

HGR42EW Series

Split Load Three Phase **easywire**[®] Multifunction DIN Rail Energy Meter (MID Certified)

- Four module DIN rail mounted
- Energy pulse LED / High definition white backlit LCD display
- 2 x Inputs from **easywire**[®] Current Transformers
- Three phase network compatible
- Independently programmable CT ratios (Load 1 and Load 2)
- Programmable voltage transformer ratio
- True RMS measurement
- MID B+D Certified
- Simple programming & operation / auto or manual page scrolling
- 2 x Pulse outputs and Modbus communication or Mbus
- Voltage OUT connector for daisy-chaining up to 32 meters from one supply



Product Description

The HGR42EW series is part of the **easywire**[®] family of meters, designed to save up to 90% installation time compared to a standard meter and current transformer installation. The meters contain two 3 Phase metering circuits in one case, and accept inputs from two separate **easywire**[®] 3 Phase current transformers while still utilizing the same voltage reference.

This MID approved, 4 module DIN rail mounted multifunction energy meter, is suitable for monitoring energy consumption and other electrical parameters in industrial and commercial applications. This series is particularly suited for use in split-load lighting and power boards, in three phase applications, and have been certified for billing purposes.

A high efficiency white backlit LCD display provides a clear indication of measured values in all light conditions. Front push-buttons allow user access to the display page required. The meter is available in two versions:-

- With two pulse outputs and RS485 Modbus communication.
- With two pulse outputs and Mbus communication



Displayed Parameters

- Voltage - L-L, L-N and average**
- Current - Per phase and average (LOAD 1 and LOAD 2)**
- Power Factor - per phase and average**
- Frequency**
- Power - Active, Reactive and Apparent (per phase and total)**
- Power Max. demand - Active and apparent power.**
- Energy - Active, reactive and apparent (per load and total)**

| Communications | Part Number |
|---|------------------|
| Split Load Input with RS485 Modbus Output and Two Pulse Outputs kWh (1 per circuit) | HGR42EWC |
| Split Load Input with Mbus Output and Two Pulse Outputs kWh (1 per circuit) | HGR42EWMB |

Display

| | |
|-------------------------------------|--|
| Display Type | LCD, high definition with white back-light |
| Digit height | 6.35mm (displayed parameter) |
| Page scrolling | Manual by front key / or auto scroll mode |
| Displayed parameters and accuracies | Voltage 0.5% of full scale Current 0.5% of full scale Frequency 0.1% of full scale (L-N >20V) Power factor 1% of unity Active power 1% Reactive power 1% Apparent power 1% Active Energy Class 1, Class B (IEC/EN62053-21, IEC/EN50470) Reactive Energy Class 2 (IEC/EN62053-23) |
| Energy maximum display | 9999999 |
| Resolution | 0.01K, 0.1K, 1K, 0.01M, 0.1M (depending on CT ratio & VT ratio) |

Programming

| | |
|---|--|
| Parameters that can be changed using programming menu NOTE: Once Programming Mode Is entered The values in red will be locked out after 15 Mins. No further adjustment is possible without return to factory. | CT Primary current VT primary voltage VT secondary voltage Communication address Communication speed (Baud) Communication Parity Communication number of stop bits Back-light time-out period Demand period (for integration) Pulse duration Pulse output (kWh) Reset to Factory Default Reset Energy and Maximum Demand Reset Active Energy Reset Reactive Energy Reset Apparent Energy Reset Maximum Current Reset Maximum Active Power Reset Minimum Active Power Reset Maximum Reactive Power Reset Minimum Reactive Power Reset Maximum Apparent Power |
| Programming access | Password protected (user selectable) |
| Memory retention | Non volatile memory |

Input

| | |
|---------------------------|---|
| Connection | Three phase four wire |
| Input voltage range | 3 x 100...240V (L - N), 3 x 173...415V (L - L) |
| Voltage Rated Burden | <8VA |
| Nominal current input | 2 x easywire [®] - 1A (330mV) |
| Max current (Imax) | easywire [®] - 1.2A (396mV) |
| Current Rated Burden | N/A - easywire [®] input |
| Starting current | 2mA (0.66mV) |
| Short time overcurrent | 30 x Imax to IEC/EN62053-21 + 23 |
| Impulse voltage withstand | 6kV 1.2/50µS 0.5J |
| AC voltage withstand | 4kV 50Hz for 1 min |
| CT primary current | 5...6000A |
| VT primary voltage | 100...600V |
| Frequency | 50Hz |
| Current distortion factor | According to IEC/EN50470 |

Auxiliary Supply

| | |
|---------------------|------------------------------------|
| Voltage range | Self supplied from measuring input |
| Operating frequency | See input section |
| Power consumption | See input section |

