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SM307

THREE PHASE CT/VT

SMART CT/VT METER



PRODUCT OVERVIEW

The Three-Phase Smart CT/VT Meter is a versatile and highly efficient solution for precise energy measurement in high-voltage applications. It supports multiple tariffs, load profiling, and real-time power quality monitoring, ensuring optimized utility operations. With dual communication modules and advanced anti-tamper features, it provides secure, remote access for enhanced grid management.

PRODUCT FEATURES

- **Dual plug-and-play communication modules.**
- **Large LCD display for real-time meter monitoring.**
- **Non-volatile memory for data retention without a backup battery.**
- **Support for local and remote firmware upgrades.**

STANDARDS AND COMPLIANCE

- **IEC 62052-11:**
  Electricity metering equipment (a.c.) – General requirements, tests, and test conditions – Part 11: Metering equipment.
- **IEC 62053-22:**
  Electricity metering equipment – Particular requirements, Part 22: Static meters for AC active energy (Classes 0.1S, 0.2S, and 0.5S).
- **IEC 62053-24:**
  Electricity metering equipment – Particular requirements, Part 24: Static meters for fundamental component reactive energy (Classes 0.5S, 1S, 1, 2, and 3).
- **DLMS/COSEM:**
  Device Language Message Specification/Companion Specification for Energy Metering.

Operating Voltage	3×57.7/100V~230V/400V
Voltage Range	0.8Un~1.2Un
Current rating	1(10)A
Starting current	Active Energy: 0.2% of Ib Reactive Energy:0.4% of Ib
Frequency	50Hz±5%
Accuracy Class	Active Energy: CL 0.5S 10000 imp/kWh Reactive Energy: CL 1.0 10000 imp/kvarh

KEY FUNCTIONS

MEASUREMENTS

- kWh/kvarh (import, export, and absolute).
- Maximum kW/kvar demand (import, export).
- Cumulative kW/kvar demand (import, export).
- Instantaneous per-phase values for voltage, current, and phase angle.
- Total and per-phase instantaneous values for active power, reactive power, and power factor.
- Real-time date and time display.
- Frequency measurement.

TARIFF FUNCTIONS

- Time of Use (TOU) measurement for import/export energies (kWh/kvarh) and import/export demands (kW/kvar), supporting up to 4 tariffs, 12 seasons, 12 weeks, 16 switches, and 100 special days.
- Up to 32 energy tariff and 32 demand tariff registers.
- Battery or supercapacitor to maintain clock and calendar functionality.

LCD DISPLAY

- 10-digits LCD with three decimal points for power and demand, and two decimal points for energy; decimal points are programmable.
- LCD size exceeds 24 cm^2, with digit height of 12mm.

LOAD PROFILES

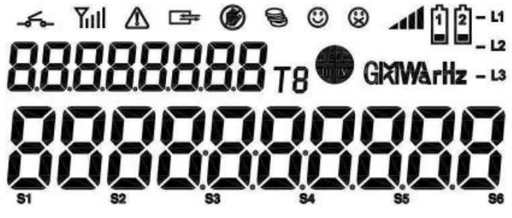
- Records up to 100 days of 15-minute load profiles with 16 channels, on a FIFO basis.
- Configurable load profile intervals from 1 to 60 minutes.

BILLING

- Automatic monthly billing reset at 00:00:00 midnight on the 1st of each month, with configurable settings.
- Manual billing reset via demand reset button.
- Remote billing reset from the AMI central system.
- Storage of up to 12 months of billing data in the meter's memory.

POWER QUALITY

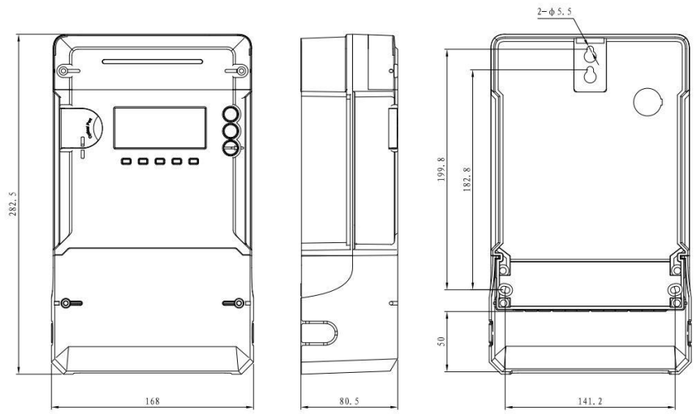
- Voltage unbalance detection.
- Current reverse detection.
- Over-voltage and under-voltage detection with configurable time thresholds.
- Long and short outage detection with configurable time thresholds.
- Over-current detection with configurable time thresholds.
- All power quality events are recorded in the meter's memory.



- Supports both scrolling and manual modes for displaying items, accessible via a push button.

ANTI-TAMPER FEATURES

- Detection of tampering events such as meter cover, terminal, and module cover opening, external magnetic fields, bypassing, etc.
- Tamper alarms displayed on the LCD and LED indicators.
- All tamper events are logged in the meter's memory and reported remotely to the AMI central system



COMMUNICATION

- Full compliance with DLMS/COSEM and IEC 62056-21 standards for optical ports.
- Plug-and-play modules for PLC (G3, BPLC, HPLC), RF, 2G, 3G, and 4G communication.
- RF/2G/3G/4G module with a supercapacitor capable of sending a "last gasp" message to the AMI central system.

TECHNICAL SPECIFICATIONS

EMC	Electrostatic discharges(Contact discharges)	8kV
	Electrostatic discharges(Air discharges)	15kV
	Fast transient burst test	4kV
	Surge immunity test	6kV
	Electromagnetic RF field (80MHz to 2000MHz)	10V/m(with current), 30V/m(without current)
Environment	Temperature Range: -40 °C ~ +70 °C Humidity: Up to 95%	

Connection	3P3W/3P4W
Real-time Clock Accuracy	0.5s/Day

Protective class	II
Degree of protection	IP54
Relay	Auxiliary relay:5A/250VAC