MFM384-C-D-CE-CL05-Plus

Multifunction Meter



96 x 96mm

Features :

- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent)
- Energy (Active, Reactive, Apparent) (Import / Export)
- Max / Min Demand Current & Power
- 3Ø Power factor (Average, Individual, Displacement & True PF)
- Cybersecurity: Supports the disabling of the Rs485
- RPM (monitors generator speed)
- On site firmware update through communication
- % unbalance for voltage and current
- Self-Test Mode
- Modbus RTU communication (Rs485)
- Suppression current
- Real-Time Clock (RTC)
- % THD Up to 31st level
- Neutral Current
- DG sensing

Certification : CE

Display specifications

Display	LCD with Backlight, 4 rows to show electrical parameters with their symbols,
Digits	4 digits (Lowest 9 digits for energy display)
Digit height	0.49 inch
Bargraph	For Current representation
Resolution	For energy : 0.001k (Auto resolution) For Power, Voltage, Current : Auto resolution For Power factor : 0.001
Protection features	Password protected for set-up & clearing energy and Min/Max data

Input specifications

Type of measurement	TRUE RMS
Sampling rate	121 Samples / Cycle
Electrical connections	3Ø - 3 wire (Delta), 3Ø - 4 wire (Wye), 1Ø - 2 wire (L - L), 1Ø - 2 wire (L - N)
Data update rate	
Instantaneous	1 sec
Demand	15 sec
Harmonics	5 sec
Input-voltage	
PT primary	100V to 999000kV (Programmable for any value)
PT secondary	100, 110, 115, 120V (Programmable)
Voltage nominal	277V L-N / 480V L-L
Measured V with full range	35 to 600V AC L-L
Permanent overload	750V AC L-L
Impedance	≥0.8MΩ
Frequency range	45 - 65Hz
VA burden	<0.2VA at 300V AC L-N / Phase
Input current	
CT ratings primary	1/ 5A to 32760A (Programmable for any value)
CT ratings secondary	1 / 5A (Programmable for any value)
Current nominal	5A
Measured Amps with over range & Crest factor	5 mA to 6 A
Withstand	120A for 1sec
Frequency range	45 - 65Hz
VA burden	0.5VA at 5A / phase

Measurement accuracy

Voltage (L-N)	±0.5% of F.S.
Voltage (L-L)	±0.5% of F.S.
Current	±0.5% of F.S.
Frequency	±0.05% ; For L-N V>20V For L-L V>35V
Active Power	±0.5%
Apparent power	±0.5%
Reactive Power	±1%
Power factor	±0.01
Active energy	Class 0.5S (IEC 62053-22)
Reactive energy	Class 1 (IEC 62053-23)
Apparent energy	Class 0.5S (IEC 62053-22)
MAX / MIN kW	±0.5%
MAX / MIN kVAr	±1%
MAX kVA	±0.5%
THD V,I	Class 5 (IEC61557-12)

Output specifications

Pulse output	Voltage range : 24 / 48V DC Current capacity : 100mA Pulse width : 50ms Configurable pulse weight from 1 to 9999000 pulses / k_h(kWh, kVAh, or kVARh)
Device ID & Parity	1 to 247 & None, Odd, Even
Protocol & Interface	RS485 and MODBUS RTU
Transmission mode	Half duplex
Data types	Float and Integer
Transmission distance	500m maximum
Transmission speed	4800, 9600,19200,38400 (in bps)
Stop bits	1 or 2
Response time	100 ms (Max and independent of baud rate)
Isolation	2.5kV RMS

Mechanical specifications

Weight	352 gms Approx
Material	LEXAN 923- 7035 GREY
IP degree of protection	Front : IP65 Back : IP20
Torque at terminals	0.4 Nm to 0.6 Nm
Wire gauge at terminals	18 to 24 AWG; 75°C
Mounting position	Vertical

Auxiliary supply specifications

Supply voltage	40 to 300V AC / DC, 50 / 60 Hz, (±5%)
Burden	< 6 VA at 277V L-N
Frequency	50/60 Hz nominal
Ride-through time	100 ms typical at 120V AC and maximum burden 100 ms typical at 277V AC and maximum burden

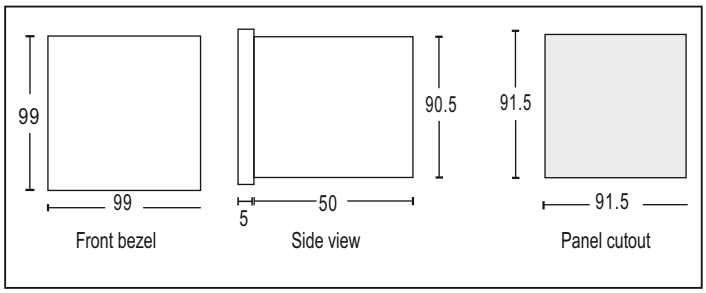
Input specification

Digital Input	24V / 48V DC

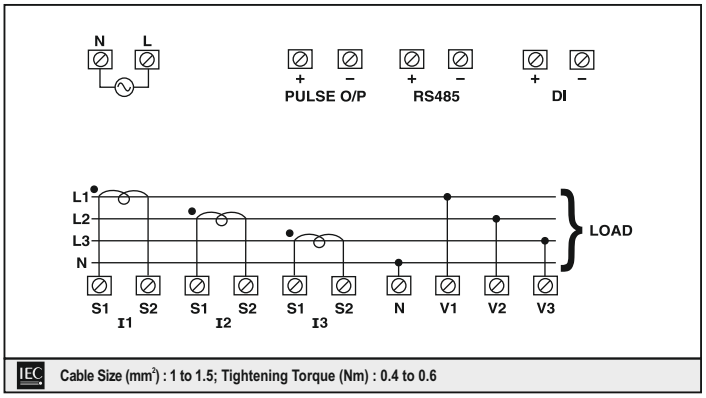
Environmental specifications

Operating temperature	Meter -10°C to +60°C (14°F to 140°F)
Storage temperature	Meter -25 °C to +70 °C (-13 °F to 158 °F)
Humidity	5% to 95% RH
Altitude	Up to 2000 meters (6561 ft.)
Measurement category	CAT III
Pollution degree	2
Product life	> 5 years

Dimensions (All are in mm)



Terminal connection



Cable Size (mm²) : 1 to 1.5; Tightening Torque (Nm) : 0.4 to 0.6

Compliance

Applicable EMI / EMC Standards	
Product Standard : IEC 61326 - 1	
Category	**Standards compliance**
Electrostatic discharge	IEC 61000 - 4 - 2
Immunity to electromagnetic RF fields	IEC 61000 - 4 - 3
Conducted immunity	IEC 61000 - 4 - 6
Immunity to magnetic fields	IEC 61000 - 4 - 8
Immunity to voltage dips and interruptions	IEC 61000 - 4 - 11
Fast transient	IEC 61000 - 4 - 4
Immunity to surge waves	IEC 61000 - 4 - 5
Conducted and radiated emissions	CISPR-11
Safety and Standards	
IEC61010-1 Edition 3.0 CAT III, Protection class II	
IEC 61326 - 1	
CAT III up to 480 V L-L	
CAT III up to 300 V L-N	
As per IEC/UL 61010-1 Ed-3	

Ordering information

Product code	Supply voltage	Output		Certification
		Pulse Output	Comm. (RS485)	
MFM384-C-D-CE-CL05-Plus	40 to 300V AC/ DC, 50 / 60 Hz	YES	YES	CE