

MEGA X

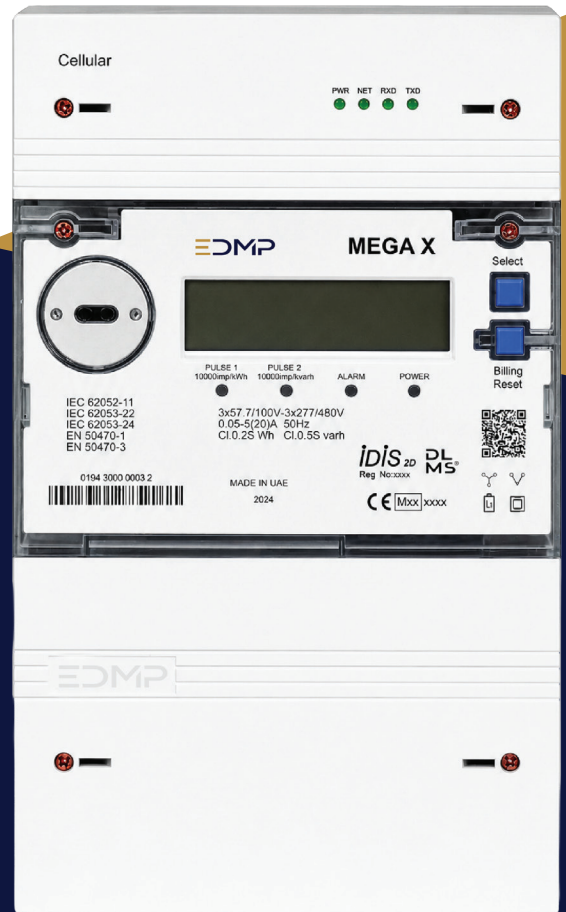
PRECISION YOU CAN TRUST
FOR GRID MASTERY



Powering the Future
with Precision and Control

The **Mega X CT/VT** is a high-accuracy meter (**0.2s**) specifically designed for substation applications, ranging from High Voltage (HV) to Medium Voltage (MV), ensuring **precise** revenue metering and optimized load management. With its communication modules, following **IDIS Package 3** protocol. It seamlessly integrates with **SCADA** systems and Head-End Systems (HES), enabling real-time monitoring and enhancing operational efficiency. The meter provides accurate data for both power quality and system performance, making it ideal for utilities to maximize revenue collection and improve energy distribution.

Equipped with extensive data storage, a clear LCD display, and remote firmware upgrades, the **Mega X CT/VT** simplifies maintenance and long-term adaptability. Its anti-tamper features and robust, **durable** design ensure secure and reliable performance, making it the perfect solution for modern substations requiring accurate, scalable, and efficient metering for both HV and MV grids.



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 IEC21-62056 standard with DLMS (IEC21-62056 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 a relay for external load control (240V 5A).

WAN Communication

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

Additional Communication Ports

- Includes an RJ45 port (can be used as SCADA)
- Phoenix terminal, 2 set connection

■ Technical Specification

Standards

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

Rated Nominal Voltage

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

Current

- Reference current: (10)1A or (20)1A
- 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 11-62052), 12kV (SP1618 Method)

