MFM384-R-C-MID

Multifunction Meter

DIN 70mm

Features :

- True RMS measurement
- MID B+D Certified
- 3Ø Power (Active, Reactive, Apparent)
- Programmable voltage and current transformer ratio
- -1A or -5A current transformer input (MID certification only on 5A)
- Single phase or three phase network compatible
- Modbus RTU Communication (RS485)

Certification : MID CE

Display Specifications

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
Energy maximum display	9999999
Resolution	0.01K, 0.1K, 1K, 0.01M, 0.1M, 1M (depending on CT ratio & PT ratio)

Input specification

Connection	Single phase (CT on L1 only), Three phase four wire
Certified voltage range	3 x 85 to 240V (L - N), 3 x 147 to 415 (L - L)
Voltage rated burden	<0.2VA
Nominal current input	0.05 to 5A
Max current (Imax)	6A (1.2 x Nominal)
Current Rated Burden	0.5VA
Starting current	10mA
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 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% 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/EN50470-3) 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 Min./Max. demand – Active and Apparent power. Energy – Active, Reactive and Apparent (Total)

Settable parameter	CT Primary current CT Secondary 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) 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

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.

Auxiliary Supply specification

Voltage range	100 to 240V (±15%)
Operating frequency	45 to 65Hz
Power consumption	<8VA

MID APPROVED FOR BILLING APPLICATIONS
Measuring Instruments Directive

Output Specification

Communication type	RS485
Communication protocol	Modbus RTU
Address	1 to 255
Number of bits	8bits
Parity	None, odd, even
Baud rate (bps)	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)

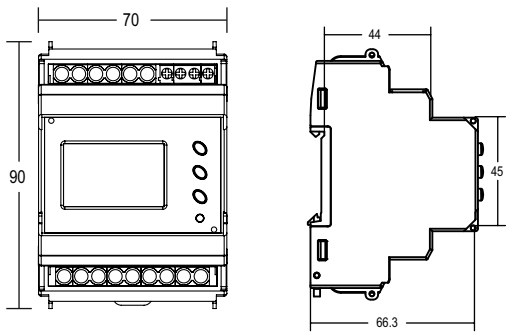
Environmental Conditions

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	E2

Termination

Current input	Terminal type Screw clamp type
Max wire size	2.5mm^2
Voltage input terminal type	Screw clamp type
Max wire size	2.5mm^2
Communication output (RS485)	Screw clamp type
Max wire size	1.5mm^2

Dimensions (All are in mm)



Compliance

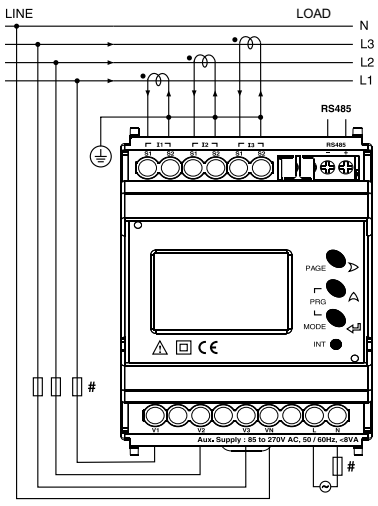
Applicable EMI / EMC Standards
Product Standard : IEC 61326 - 1
Electromagnetic compatibility
IEC61326-1, IEC/EN55011 Class A
IEC/EN61000-4-2, -3, -4, -5, -6, -8, -11
IEC/EN50470-1/3
Accuracy and functionality
IEC/EN50470-1/3, IEC/EN62053-21
IEC/EN62053-23, DIRECTIVE 2014/32/EUIEC/EN50470-1/3
IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU
Safety and Standards
IEC/EN61010, IEC/EN62053-31

Ordering information

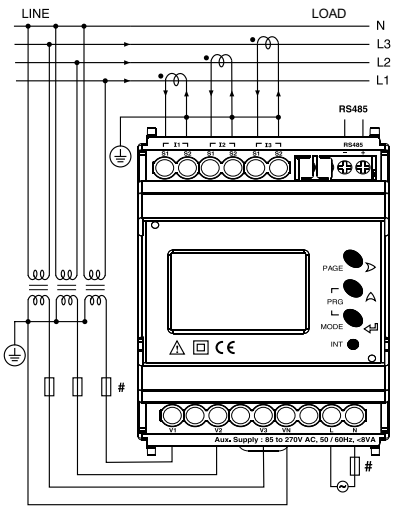
Product code	Communication	Certification
MFM384-R-C-MID	RS485 Modbus output	MID CE

Terminal connection

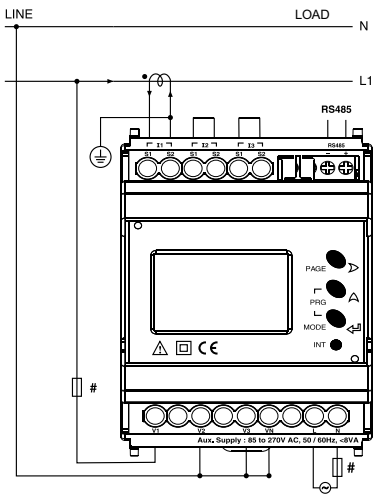
3 Phase 4 Wire - 3 CTs



3 Phase 4 Wire - 3 CTs and 3 PTs



Single Phase 2 Wire - 1 CTs



Note: # All fuse types : 0.5A class CC UL type : 0.5A fast acting 600V