MAGNO 33 CT/CTVT

For Commercial and Industrial Use

Three Phase CT/CTVT Smart Energy Meter

The **Magno 33 CT/CTVT** is a highly versatile three-phase smart meter designed specifically for commercial and industrial energy management, offering a flexible and scalable solution for your Advanced Metering Infrastructure (AMI) initiatives. This meter is engineered for large-scale applications where high accuracy, reliability, and real-time data are critical to efficient energy management. The **Magno 33 CT/CTVT** provides robust functionality, including enhanced energy measurement, power quality monitoring, load management, and automated reporting, ensuring that businesses can optimize energy consumption and improve operational efficiency. Furthermore, the **Magno 33 CT/CTVT** offers the flexibility to work seamlessly in both prepaid and postpaid billing systems, providing utilities with adaptable solutions to meet diverse customer needs.

Built with a focus on **exceptional accuracy**, the **Magno 33 CT/CTVT** integrates a high-grade measurement engine that delivers precise and reliable data, making it an invaluable tool for utilities.

DLMS Compliant	G3PLC Compliant	STS Compliant	Interchangeable Communication

MAGNO 33 CT/CTVT

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, LoRaWAN, 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 Resource Signal (Tariff change) • Meter enclosure opening/tamper detection (Active input) • External Relay output • Pulse Input	

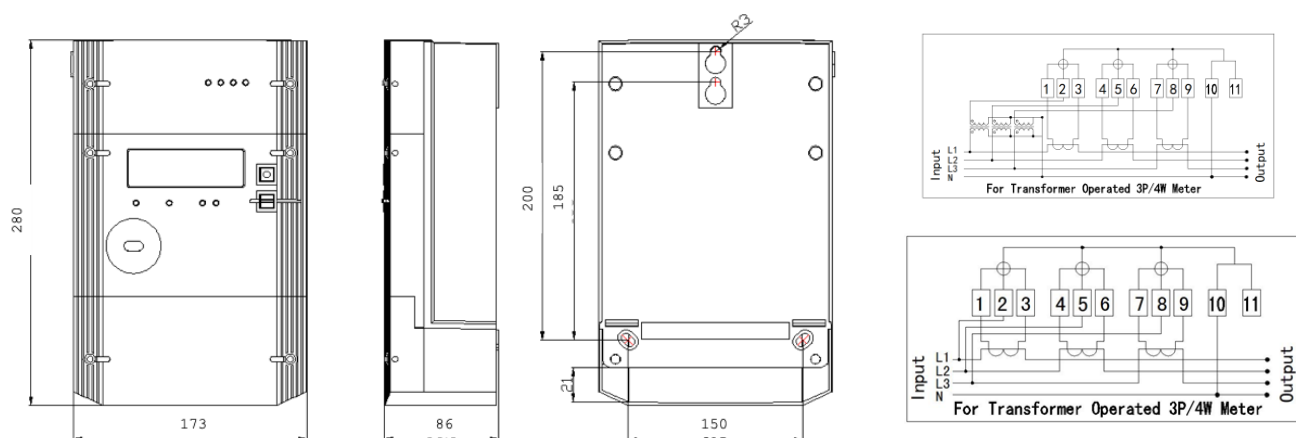# MAGNO 33 CT/CTVT

Additional Functionalities:

Event	▪ Fraud detection log (Meter cover & terminal cover open detect with and without power, module cover open detect, current reverse, magnetic detect, neutral current mismatch etc.) ▪ Failure detection log (Memory error, relay error, battery low voltage, clock invalid etc.) ▪ Power quality event log (Under voltage / Over voltage(Sag/Swell), Over current/current imbalance, Power up/down, etc.) ▪ Security event log (Parameters change, clock adjust, etc.) ▪ Standard event log (Power up/on, time synchronization, etc.)
Anti Tamper	▪ More than 4 sealing positions ▪ Terminal cover, meter cover and module cover sealing ▪ Self-protection under Overload control, Abnormal voltage control, Arrearage control, Tamper control, Malfunction control, Fire disaster control etc.
Alarm	▪ Alarms with LED/Buzzer and LCD on CIU ▪ Alarm can be configurable
Tariff Expense (Optional)	▪ Up to 10 steps tariff ▪ Up to 5 steps Monthly service charge ▪ Up to 5 kinds subsidy ▪ Up to 3 kinds fixed charge ▪ Up to 5 kinds levies charge ▪ Up to 3 kinds VAT charge
Communication Protocol	▪ International open protocol ▪ IEC62056-21 E mode DLMS ▪ HDLC DLMS and TCPIP DLMS, Support suite 0 and suite 1 ▪ STS/CTS Token and SMS ▪ LLS support 3 level passwords for local and remote communication ▪ HLS support auth and encryption for local and remote communication
Billing Record	▪ Up to 13-month billing data ▪ Calculate monthly net consumption of energy ▪ Up to 31 days daily data ▪ Calculate daily net consumption of energy
Firmware Upgrade	▪ The firmware can be upgraded via local interface and WAN interface. ▪ Schedule activity image support
CIU unit	▪ The meter can communicate with the CIU via RF or PLC ▪ Parameters transfer ▪ Credit token, Key change token, clear balance token, clear tamper token, set power limit token, test token etc. ▪ Fully complies with STS standard

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Technical Specification:

Rated Nominal Voltage	3x 57.7/100V~277/480V
Operating Voltage Range	80%Un~120%Un
Rated Current & Starting Current	5(20)A and 0.1% Ib
Rated Frequency	50Hz or 60Hz ±5%
Pulse Constant (Configurable)	1000imp/kWh 1000imp/kvarh (Default)
Accuracy Class	Cl.0.5s for Active kWh Cl.0.5s for Reactive kvarh
Power Consumption	Voltage circuit ≤2 W or 10VA, Current circuit ≤1 VA
Battery and Life	Replaceable Lithium battery, life more than 15 years Supercap (Optional) – 5 yr lifetime with power off
Normal Operation Range Limit Operation Range	-25℃ to +60℃, Humidity is up to 95% -40℃ to +70℃ Humidity is up to 95%
EMC Performance	Impulse voltage > 6KV, AC voltage > 4KV, Short circuit current > 3KA, Electrostatic Discharge contact: 8KV & air: 15KV
Protection Class	IP54 comply with IEC60529 Insulation grade II
Housing Material	Polycarbonate with non-conductive, high impact, smooth finish, durable, non-flammable, UV stabilized, UV resistant and high resistance to weathering

Diagram: