter at various Substation under EHV O&M Division, Akola.**

Dear Sir,

Sealed and superscripted quotations are invited for work of providing & fixing of Multifunction Digital Energy Meter at various Substation under EHV O&M Division, Akola. The quotation giving full particulars should reach this office on or before **Dt. 16.09.2022** at 13.00 Hrs positively subject to the following terms and conditions and Schedule A (attached separately). Quotations will be opened on the same day at 15:00 Hrs, if possible.

**\*\*SCHEDULE – A\*\***

Sr	Description of Unit	Unit	Qty.	Ex. Rate (Including labour Cess & Excluding GST)
1	Providing & fixing of Multifunction Digital Energy Meter (SAP No. 50011086) (as per technical specifications attached)	EA	1	

**GST @18% will be paid extra.**

**Terms & Conditions**

- 1) The quotation must be forwarded in sealed envelope duly super scribed with all details i.e.  
I. Enquiry No. & Date :                      II. Due Date:                      III. Quotation for:-
- 2) The quotation must be written with ink or typewritten. Any as catching or over writing must be initialed.
- 3) **Rates:** Rates should be quoted inclusive of all taxes except GST. **GST will be paid extra.**
- 4) **Period of Work Completion:** The work shall be completed within **45 days** from the date of handing over of site by the authority concerned S/Stn In-charge / Addl. Executive Engineer. The decision of the concerned S/Stn In-charge will be final in this regard.
- 5) **Security deposit:** Security deposit @ **5%** of the order value will have to be deposited to this office within **07 days after** confirmation of work order.

- 6) **Agreement Bond:** Agreement to be executed on stamp paper of Rs. 500/-at your cost & should be submitted to this office within 7 days from the receipt of this work order.
- 7) **Penalty:** If the agency fails to execute the work within stipulated period mentioned above then, the penalty @ of ½ % per week maximum 10 % shall be levied on contact value.
- 8) **T & P/ Labour:** No T & P and labour will be provided by the MSETCL.
- 9) **REQUIRED DOCUMENTS:**
  - 1) **GST Registration and PAN copy.**
  - 2) **Shop Act License.**
  - 3) **Experience certificate / work completion certificate for execution of similar type of works.**
  - 4) **Electrical Contractor license.**
- 10) **The agency must have experience of carrying out the similar type of work.**
- 11) **Workmanship:** Your workmanship shall be best & shall be guaranteed for one year. During this period, if any defects are developed / observed, the same will have to be attended by quote at his cost only.
- 12) **Statutory Obligation:** The Company will not be responsible for any mishaps/accidents to agencies workmen etc. during & after execution of work. All applicable statutory rules, laws will have to be observed by agency, MSETCL will not be responsible for any consequences.
- 13) **Taxes:** GST and other applicable taxes will be deducted as per rules while effecting the payment.
- 14) **Loss / Damages:** For damages if caused to companies property during execution of work the compensation depending upon nature of damage &/or as estimated by Engineer Incharge will be recovered from quote.
- 15) **Exception:** No outages will be extended for execution of the said work however in any exceptional case; same will be extended after observing all other formalities and considering the system condition.
- 16) **Payment:** 100 % payment will be done at the earliest depending upon availability of funds.
- 17) **Discretion:** The undersigned reserves the right to reject any or all quotation without assigning any reasons thereof.

