

# MAGNO 22+

Dual Source Single Phase BS  
Smart Energy Meter



Powering the Future with  
Precision and Control

The **Magno 22+** is a single-phase **dual-source** meter designed for residential use, featuring integrated 100A **UC3-compliant** relays for remote disconnection and reconnection of electrical services. It enables measurement of power consumption from **multiple sources** with flexible payment modes, including **dual-wallet** functionality for prepayment systems. Compliant with **STS/CTS standards** and using the **DLMS/COSEM** and **IDIS** protocol, the **Magno 22+** ensures seamless integration and reliable operation in residential and commercial environments.



## ELECTRICITY



STS  
ASSOCIATION

DL  
MS<sup>®</sup>

*id*is

IDIS  
COMPLIANT



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

- 4 quadrants
- Import/Export Absolute/Q1/Q2/Q3/Q4: Wh, varh and VAh
- Vrms, Irms
- Power factor, frequency
- V-I Phase angle
- Absolute value  $|Ai|=|+A|+|-A|$   $|Ae|=|-A|$
- Neutral Current Measurement

## Multi TOU Tariff

- Up to 8 tariff
- Up to 200 programmable special days Daily, Weekly, Monthly, Yearly & Special
- Up to 8 separate import and export registers
- Up to 12 seasons
- Up to 24 periods

## Prepayment

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

## Load control

- Remote control command support
- Over current control support
- Power limit support
- 1 poles internal relay (for 100A meter)
- 2 poles internal relay (for 80A meter)
- Disconnect/Reconnect by locally or remotely

## Load Profile

- Up to 60 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 IEC62056-21 standard, DLMS(IEC62056-21 mode E)
- Additional: RS485 (2 wire), VTC interface

## Input/Output Ports (Optional)

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

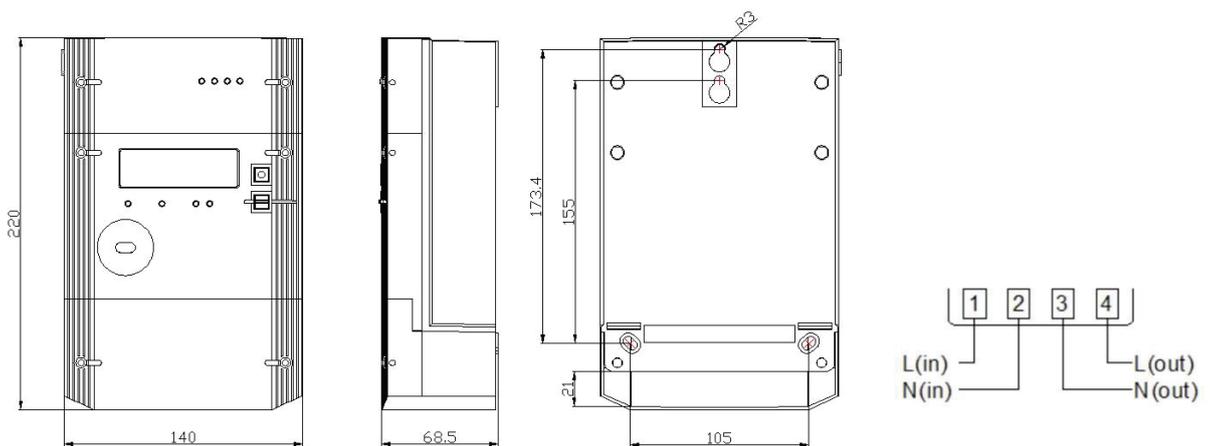
## Additional Functionalities:

<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 TCP/IP 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><li>● IDIS Compliant</li></ul>
<b>Billing Record</b>	<ul style="list-style-type: none"><li>● Up to 12-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>	<ul style="list-style-type: none"><li>• 220V~240V, 110V~120V</li></ul>
<b>Operating Voltage Range</b>	<ul style="list-style-type: none"><li>• 50%Un~120% Un (When Un = 220V-240V)</li><li>• 80%Un~120% Un (When Un = 110V-120V)</li></ul>
<b>Rated Current &amp; Starting Current</b>	<ul style="list-style-type: none"><li>• 5(100)A, 5(80)A and 0.4% Ib</li></ul>
<b>Rated Frequency</b>	<ul style="list-style-type: none"><li>• 50Hz or 60Hz ±5%</li></ul>
<b>Pulse Constant (Configurable)</b>	<ul style="list-style-type: none"><li>• 1000imp/kWh</li><li>• 1000imp/kvarh (Default)</li></ul>
<b>Accuracy Class</b>	<ul style="list-style-type: none"><li>• Cl.1 for Active</li><li>• Cl.2 for Reactive</li></ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"><li>• Voltage circuit ≤2 W or 5VA, Current circuit ≤0.5 VA</li></ul>
<b>Battery and Life</b>	<ul style="list-style-type: none"><li>• Replaceable Lithium battery, life more than 15 years</li><li>• Supercap (Optional) – 5 yr lifetime with power off</li></ul>
<b>Normal Operation Range</b>	<ul style="list-style-type: none"><li>• -25 to +70 , Humidity is up to 95%</li></ul>
<b>Limit Operation Range</b>	<ul style="list-style-type: none"><li>• -40 to +80 , Humidity is up to 95%</li></ul>
<b>EMC Performance</b>	<ul style="list-style-type: none"><li>• Impulse voltage &gt; 10kV, AC voltage &gt; 4kV, Short circuit current &gt; 3kA, Electrostatic Discharge contact: 8kV &amp; air: 15kV</li></ul>
<b>Protection Class</b>	<ul style="list-style-type: none"><li>• IP54 compliant with IEC60529</li><li>• Insulation grade II</li></ul>
<b>Housing Material</b>	<ul style="list-style-type: none"><li>• Polycarbonate with non-conductive, high impact, smooth finish, durable, non-flammable, UV stabilized,</li></ul>

## Diagram



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