

## INTERFACE (ABT) METER AS PER CEA GUIDE LINES — EM133+ ABT

- DIN Rail mounted Multi-Function Meter
- Provides all parameters as per CEA guide lines for Interface (ABT) Meter
- Serial RS485 for MODBUS, DNP3 and IEC– 60870-5-101
- Optional second port for communication—RS485, RS232 or ETH
- Protocols available over ETH—MODBUS TCP, DNP 3.0 and IEC– 60870-5-104
- Accuracy class 0.2S as per IEC-62053-22
- Data log memory
- Meter sealing arrangement

As per CEA guidelines published on 17th March 2006 and its amendment dated 4th June 2010, Interface (ABT) meters are to be installed by all consumers who have been permitted open access at following locations.

### i) *Generating Stations :*

- On all generation feeders
- On all outgoing feeders.
- On each on high voltage side of generator transformers.
- High voltage side of all station auxiliary transformers.

### ii) *Transmission and Distribution Systems :*

- At one end of line between the sub-stations of the same license.
- At both ends of line between sub-stations of two different licensees.
- High voltage side of interconnecting transformers.
- Consumers directly connected to inter-State Transmission system who are covered under ABT.

These special meters allow monitoring of exchange of energy between two open access



### EM133+ ABT

Panel mounted, four quadrant Satec Smart MFM EM133+ ABT provides all required electrical parameters for interface meters (ABT) as per CEA guidelines with accuracy class 0.2S. The meter comes with one isolated RS485 communication port as standard. This port can be configured for MODBUS RTU, DNP3 or IEC-60870-5-101 communication protocols.

The smart meter also provides option of second communication port. The second communication port can be RS485, RS232 or ETH. The second communication port can be configured for required baud rate and protocol—( MODBUS RTU over RS485 or RS232, MODBUS TCP over ETH, DNP3 over RS485 or ETH, IEC-60870-5-104 over ETH).

Data log memory (130KB) for logging 15 minutes block data is provided.

Meter can also be sealed as required.

PAS software is supplied with each meter. The software enables configuration and operational testing of all meter parameters.

## ABT PARAMETERS AS PER CEA GUIDELINES

Details of parameters in EM133+ ABTs per CEA guidelines are provided below :

| Sr. No. | ABT Parameter as per CEA guidelines   | MODBUS Register Address in PM130EH+ ABT     |
|---------|---|---|
| 1       | Phase wise KW at peak KVA   | KW L1– 29958 KW L2—29960 KW L3– 29962       |
| 2       | Phase wise KVAR (reactive) at peak KVA  | KVAR L1– 29964 KVAR L2—29966 KVAR L3– 29968 |
| 3       | Phase wise Voltage at peak KVA  | V1– 29952 V2– 29954 V3-29956                |
| 4       | KVA Block Demand  | Import - 14666 Export—14668                 |
| 5       | KVAR Block Demand   | Q1-14652 Q2-14654 Q3-14656 Q4-14658         |
| 6       | Neutral Current Block Demand  | 14660                                       |
| 7       | Voltage Block Demand (V-Average)  | 14662                                       |
| 8       | Frequency Block Demand (Average Frequency)  | 14664                                       |
| 9       | Power Down Time   | Power off duration—44210                    |
| 10      | Cumulative Programming Counter  | 44216                                       |
| 11      | Cumulative Tamper/Event Counter (POS/NEG Phase reversal, Low Volt/Amps RT, Low Volt/Amps Average and HI Volt/Amps unbalance RT) | 44218                                       |
| 12      | Cumulative MD Reset Counter (For current billing period)  | 44220                                       |
| 13      | Cumulative MD Reset Counter (For previous billing period)   | 44222                                       |
| 14      | Average Power Factor  | Total PF—14342                              |
| 15      | Line Currents   | L1-13958 L2-13960 L3– 13962                 |
| 16      | Phase Voltages  | V1-13952 V2-13954 V3– 13956                 |
| 17      | Date and Time   | Date and Time—4352 to 4358                  |
| 18      | Billing Summary Registers   | 14760—14779                                 |
| 19      | Billing TOU Registers   | 20096—21519                                 |
| 20      | Summary Accumulated Demands   | 20608– 20627                                |
| 21      | TOU Maximum Demand Registers  | 20992—22583                                 |
| 22      | Summary Maximum Demand Registers  | 37504– 37533                                |
| 23      | TOU Profile—Daily Energy Register   |   |
| 24      | TOU Profile—Daily Maximum Demand Register   |   |



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