

# MAGNO 33+ CT/CTVT

For Commercial and Industrial Use

Dual Source Three Phase  
CT/CTVT Smart Energy Meter



**Powering the Future with  
Precision and Control**

The **Magno 33+ CT/CTVT** is a **dual source** three-phase smart meter designed for **commercial** and **industrial** energy management, ideal for Advanced Metering Infrastructure (AMI) initiatives. It features **dual-source** functionality, enabling consumption measurement from **multiple sources** with flexible payment modes, including dual-wallet prepayment. Supporting both prepaid and postpaid billing options, compliant against **STS/CTS Standard, DLMS/COSEM protocol**. It ensures adaptability for diverse needs. With enhanced energy measurement, power quality monitoring, load management, and automated reporting, it delivers precise, reliable data for optimized energy use and operational efficiency.



**ELECTRICITY**



STS  
ASSOCIATION

**DL  
MS**<sup>®</sup>



DUAL  
WALLET



# Main Functionalities

## Standards & Compliance

- IEC 62052-11, 21, 31
- IEC 62053-23, 24
- IEC 62059-31-1
- IEC 62059-32-1
- EN62053-23
- EN50470-3

## Measurement

- 3 elements 4 quadrants
- Import/Export Absolute/Q1/Q2/Q3/Q4: Wh, varh and Vah
- Power (per phase / total): W, var, VA
- Vrms, Irms
- Power factor, frequency
- V-V and V-I phase angles
- Voltage THD, Current THD
- Harmonics up to 50th

## Multi TOU Tariff

- Up to 8 tariff
- Up to 200 programmable special days Daily, Weekly, Monthly, Yearly & Special
- Up to 32 separate import and export registers
- Up to 12 seasons
- Up to 100 Previous period plus Period totals

## Prepayment

- Configurable prepayment and post-payment mode
- Three levels for remaining credit alarm
- Emergency credit, friendly time and friendly days support
- Dual wallet

## Auxiliary Power

- 100 to 240 VAC / 140 to 340 VDC

## Load Profile

- At least 50 channels
- Support 3 independent surveys
- 24hrs daily survey
- Intervals programmable from 1 to 60 minutes
- Storage 8 channels (15 min) for a year

## Communication Ports

- WAN: Plug and play module to support various communication technology
- WAN: G3-PLC, WiSUN, Cellular (GPRS, 3G, 4G/LTE, NB-IoT), or Ethernet
- RF or PLC module – For communication with CIU (Customer Interface Unit)
- Optical: Comply with IEC 62056-21 standard, DLMS (IEC 62056-21 mode E)
- Additional: 2x RS485 (with Power Supply), RS232 Port, VTC interface

## Input/Output Ports (Optional)

- Pulse Output
- Dual Source Signal (Tariff change)
- Meter enclosure opening/tamper detection (Active input)
- External Relay output
- Pulse Input

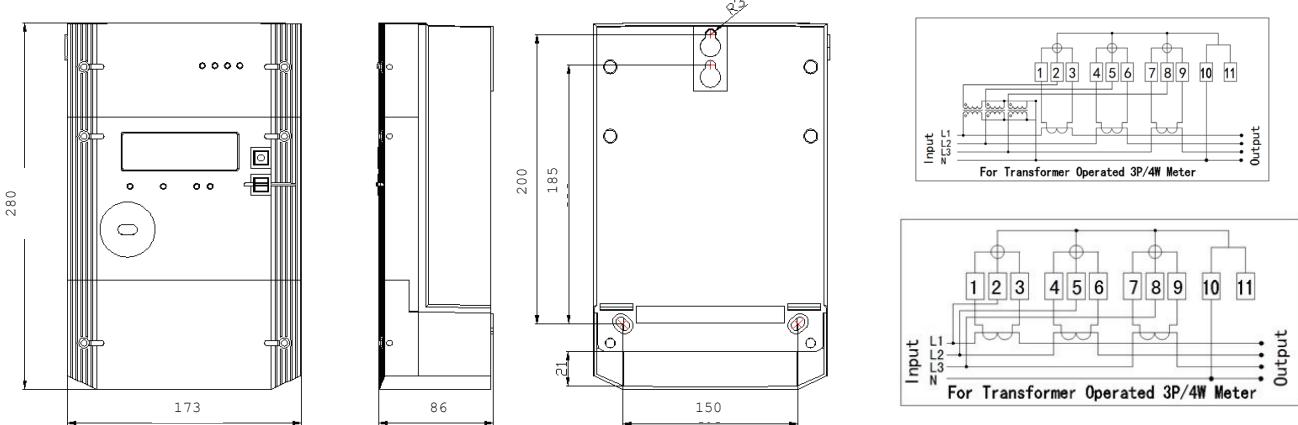
## Additional Functionalities:

