

HGR41EW Series

Three Phase **easywire**®

Multifunction DIN Rail Energy Meter (MID Certified)

- Four module DIN rail mounted
- Energy pulse LED
- Input from **easywire**® Current Transformers
- Three phase network compatible
- Programmable voltage and current transformer ratio
- True RMS measurement
- MID B+D Certified
- High definition white backlit LCD display
- Simple programming and operation
- Pulse output and Modbus communication or Mbus
- Voltage OUT connector for daisy-chaining up to 32 meters from one supply



Product Description

The HGR41EW series are part of the **easywire**® family of meters. The **easywire**® system has been designed to save up to 90% installation time compared to a standard meter and current transformer installation.

This MID approved DIN rail mounted multifunction energy meters is suitable for monitoring energy consumption and many other electrical parameters in industrial and commercial applications. These meters may be used in three phase applications and have been certified for billing purposes.

A high efficiency white backlit LCD display provides clear indication of measured values in all light conditions.

Push-buttons on the front of the meter allow the user access to the display page required.

The meter is available in two versions:-

- With single pulse output and RS485 Modbus communication
- With single pulse output and Mbus communication

The unit is housed in a compact four module width housing suitable for DIN rail mounting.

Displayed Parameters

- Voltage - L-L, L-N and average
- Current - per phase and average
- 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 (total)



Communications	Part Number
RS485 Modbus and Single Pulse kWh Output	HGR41EWC
Mbus and Single Pulse kWh Output	HGR41EWMB

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	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	1
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	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

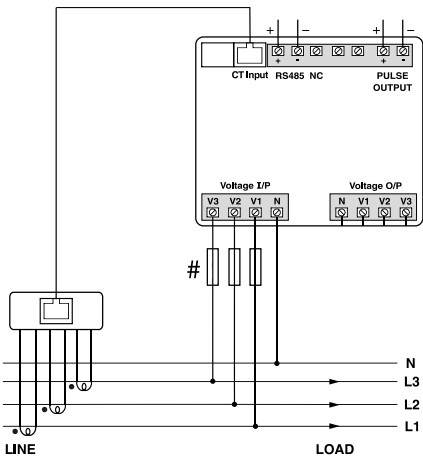
Electromagnetic compatibility	IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2, -3, -4, -5, -6, -8, -11 IEC/EN50470-1/3
Accuracy and functionality	IEC/EN50470-1/3, IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU
Safety	IEC/EN61010, IEC/EN62053-31

Wiring Diagrams

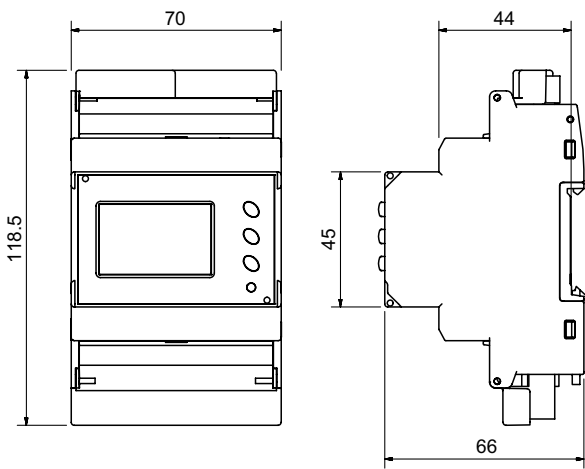
Note: # All fuse types : Class CC UL type fast acting 600V

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 - 1 CT



Dimensions



Model Selection Table

Communications	Part Number
RS485 Modbus and Single Pulse kWh Output	HGR41EWC
Mbus and Single Pulse kWh Output	HGR41EWMB