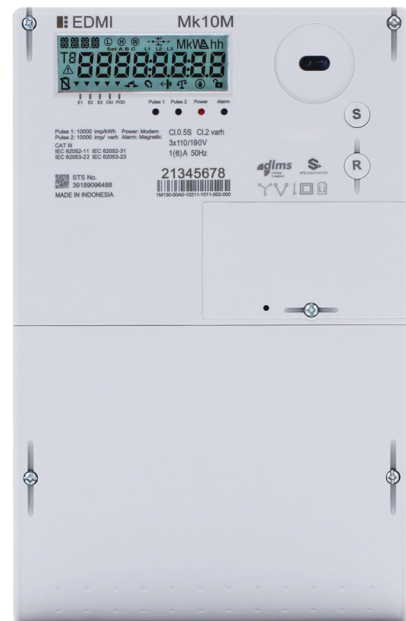## ELECTRICITY

Mk10M

Class 0.5S

Three Phase HVCT Smart Meter

Built around an enhanced metering OS platform, Mk10M has high-grade measurement engine with smart grid solutions, high data storage, data processing and modular communication capabilities.

| Key Features

AMI READY	ANTI TAMPER	DLMS READY	LARGE DATA STORAGE	MODULAR COMMUNICATIONS	NEUTRAL CURRENT MEASUREMENT	UPGRADEABLE

Mk10M

Class 0.5S

Three Phase HVCT Smart Meter

180mm (W)

280mm (H)

95mm (D)

🏋 Weight: 2.2kg

Standards and Compliance

- Class 0.5S
- IEC 62052-11, 62053-22, 62053-23, 62052-31*
- EN 50470-1, 50470-3*
- CLC/TR 50579*
- WELMEC 7.2*
- DLMS Compliance*
- IDIS Compliance*

Measurement

- 3 phase 3 wire
- 3 phase 4 wire
- Neutral current measurement

Voltage

- Nominal voltage: 57.7V - 63.5V
- Operating range: 40V-110V
- Withstand range: 120V
- Impulse voltage: 8kV IEC, 12kV (SP1618 Method)

Current

- CT range:
  - 1/6A, 1/10A, 1/20A, 5/20A
- Phase current measurement sensor: Internal CT
- Neutral current measurement sensor: Shunt

Power Consumption

- Voltage circuit: <10VA/phase, 2W @ Vn
- Current circuit: <4VA/phase @ In

Frequency

- 45Hz - 65Hz

Inputs/Outputs Configuration

- 4 x LED indicators
- 1 control input, 1 control output, up to 2 pulse inputs/outputs

Battery

- Internal lithium battery
- Option for external for backup
- Option for additional Supercap (72 hours)
- Backup time: 5 years without power (23°C)
- Battery shelf life of 15 years at 23°C

Real-time Clock

- Precision clock accuracy: within 15 seconds per month at 23°C (IEC 61038)
- Conform to IEC 62054-21

Data Memory

- 8MB of non-volatile memory

Display

- 8 Characters of seven-segment display (11mm x 6.6mm)
- 4 Characters of starburst display for screen ID (5mm x 3.5mm)
- Display available without main power
- Option for backlight

Measured Values

- 3 elements 4 quadrants
- Import/Export/Absolute: Wh, varh and VAh
- Per quadrant Wh, varh and VAh
- Power: W, var, VA, Vrms, Irms
- Power factor, frequency, phase angle

Power Quality Indication

- Total Harmonic Distortion (THD)
- Instantaneous RMS voltages, currents, frequency
- Per phase instantaneous powers A+ A- R+ R-
- Per phase average powers A+ A- R+ R- (T=10mn)
- Aggregate instantaneous powers A+ A- R+ R- S+ S-
- Per phase voltage quality
  - Sag/Swell and missing voltage detection
  - Programmable thresholds and filtering time
- The meter recorded voltage quality profile up to 50 set sag/swell event
- The meter recorded THD Current & Voltage and calculated TDD Current per phase and Total

LCD Configuration

- Up to 100 user-defined screens of any meter parameter
- Up to 3 display sets
- Definable enunciators

Load Survey/Profile

- Up to 90 channels and 10 independent surveys
- Intervals programmable from 1 to 1440 minutes
- Energy instantaneous readings
- Ability to store average/minimum/ maximum values for interval duration

Time of Use

- 8 rates plus unified rate
- Daily, weekly, monthly, yearly and special days
- Maximum of 50 special days and 6 seasons
- Block or rolling maximum demand (kW)
- Time of maximum demand

Calendar

- Supports Daylight Saving time
- Supports Gregorian or Persian calendars
- RTC and frequency synchronisation

Tamper Detection and Alarms

- Provision for sealing with conventional wire or plastic seals
- Reverse current detection
- Option for magnetic tamper detection
- Option for lid/terminal cover detection
- Line and neutral current unbalance detection
- Advanced tamper detection and logging
- Pre-programmed alarms for meter self-check
- Alarms trigger LEDs, enunciators, communications event
- Alarms are stored in event logs

Security

- AES-GCM-128

Operation Mode

- Postpaid/Prepaid

Communications

- Optical port: FLAG (IEC 62056-21)

- Option for built-in communication module:
  - RF: 300MHz to 950MHz (configurable)
  - Sub-GHz 868MHz and ISM 2.4GHz*
- Supports GSM/GPRS/EDGE
  - 850/900/1800/1900MHz
- Supports local and remote upgrade and configurations

Protocol

- DLMS/COSEM

Software

- EDMI MultiDrive, MIRA Config and MIRA HES softwares available for large scale AMI and AMR solutions (Windows® compatible)

Construction

- Meter Base:
  - Meter base is made of UV-resistance, high impact-resistance and self-extinguishing polycarbonate. Color is Cool grey.
- Meter Cover:
  - Meter cover is made of UV-resistance, high impact-resistance and self-extinguishing polycarbonate. Security sealing is provided and the gasket of the meter cover is used for protecting the meters against moisture, dust and insects; the gasket is weather and made from aging resistant material (EPDM black).

Environmental

- Specified operating range: -25°C to +70°C
- Operating range limit: -40°C to +70°C
- Storage range limit: -40°C to +85°C
- Relative humidity: Up to 85% mean, 95% non-condensing for 30 days
- Ingress protection: IP54

*For future

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