MEGA X

Precision You Can Trust for Grid Mastery

ELECTRICITY

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 plug-and-play communication modules, 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.

DLMS PROTOCOL

HIGH ACCURACY

MID
Measuring Instrument Directive
2014/32/UE

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 ≤ 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.

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

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

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.
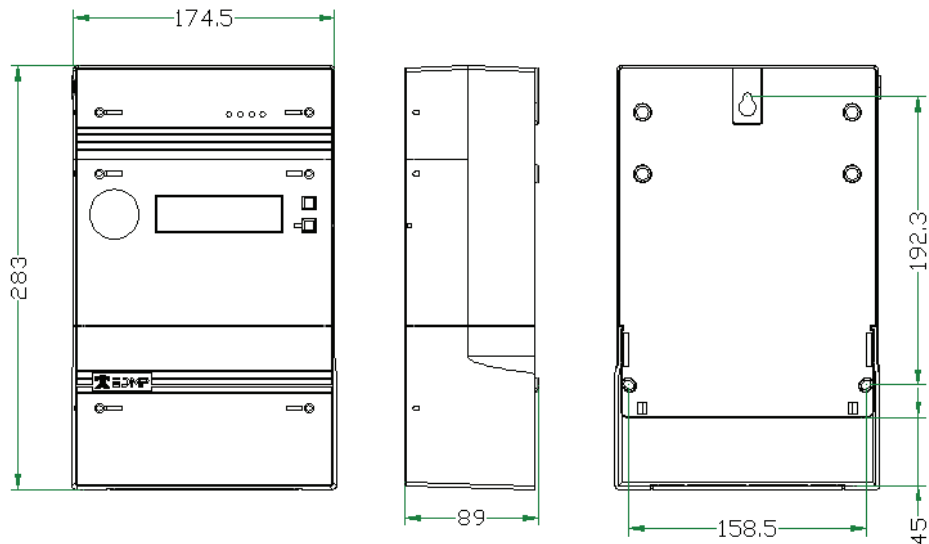
Additional Communication Ports:
- Includes an RJ45 port (can be used as SCADA)
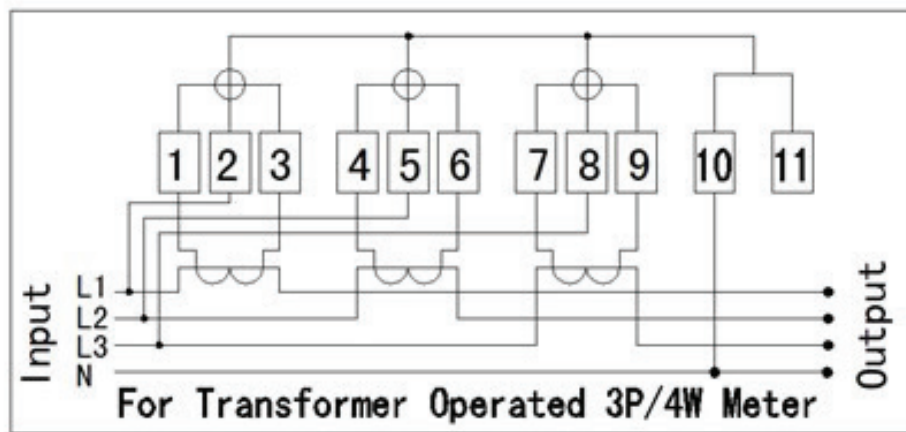- Phoenix terminal, 2 set connection

MEGA X

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Technical Specification

Standards	• IEC 61000-42, 4-30 Class S • IEC 62052-11, 21, 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 **Operating voltage range**	• 3x 57.7/100V~22V/240V~277/480V • 0.8Un to 1.2Un
Current **Reference current** **Starting current**	• 1(10)A or 1(20)A • 0.1% Ib
Accuracy	• Cl.0.2S Active kWh • Cl.0.5S Reactive kvarh
Rated Frequency **Rated frequency (fn)**	• 50Hz or 60Hz • ±5%
Pulse Constant **(Configurable)**	• Default: 10000 imp/kWh, 10000 imp/kvarh
Temperature **Normal Operation range** **Limit operation range** **Limit range for storage** **and transport**	• -25°Cto +60°C • -40°Cto +70°C • -40°Cto +85°C
Humidity	• Up to 95% non-condensing
Power Consumption **Power consumption in voltage circuit (active)** **Power consumption in voltage circuit (apparent)** **Power consumption in current circuit**	• ≤2 W • ≤10 VA • ≤0.5 VA
Insulation Strength **AC voltage test** **Surge Withstand** **Protection class**	• 4kV • 6kV • Class II
Electromagnetic Compatibility **Electrostatic discharges** **Fast transient burst** **Immunity to Impulse voltage**	• 15kV • 4kV • 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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 1   2   3    4   5   6    7   8   9    10   11
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For Transformer Operated 3P/4W Meter

Input: L1 L2 L3 N

Output