

**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>
--

**No. : EE/EHV/O&M/DN/AKL/Tech/ 1454**

**Date: 21.09.2022**

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

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

**Ref :** Enquiry No. EE/EHV/O&M/DN/AKL/Tech/ 1393 Dt. 09.09.2022

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. 28.09.2022** 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\*\***

<b>Sr</b>	<b>Description of Unit</b>	<b>Unit</b>	<b>Qty.</b>	<b>Ex. Rate (Including labour Cess &amp; Excluding GST)</b>
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 contract 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**