

HGR43 Series

Three Phase

easywire® Multifunction DIN Rail Energy Meter (MID Certified)

- Advanced net load type monitoring in Power and Lighting board applications
- Advanced Multi mode operation to suit orientation and load types being monitored in Distribution boards
- Simple mode of operation selection
- Energy pulse LED
- True RMS measurement
- High definition white backlit LCD display
- Modbus communication
- Four module DIN rail mounted



Product Description

The HGR43 series are part of the **easywire®** family of meters. This series of meters are optimised for the application of UK style Power and Lighting Distribution boards. The meter provides net energy values for each load type (group of circuits). Advanced features include multi-mode operation, to better match application requirements. A high efficiency white backlit LCD display provides clear indication of measured values in all light conditions. Energy data is labelled on the meter as SM (Small Power), LL (Lighting Circuits) SE (Services) and SYS (System / total energy). 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 RS485 Modbus communication (RJ12 - In and Out). The unit is housed in a compact four module width housing suitable for DIN rail mounting.

Displayed Parameters

- Per load group and total system**
- 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)**
- Energy - Active, reactive and apparent (per load and total)**



Communications	Part Number
MID Certified Tri Load Input with RS485 Modbus Output	HGR43

Display

Display Type	LCD, high definition with white back-light																				
Digit height	6.35mm (displayed parameter)																				
Page scrolling	Manual by front key																				
Displayed parameters and accuracies	<table> <tr> <td>Voltage</td> <td>0.5% of full scale</td> </tr> <tr> <td>Current</td> <td>0.5% of full scale</td> </tr> <tr> <td>Frequency</td> <td>0.1% of full scale (L-N >20V)</td> </tr> <tr> <td>Power factor</td> <td>1% of unity</td> </tr> <tr> <td>Active power</td> <td>1%</td> </tr> <tr> <td>Reactive power</td> <td>1%</td> </tr> <tr> <td>Apparent power</td> <td>1%</td> </tr> <tr> <td>Active Energy</td> <td>Class 1 (IEC/EN62053-21), Class B (IEC/EN50470)</td> </tr> <tr> <td>Reactive Energy</td> <td>Class 2 (IEC/EN62053-23)</td> </tr> <tr> <td>Apparent Energy</td> <td>Class 1</td> </tr> </table>	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 (IEC/EN62053-21), Class B (IEC/EN50470)	Reactive Energy	Class 2 (IEC/EN62053-23)	Apparent Energy	Class 1
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Reactive Energy	Class 2 (IEC/EN62053-23)																				
Apparent Energy	Class 1																				
Energy maximum display	9999999																				
Resolution	0.1K (125A CT), 1K (250A CT) - depending on CT ratio																				

Programming

Parameters that can be changed using programming menu	CT Primary current - Load 1, Load 2, Load 3, Load 4, CT (each load independently settable) Communication address Communication speed (Baud) Communication Parity Communication number of stop bits Back-light time-out period
Programming access	Password protected (user selectable)
Memory retention	Non volatile memory

Input

Connection	Three phase four wire
Input voltage range	3 x 85...275V (L - N), 3 x 147...475V (L - L)
Voltage Rated Burden	<8VA
Nominal current input	3 x easywire [®] input - 1A (330mV)
Max current (Imax)	easywire [®] - 1.2A (396mV) Nominal x 1.2
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	125A or 250AA
Frequency	50Hz

Auxiliary Supply

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

Outputs

Communication - Modbus	
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).
Housing material	Self-extinguishing polycarbonate (UL94 V-0)
Protection degree (IEC/EN60529)	IP20 (terminals), IP54 (front of housing)
Weight	<240g
Termination	
Current input terminal type	3 x RJ45 connection
Max. wire size	N/A
Voltage input terminal type	Pluggable terminal block - Screw clamp type
Max. wire size	0.5...2.5mm ²
Voltage output terminal type	Pluggable terminal block - Screw clamp type
Max. wire size	0.5...2.5mm ²
Voltage output terminal type	Pluggable terminal block - Screw clamp type
Max. wire size	N/A

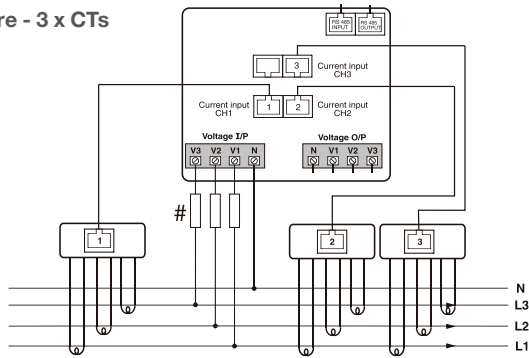
Conformity

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/EN62053-21, IEC/EN62053-23
Safety	IEC/EN61010, IEC/EN62053-31

Wiring Diagrams

Note: # All fuse types : 0.5A Class CC UL type Max. 3A (Actual rating is dependent on the number of meters connected to the voltage supply and must be determined during system design).
0.5A fast acting 600V

3 Phase 4 Wire - 3 x CTs



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