

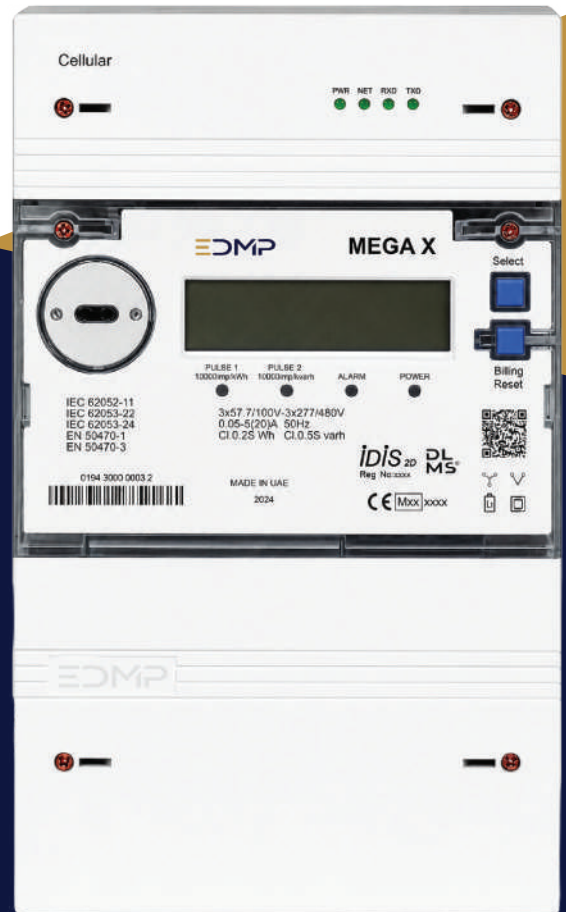
MEGA X

EMPOWER YOUR GRID WITH
PERFECT CLARITY



Powering the Future
with Precision and Control

Introducing the Mega X PQ, an advanced smart meter specifically designed for power plants, HV and MV Substations, transmission grid, and large industrial applications, with a primary focus on power quality monitoring. It exceeds IEC Class 0.2S accuracy and MID Class C standards, delivering unparalleled precision in power quality measurements. The Mega X PQ complies with IEC 61000-4-30 (Edition 3) for advanced power quality analysis, providing in-depth insights into voltage dips, harmonics, transients, and flicker. With 12kV impulse protection and meeting IEC 62052-31 safety standards, it ensures reliable and safe operation. This meter is perfect for utilities and large industrial customers seeking comprehensive power quality monitoring, offering real-time data and robust performance to optimize grid stability and operational efficiency. The Mega X PQ sets a new standard for power quality monitoring in smart metering systems, enabling better decision-making and ensuring grid reliability.



ELECTRICITY

HIGH ACCURACY SMART GRID ENERGY METER



■ Main Functionalities

Measurement Capabilities

- Measures in 3 elements and 4 quadrants for accurate data across various parameters.
- Tracks absolute and differential energy, including Wh, VARh and VAh for comprehensive analysis.
- Provides power metrics per phase and total (W, var, VA) and voltage and current RMS values.
- Monitors power factor, frequency, and phase angles, with voltage and current Total Harmonic Distortion (THD) and harmonic analysis up to the 50th order.
- Neutral Current Measurement

Real-Time Clock (RTC)

- Maintains clock accuracy with a daily deviation of $\leq 0.5s/day$.
- Features a Gregorian calendar with automatic adjustments for leap years and Daylight-Saving Time.

Firmware Upgrading

- Allows for firmware upgrades via both local and WAN interfaces.
- Scheduled image updates.

Tariff Management

- Supports up to 8 tariffs and 200 programmable special days, including daily, weekly, monthly, and yearly scenarios.
- Manages up to 32 separate import and export registers and up to 12 seasons.
- Records up to 100 previous periods plus period totals for detailed financial tracking.

Load Control

- Includes a flexible backup power solution for the RTC, featuring both a replaceable battery and a optional super capacitor.

■ Additional Functionalities

Optical Port

- Complies with IEC62056-21 standard with DLMS (IEC62056-21 mode E) protocol support.

