MRJ4M-MID

Multifunction Meter



DIN 70mm

Features :

- True RMS measurement
- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent)
- Energy (Active, Reactive)
- Programmable voltage and current transformer ratio
- Plug-n-Wire, RJ45 Connector Current Input
- Modbus RTU Communication (RS485)
- Single Pulse Output
- Self Powered

Certification : MID CE RoHS compliant

Display Specifications

Display Type	LCD, high definition with white back-light
Digit height	6.35mm (displayed parameter)
Page scrolling	Manual / Auto scroll mode by front key
Energy maximum display	9999999
Resolution	For energy : 0.01k, 0.1k, 1k, 1M, 0.01M, 0.1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current : Auto Resolution For Power Factor : 0.001

Input specification

Connection	Three phase four wire
Input voltage range	3 x 85 to 240V (L-N) 3 x 147 to 415V (L-L)
Voltage rated burden	<8VA
Nominal current input	RJ45 - 1A (330mV)
Max current (Imax)	RJ45 - 1.2A (396mV)
Current Rated Burden	N/A
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	1 to 6000A
PT primary voltage	100 to 600V
Frequency	50Hz
Current distortion factor	According to IEC/EN50470
Programming access	Password protected (user selectable)
Memory retention	Non volatile memory
Accuracy	
Voltage	0.5% of full scale
Current	0.5% of full scale
Frequency	±0.1 For L - N Voltage >20V For L - L Voltage >35V
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)

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 (total)
Settable parameter	CT Primary current PT primary voltage PT 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 Weight (kWh) Reset to Factory Default Reset Energy and Maximum Demand Reset Active Energy Reset Reactive Energy Reset Maximum Current Reset Maximum Active Power Reset Minimum Active Power Reset Maximum Reactive Power Reset Minimum Reactive Power Reset Maximum Apparent Power

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.

MID APPROVED FOR BILLING APPLICATIONS
Measuring Instruments Directive

Auxiliary Supply specification

Voltage range	60 to 300V AC, 50 / 60Hz (±5%), Self Supplied (V1, N)
Operating frequency	50/60Hz
Power consumption	<8VA

Output Specification

Energy pulses	
Number of pulse outputs	1
Pulse output function	kWh
Pulse output Max. current	100mA
Pulse output voltage range	5 to 27V DC
Pulse duration	50 / 100 / 150 / 200 / 250 / 300ms
Pulse resolution	0.001K, 0.01K, 0.1K, 1K,0.01M,0.1M (depending on CT ratio & PT ratio)

Communication

Communication type	RS485
Communication protocol	Modbus
Address	1 to 255
Number of bits	8 bits
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 to +55°C
Storage temperature	–20°C to +75°C
Relative humidity	0 to 85%, non condensing
Mechanical environment	M1
Electromagnetic environment	E1

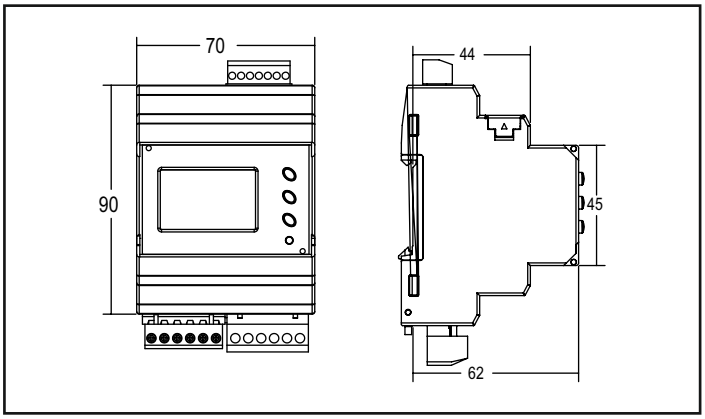
Mechanical

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), IP51 (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

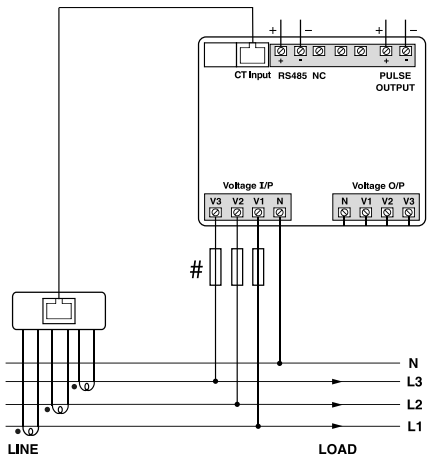
Dimensions (All are in mm)



Terminal Connections

MRJ4M-MID

3 Phase 4 Wire - 1 CT



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).

Compliance

Applicable EMI / EMC Standards
Product Standard : IEC 61326 - 1
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
IEC/EN62053-31
Safety
IEC/EN61010

Ordering information

Product code	Communication	Certification
MRJ4M-MID	RS485 Modbus output	MID CE