<b>Event</b>	<ul style="list-style-type: none"><li>• Fraud detection log (Meter cover &amp; terminal cover open detect with and without power, module cover open detect, current reverse, magnetic detect, neutral current mismatch etc.)</li><li>• Failure detection log (Memory error, relay error, battery low voltage, clock invalid etc.)</li><li>• Power quality event log (Under voltage / Over voltage(Sag/Swell), Over current/current imbalance, Power up/down, etc.)</li><li>• Security event log (Parameters change, clock adjust, etc.)</li><li>• Standard event log (Power up/on, time synchronization, etc.)</li></ul>
<b>Anti Tamper</b>	<ul style="list-style-type: none"><li>• More than 4 sealing positions</li><li>• Terminal cover, meter cover and module cover sealing</li><li>• Self-protection under Overload control, Abnormal voltage control, Arrearage control, Tamper control, Malfunction control, Fire disaster control etc.</li></ul>
<b>Alarm</b>	<ul style="list-style-type: none"><li>• Alarms with LED/Buzzer and LCD on CIU</li><li>• Alarm can be configurable</li></ul>
<b>Tariff Expense (Optional)</b>	<ul style="list-style-type: none"><li>• Up to 10 steps tariff</li><li>• Up to 5 steps Monthly service charge</li><li>• Up to 5 kinds subsidy</li><li>• Up to 3 kinds fixed charge</li><li>• Up to 5 kinds levies charge</li><li>• Up to 3 kinds VAT charge</li></ul>
<b>Communication Protocol</b>	<ul style="list-style-type: none"><li>• International open protocol</li><li>• IEC62056-21 E mode DLMS</li><li>• HDLC DLMS and TCPIP DLMS, Support suite 0 and suite 1</li><li>• STS/CTS Token and SMS</li><li>• LLS support 3 level passwords for local and remote communication</li><li>• HLS support auth and encryption for local and remote communication</li></ul>
<b>Billing Record</b>	<ul style="list-style-type: none"><li>• Up to 13-month billing data</li><li>• Calculate monthly net consumption of energy</li><li>• Up to 31 days daily data</li><li>• Calculate daily net consumption of energy</li></ul>
<b>Firmware Upgrade</b>	<ul style="list-style-type: none"><li>• The firmware can be upgraded via local interface and WAN interface.</li><li>• Schedule activity image support</li></ul>
<b>CIU unit</b>	<ul style="list-style-type: none"><li>• The meter can communicate with the CIU via RF or PLC</li><li>• Parameters transfer</li><li>• Credit token, Key change token, clear balance token, clear tamper token, set power limit token, test token etc.</li><li>• Fully complies with STS standard</li></ul>

# Technical Specification:

<b>Rated Nominal Voltage</b>	• 3x 57.7/100V~277/480V
<b>Operating Voltage Range</b>	• 80%Un~120%Un
<b>Rated Current &amp; Starting Current</b>	• 5(100)A, 5(80)A and 0.4% Ib
<b>Rated Frequency</b>	• 50Hz or 60Hz ±5%
<b>Pulse Constant (Configurable)</b>	• 1000imp/kWh • 1000imp/kvarh (Default)
<b>Accuracy Class</b>	• Cl.0.5s for Active kWh • Cl.0.5s for Reactive kvarh
<b>Power Consumption</b>	• Voltage circuit ≤2 W or 10VA, Current circuit ≤1 VA
<b>Battery and Life</b>	• Replaceable Lithium battery, life more than 15 years • Supercap (Optional) – 5 yr lifetime with power off
<b>Normal Operation Range</b>	• -25°C to +60°C, Humidity is up to 95%
<b>Limit Operation Range</b>	• -40°C to +70°C, Humidity is up to 95%
<b>EMC Performance</b>	• Impulse voltage > 6KV, AC voltage > 4KV, Short circuit • current > 3KA, Electrostatic Discharge contact: 8KV & air: 15KV
<b>Protection Class</b>	• IP54 comply with IEC60529 • Insulation grade II
<b>Housing Material</b>	• Polycarbonate with non-conductive, high impact, • Smooth finish, durable, non-flammable, UV stabilized, • UV resistant and high resistance to weathering

## Diagram



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