I/O Ports (Optional)

- Up to 6 IO ports
- Pulse outputs
- Pulse inputs
- Meter enclosure detection
- External Relay

Battery Backup

- Supports remote control commands, over-current control, and power limit features for enhanced load management.

Profiles and Storage

- Offers at least 50 channels with support for 3 independent surveys and 24-hour daily surveys.
- Programmable intervals ranging from 1 to 60 minutes, with storage for 8 channels (15 min intervals) for up to one year.

Security

- Supports LLS with 3-level passwords for local and remote communication, and HLS with authentication and encryption for local and remote communication.
- Compatible with suite 0 and suite 1 security standards.

Event Record

- Maintains comprehensive logs including fraud detection (meter cover, terminal cover, current reverse, magnetic detection), failure detection (memory error, relay error, battery low voltage), power quality events (under/over voltage, power up/down), security events (parameter changes, clock adjustments), and standard events.

Total Harmonics Distortion

- Up to 120 channels
- LP1, LP2, PQ independent surveys
- Up to 7 independent security levels
- Up to 6 individual users
- Support MODBUS for SCADA

Auxiliary Contact

- Equipped with a relay for external load control (240V 5A).

Auxiliary Power

- Equipped with an auxiliary power 100 – 240VAC, 40 – 340 DC

WAN Communication

- Plug-and-play modules support various communication technologies including Cellular (GPRS, 4G) and Ethernet.
- Protocol support includes DLMS/COSEM.

Additional Communication Ports

- 2x RJ45 RS485 with Power Supply
- RS232 with Modem Power Supply (4W, 12VDC)

■ Technical Specification

Standards

- IEC 61000-42, 4-30 Class S
- IEC 62052-11, 31
- IEC 62053-22, 24, 61
- IEC 62056-21, 42, 46, 47, 4-7, 51, 5-3, 61, 6-2
- IEC 62059-32-1, SP-1618
- IEC 61850
- IEC/CISPR22 Class B
- EN 61268, EN 13757

Rated Nominal Voltage

- 3x 57.7/100V~22V/240V~277/480V
- Operating voltage range
- 0.8Un to 1.2Un

Current

- Reference current: 1(1.2)A, 1(10)A, 1(20)A, 5(6)A, 5(20)A, 5(20)A
- Starting current: 0.1% Ib

Frequency

- Rated Frequency: 50Hz or 60Hz
- Rated frequency (fn): $\pm 5\%$

Pulse Constant (Configurable)

- Default: 10000 imp/kWh, 10000 imp/kvarh

Temperature

- Normal Operation range: -25°C to $+60^{\circ}\text{C}$
- Limit operation range: -40°C to $+70^{\circ}\text{C}$
- Limit range for storage and transport: -40°C to $+85^{\circ}\text{C}$

Humidity

- Up to 95% non-condensing

Power Consumption

- Power consumption in voltage circuit (active): $\leq 2\text{ W}$
- Power consumption in voltage circuit (apparent) : $\leq 10\text{ VA}$
- Power consumption in current circuit: $\leq 0.5\text{ VA}$

Insulation Strength

- AC voltage test: 4kV
- Surge Withstand: 6kV
- Protection class: Class II

Electromagnetic Compatibility

- Electrostatic discharges: 15kV
- Fast transient burst: 4kV
- Immunity to Impulse voltage: 6kV (IEC 62052-11), 12kV (SP1618 Method)