Outputs

| Energy pulses | |
|---------------------------------------|---|
| Number of pulse outputs | 2 |
| Pulse output function | kWh |
| Pulse output type | 1 |
| Pulse output Max. current | 100mA |
| Pulse output voltage range | 5...27VDC |
| Pulse duration | 100ms...2s |
| Pulse resolution | 0.01K, 0.1K, 1K, 0.01M, 0.1M (depending on CT ratio & VT ratio) |
| Communication - Modbus Version | |
| Communication type | RS485 |
| Communication protocol | Modbus |
| Address | 1...255 |
| Number of bits | 8bits |
| Parity | None, odd, even |
| Baud rate | 300, 600, 1200, 2400, 4800, 9600, 19200 |
| Required response time to request | ≤100ms |
| Number of meters connected on the bus | 32 (up to 255 with RS485 repeater) |
| Max distance from Master device | 500M |

Insulation

| | |
|---------------------------|------------|
| Installation category | III |
| Pollution degree | 2 |
| Insulation voltage rating | 300V (L-N) |

Environmental Conditions

| | |
|---------------------------------------|-------------------------|
| Reference temperature | 23°C ±2°C |
| Specified temperature operating range | -10°C...+55°C |
| Storage temperature | -20°C...+75°C |
| Relative humidity | 0...85%, non condensing |
| Mechanical environment | M1 |
| Electromagnetic environment | E2 |

Mechanical

Housing

| | |
|---------------------------------|--|
| Housing | 4 module DIN 43880 |
| Mounting | Snap-on 35mm rail |
| Tamper sealing | Meter housing (by means of a tamper evident seal). Sealable terminal covers. |
| Housing material | Self-extinguishing polycarbonate (UL94 V-0) |
| Protection degree (IEC/EN60529) | IP20 (terminals), IP54 (front of housing) |
| Weight | <210g |

Termination

| | |
|--|---|
| Current input terminal type | 2 x RJ45 |
| Max. wire size | N/A |
| Voltage input terminal type | Pluggable terminal block - Screw clamp type |
| Max. wire size | 2.5mm ² |
| Voltage output terminal type | Pluggable terminal block - Screw clamp type |
| Max. wire size | 2.5mm ² |
| Communication output (RS485 and Pulse) | Pluggable terminal block - Screw clamp type |
| Max. wire size | 1.5mm ² |

Conformity

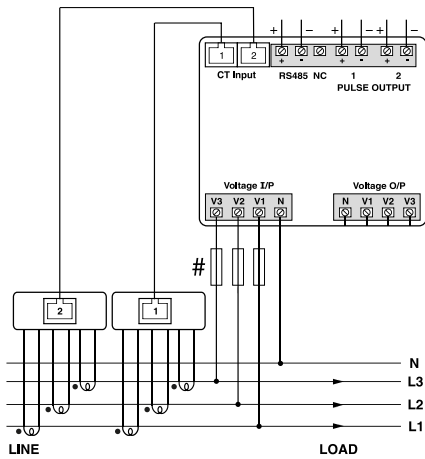
| | |
|-------------------------------|---|
| Electromagnetic compatibility | IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2, -3, -4, -5, -6, -8, -11 IEC/EN50470-1/3 |
| Accuracy and functionality | IEC/EN50470-1/3, IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU |
| Safety | IEC/EN61010, IEC/EN62053-31 |

Wiring Diagrams

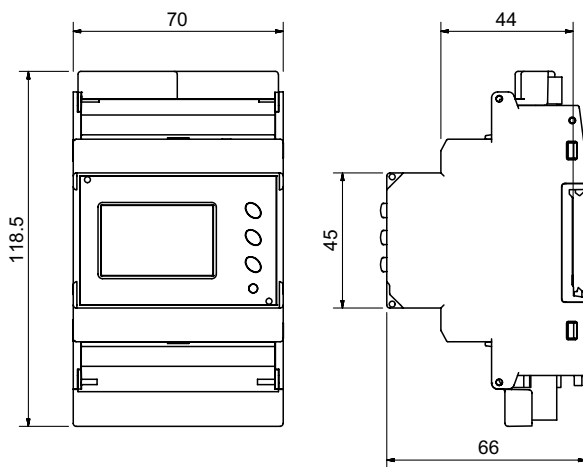
Note: # All fuse types : Class CC UL type fast acting 600V

Max. 3A (Actual rating is dependent on the number of meters connected to the voltage supply and must be determined during system design).

3 Phase 4 Wire - 2 CT



Dimensions



Model Selection Table

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|---|-------------|
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