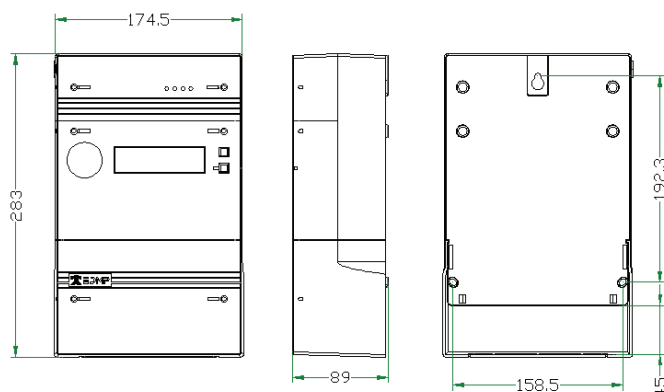
Protection degree

- IP54 complies with IEC 60529
- Insulation grade II

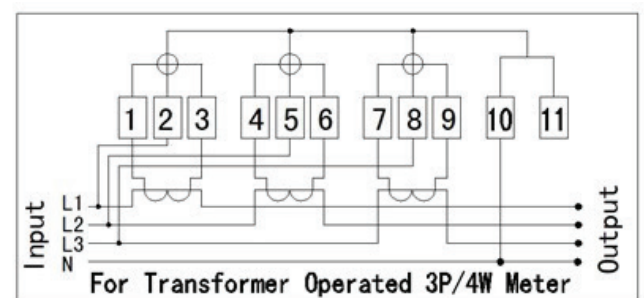
Lifetime

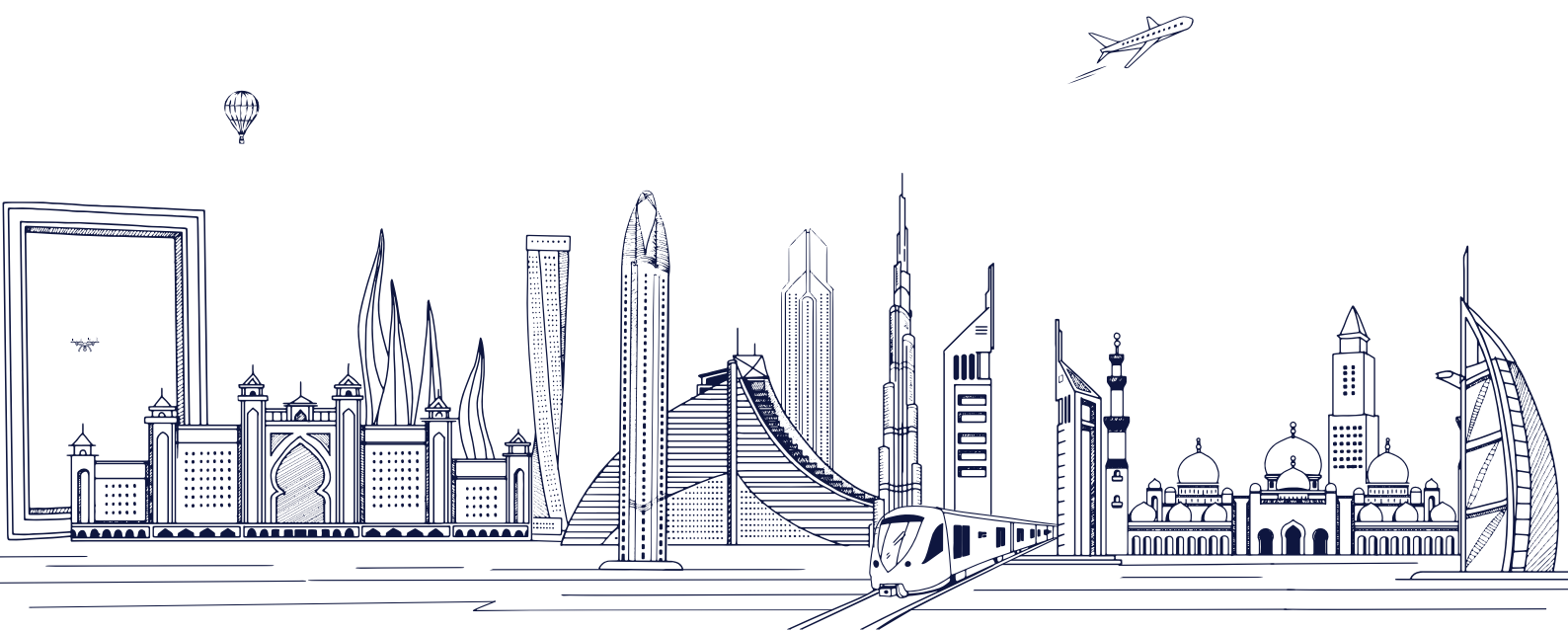
- ≥ 15 years

■ Diagram



Wiring Diagram





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