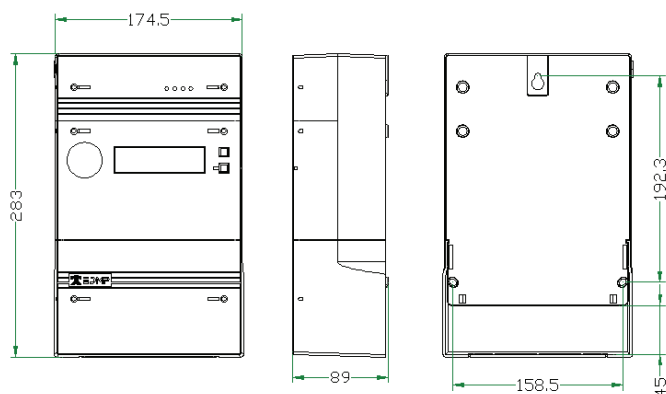
Protection degree

- IP54 complies with IEC 60529
- Insulation grade II

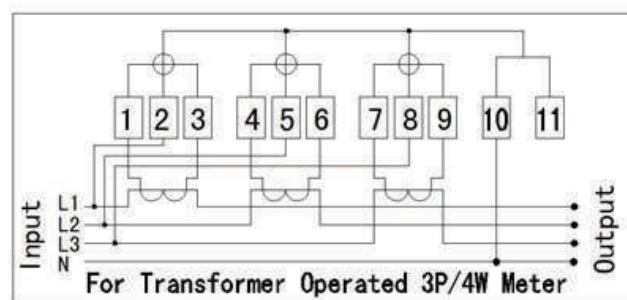
Lifetime

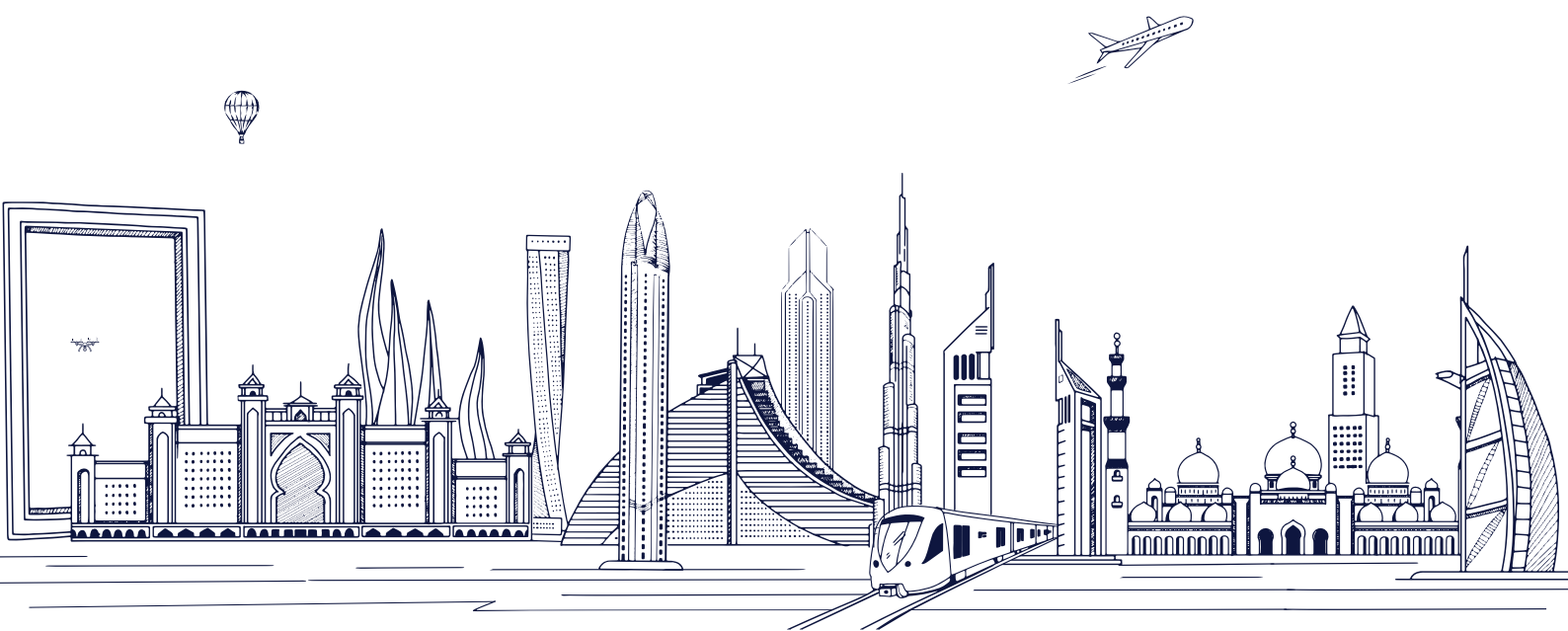
- ≥ 15 years

■ Diagram



Wiring Diagram





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