Thanking you,

**Executive Engineer**  
**EHV (O&M) Division, Akola**

### Technical Specifications for Microprocessor Based Multifunction Energy Meters:

Parameters		Description
VAF	PT Secondary	Onsite programmable 100 ...600V L-L (57.7 ... 346V L-N)
	PT Primary	100V...692kV LL (Programmable on site)
	Measuring voltage range	20% ... 120% of rated value
	Voltage Overload Withstand	2 X rated value for 1sec, repeated 10 times at 10 second intervals
	Voltage Input VA Burden	< 0.35 VA approx. per phase
	CT Secondary (Onsite Programmable)	1A/5A RMS
	CT Primary (Onsite Programmable)	1...9999A
	Measuring current range	5mA...6A
	Max continuous input current	120% of nominal value
	Current Overload Withstand	20x rated value for 1sec, repeated 5 times at 5 min
	Current Input VA Burden	< 0.3 VA approx. per phase
	Frequency	40...70 Hz
	Sampling frequency (50 Hz)	1.6 kHz / phase
	Overvoltage category	CAT III
	Maximum Power measured per phase	462.962 MVA Per phase
	Energy Roll over Count	14 digit (W -7 to 14; kw - 7 to 12; MW - 7 to 9)
Communication	RS485 MODBUS COmmunication	RS485 Port with Modbus communication and 20x User Assignable registers
Auxiliary Supply	Power Supply Range	60 – 300 VAC /DC or 12 – 60VAC/DC
	VA Burden	< 6.5 VA approx.
	Frequency	45...66Hz
Accuracy	Voltage	0.2%
	Current	0.2%
	Frequency	0.15%
	Power (Active)	0.2%
	Power (Re-active)	0.4%
	Power (Apparent)	0.2%
	Energy (Active)	0.2%
	Energy (Re-active)	0.2%
Energy (Apparent)	0.2%	
Environmental	Temperature range	-10 ... +55 °C
	Relative humidity	0... 90%RH (non condensing)
	Degree of pollution	2
Display	Display Type	Color TFT (Touch screen)
	Parameter Digit Resolution	4
	No. of simultaneous display parameters	3
Mechanical	Weight (g)	500

Properties	Device dimensions in mm (H x W x D)	96 x 96 x 80
	Protection class	Front: IP54 (Option to fix IP65 Kit without changing the meter), Rear: IP20
	Mounting of Instrument	Panel Mounting
	Connecting phase (U / I), Single core, multi-core, fine-stranded Terminal pins, core end sheath	2.5 mm <sup>2</sup> x 2 fine wire or 4 mm <sup>2</sup> single wire

**The Microprocessor Based MFM Meter Should Display Following Parameters:**

Parameters	
Voltage	√
Current	√
Frequency	√
Power (Active)	√
Power (Re-active)	√
Power (Apparent)	√
PF (Power Factor)	√
Energy (Active)	√
Energy (Re-active)	√
Energy (Apparent)	√
User Selectable 3PH 3W/4W	√
On site CT Primary Programmable	√
On Site CT Secondary Programmable (1 / 5A)	√
On Site PT Primary Programmable	√
On Site PT Secondary Programmable	√
Onsite selection of Auto scroll / Fixed Screen	√
Password Protection	√
Min / Max Storage Value (System Voltage / Current)	√
Phase Angle	√
True RMS measurement	√
THD Measurement	√
Parameter Screen recall	√
Run Hour	√
ON Hour	√
Number of Interruptions	√
Phase Reversal Indication	√
Neutral Current	√
Current Reversal Indication	√
Phase Absent Indication	√
Demand Current	√
Demand Active Power	√
Demand Apparent Power	√
Max. Demand Current	√
Max. Demand Active Power	√
Max. Demand Apparent Power	√
Limit (Alarm) / Pulse Relay output (Optional)	√
Parameters	

Programmable Energy format & Energy rollover count	√
User selectable Low Current Suppression	√
Phaser Diagram (Pictorial Representation)	√
VA waveform (Pictorial Representation)	√
Communication MODBUS RS 485 (Plug and play card Facility)	√

**The Microprocessor Based MFM Meter Should meet following Standards:**

EMC	IEC 61326
Immunity	IEC 61000-4-3. 10V/m min – Level 3 industrial Low level
Safety	IEC 61010-1-2001 , Permanently connected use
IP for water & Dust	IEC60529
Installation Category	III
High Voltage Test	2.2 kV AC, 50Hz for 1 minute between all electrical circuits
Test and Procedure	IS 13875
Pollution degree	2

**Executive Engineer  
EHV O&M Division, Akola**