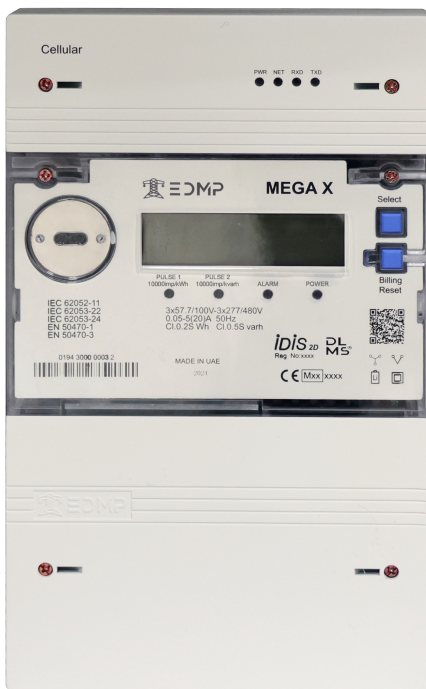


# MEGA X

## Precision You Can Trust for Grid Mastery



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.



HIGH  
ACCURACY

**idIS**



DLMS  
READY



Measuring Instrument Directive  
2011/65/EU



# MEGA X

## Technical Specification

Standards	<ul style="list-style-type: none"><li>IEC 61000-42, 4-30 Class S</li><li>IEC 62052-11, 21, 31</li><li>IEC 62053-22, 24, 61</li><li>IEC 62056-21, 42, 46, 47, 4-7, 51, 5-3, 61, 6-2</li><li>IEC 62059-32-1, SP-1618</li><li>IEC 61850</li><li>IEC/CISPR22 Class B</li><li>EN 61268, EN 13757</li></ul>
Rated Nominal Voltage Operating voltage range	<ul style="list-style-type: none"><li>3x 57.7/100V~22V/240V~277/480V</li><li>0.8Un to 1.2Un</li></ul>
Current Reference current Starting current	<ul style="list-style-type: none"><li>1(10)A or 1(20)A</li><li>0.1% Ib</li></ul>
Accuracy	<ul style="list-style-type: none"><li>Cl.0.2S Active kWh</li><li>Cl.0.5S Reactive kvarh</li></ul>
Rated Frequency Rated frequency (fn)	<ul style="list-style-type: none"><li>50Hz or 60Hz</li><li>±5%</li></ul>
Pulse Constant (Configurable)	<ul style="list-style-type: none"><li>Default: 10000 imp/kWh, 10000 imp/kvarh</li></ul>
Temperature Normal Operation range Limit operation range Limit range for storage and transport	<ul style="list-style-type: none"><li>-25°C to +60°C</li><li>-40°C to +70°C</li><li>-40°C to +85°C</li></ul>
Humidity	<ul style="list-style-type: none"><li>Up to 95% non-condensing</li></ul>
Power Consumption Power consumption in voltage circuit (active) Power consumption in voltage circuit (apparent) Power consumption in current circuit	<ul style="list-style-type: none"><li>≤2 W</li><li>≤10 VA</li><li>≤0.5 VA</li></ul>
Insulation Strength AC voltage test Surge Withstand Protection class	<ul style="list-style-type: none"><li>4kV</li><li>6kV</li><li>Class II</li></ul>
Electromagnetic Compatibility Electrostatic discharges Fast transient burst Immunity to Impulse voltage	<ul style="list-style-type: none"><li>15kV</li><li>4kV</li><li>6kV (IEC 62052-11), 12kV (SP1618 Method)</li></ul>
Protection degree	<ul style="list-style-type: none"><li>IP54 complies with IEC 60529</li><li>Insulation grade II</li></ul>
Lifetime	<ul style="list-style-type: none"><li>≥ 15 years</li></ul>

# MEGA X

## 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.

### 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:

- Operates on 100 to 240 VAC / 140 to 340 VDC

### 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.

### Battery Backup:

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

### Load Control:

- 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.

### 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

### 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.

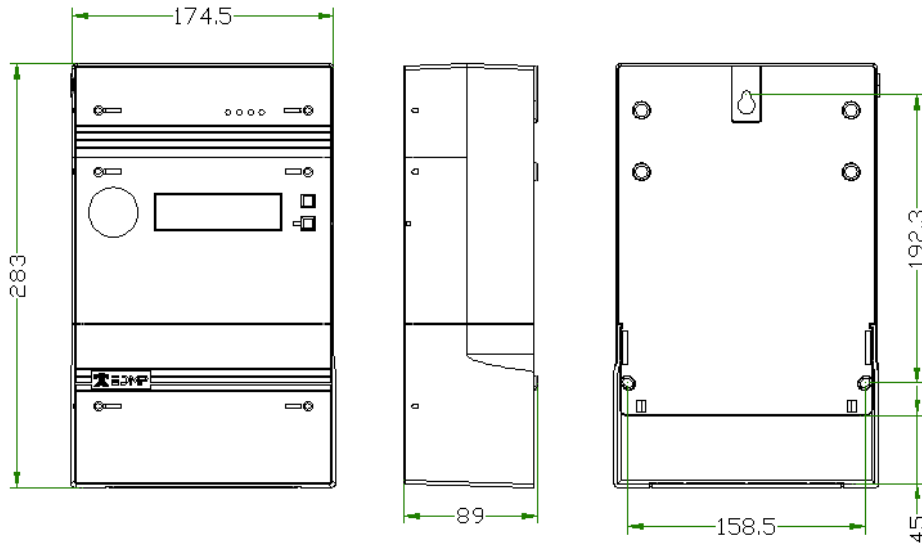
### Total Harmonics Distortion:

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

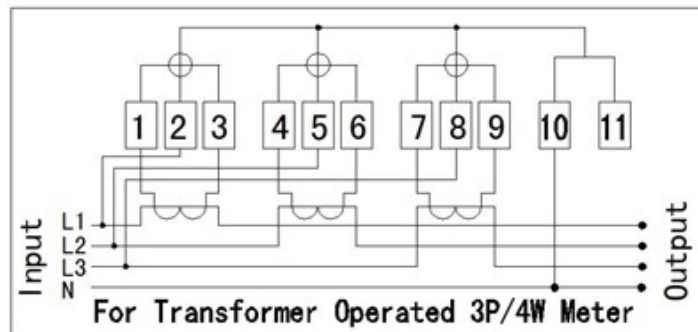


# MEGA X

## Diagram:



## Wiring Diagram:



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