

Three Phase Modular Smart Static Energy Meter


M50S



PRODUCT INFORMATION

This Three-Phase Direct Connect Modular Smart Meter is among the latest generation of Three-Phase Smart Meters in the industry.

M50S supports active & reactive energy measurement, instantaneous measurement and relay disconnection & reconnection management. With an optional plug-and-play PLC/RF/GPRS communication module, the meter can be used in sophisticated AMI system.

Meter Parameters	3 x 240V / 415V	10(100)A	60Hz	IS 16444 (Part1)
	3P 4W	CL. 1.0		IEC 62052-11
Barcode	38000001			IEC 62056-21
Serial Number				IEC 62053-21
Made in Singapore	Year of Manufacturing : 2021			



KEY FEATURES

- Full smart functionality
- Bidirectional measurement of instantaneous, energy and demand parameter
- Data logging for instantaneous parameters, billing parameters and block load profile
- Tamper events detection, recording and reporting
- Event logging available with active energy, voltage and current snap shots
- Power fail alerts (last gasp) and power resume information (first breath) available
- Load connection/disconnection through latching relays for all phases
- Communication options including Optical, RF, PLC & GPRS
- Bidirectional communication with push feature as well as on demand reading
- Remote firmware upgrade
- Net metering feature available
- Prepaid function as per IS 15959 Part-2 (Optional)



M50S

CLASS 1.0

THREE PHASE MODULAR SMART STATIC ENERGY METER



SPECIFICATIONS

MEASUREMENT

- Unidirectional or Bidirectional measurement
- Cumulative Energy
- Record Active & Reactive Energy (optional) in Tariffs

INSTANTANEOUS VALUES

- Power, Voltage, Current
- Power Factor, Frequency

DISPLAY

- Large digit LCD display with backlight
- Scrolling display and push button mode configurable
- Display Readable Without Main Power (RWP)
- Tamper and relay status shown as ICON
- Impulse LED available for kWh and kVAh

TARIFF

- Single / TOU
- Up to 8 registers, configurable profiles and seasons

DAILY PROFILE

- Daily profile for 35 days
- Energy

BILLING PROFILE

- Billing profile for 6 months
- Energy, Average PF, Maximum Demand

LOAD PROFILE

- Up to 1 Megabyte of Non-Volatile memory
- Max 35 days storage (30 minutes)
- Up to 16 Channel Load Profile (LP) Programmable
- Energy, Voltage, Current

RTC

- Clock accuracy (daily deviation): $\leq 0.5\text{sec.}$ (23°C)
- RWP (Read Without Power)
- Replaceable Lithium Battery

ANTI-TAMPER

- 4 sealing positions (Terminal & Top Cover)
- Top cover and terminal cover open detection
- Bypass / reverse current
- Neutral missing / neutral disturbance
- Strong magnetic field detection

EVENTS & ALARMS

- Load and Power grid On/Off events detection
- Under Voltage, Over Voltage, Over Current, and Over Load
- Power failure and Power resume
- 200 event records with date and time
- Alarms for events and tampers
- Alarms indication (LED & Buzzer) (optional)

LOAD CONTROL

- Load disconnection provided for:
 - Over Voltage, Over Current and Over Load
 - Selected Tamper (optional)
 - Command from utility through remote communication

RELAY

- Provided for all phases complying to IS15884 UC1 / UC2 / UC3
- Status of relay connect / disconnect available on display and data downloading
- Connect / disconnect of relay are logged as events and available for downloading

DEMAND MONITORING

- Block / slide mode (optional)
- Demand interval configurable
- Maximum Demand with time stamp
- Historical value (optional)

SECURITY

- Multi-level password for data reading and programming for all available ports
- 2 data access levels (LLS and HLS)
- Encryption of data AES – 128 standard

COMMUNICATION

- Optional port for local communication
- RF / PLC / GPRS Plug and play communication module
- RF module with Wi-Sun Sub GHz transceiver
- PLC with G3-PLC band 150kHz–450kHz
- GPRS support 2G/3G/4G network
- Protocol: DLMS as per IS15959 Part1 & Part2 Standard
- Push and remote firmware update available
- Prepaid function as per IS15959 Part2 Standard (optional)

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THREE PHASE MODULAR SMART STATIC ENERGY METER



SPECIFICATIONS

APPLICATION

- Direct Connection

ACCURACY

- Active: Class 1
- Reactive: Class 2

NOMINAL VOLTAGE

- 3P4W: 3 x 220V, 3 x 230V, 3 x 240V

CURRENT RANGE

- I_b / I_{ref}: 10A
- I_{max}: 60A, 80A, 100A

STARTING CURRENT

- 0.2% I_b

FREQUENCY

- 50Hz / 60Hz

POWER CONSUMPTION

- Voltage Circuit: <2W, <10VA
- Current Circuit: <4VA

TEMPERATURE RANGE

- Operation: -25°C to +55°C
- Storage: -40°C to +70°C
- Limit: -40°C to +70°C

HUMIDITY RANGE

- Up to 95%

PROTECTION DEGREE

- IP 54

EMC

- Electro static discharge
 - Contact discharge: 8kV
 - Air discharge: 15kV
- Fast transient burst: 4kV
- Surge immunity: 4 kV
- Electromagnetic RF Field
 - Frequency range: 80MHz to 2000MHz
 - With voltage: 10V/m
 - Without voltage: 30V/m
- Conducted disturbance
 - Frequency range: 150kHz to 80MHz
 - Voltage level: 10V

INSULATED STRENGTH

- Impulse Voltage: 6kV 1.2/50 μs
- AC Voltage: 4kV 1 min.

STANDARDS

- IEC 62056-21, IEC 62053-21, IEC 62052-11
- IS 16444 Part1, IS15959 Part1 & 2, IS 13779, IS 15884

DATA STORAGE

- Load Profile: Up to 16 Channels: Voltage, Current and Bidirectional Energy
- Billing Data: 6 billing periods

PHYSICAL DIMENSION

- Dimension: 290mm x 170mm x 85mm
- Weight: Approx. 2 kg.
- Mounting Type: Projection type



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