ACCURACY

±1% of Full Range ±1 Count

ENVIRONMENTAL CONDITION

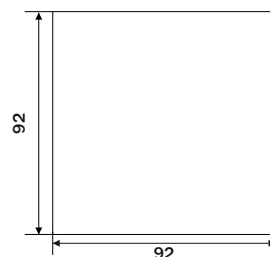|	
Working Temperature	0 to 55°C
Storage Temperature	0 to 55°C
Relative Humidity	95 % RH Non-Condensing
Protection Level (As per Request)	IP-65 (Front side As per IS/IEC 60529 : 2001)

MECHANICAL INSTALLATION
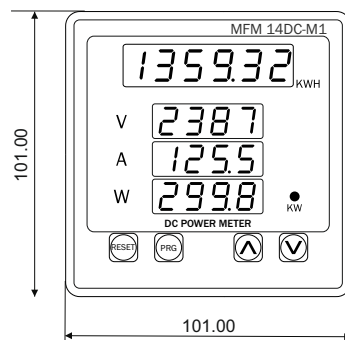
FRONT VIEW
All dimensions are in mm
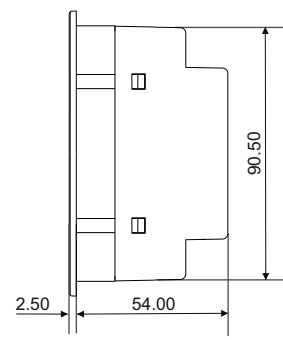
RIGHT SIDE VIEW

Panel Cutout

TECHNICAL SPECIFICATION

INPUT SPECIFICATION :

Current	
Input Current	Through external shunt (-75mV To +75mV DC)
Shunt Selectable	5 to 9999 Amp
Voltage	
Direct voltage DC	0 to 1000V DC

CALCULATED PARAMETERS :

Parameter	Range	Accuracy
DC Voltage	0.00 - 49.99 V DC	1 % OF 49.99V
	50.0 - 199.9 V DC	1 % OF 199.9V
	200.0 - 399.9 V DC	1 % OF 399.9V
	400.0 - 1000 V DC	1 % OF 1000 V
DC Current	-999 - 9999 A DC	1 % OF FSD
WATT	-999 - 9999 kW	
kWh	0 - 999999 kWh	

DISPLAY & KEYS :

Display	6 Digit, 7 seg. 0.40" RED 4 Digit, 3 Line 7 seg. 0.40" RED
Key	RESET, PRG, INC, DEC

DIMENSION :

Size (mm)	101 (H) x 101 (W) x 54 (D) mm
Panel Cutout	92 (H) x 92 (W) mm

AUXILIARY POWER SUPPLY :

Power Supply	100V to 270V AC/DC, 50/60 Hz
Burden	Approx 5VA @ 230V AC

TERMINAL CONNECTION

DISPLAY INDICATION

KWH Value — `1359.32` KWH

DC Volt — V `2387`

DC Amp — A `125.5`

DC Watt — W `299.8` ● KW

DC POWER METER
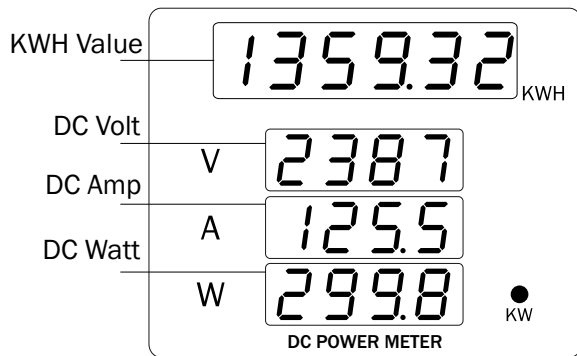
KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To enter in parameter setting	PRG Press 5 sec
To Reset the kWh Value	RESET
PARAMETER SETTING MODE	
To set parameter value	PRG
To increment parameter value.	∧
To decrement parameter value.	∨
Set parameter to be save & exit.	PRG

MECHANICAL INSTALLATION

1. Prepare the panel cutout with proper dimensions as shown above.

2. Fit the unit into the panel with the help of clamp given.

3. The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oil steam, or other unwanted process byproducts.

4. Use the specified size of crimp terminal (M3.5 screws) to wire the terminal block. Tightening the screws on the terminal block using the tightening torque of the range of 0.5 N.m.

5. Do not connect anything to unused terminals.

MAINTENANCE

1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.

2. Clean the equipment with a clean soft cloth. Do not use isopropyl alcohol or any other cleaning agent.

3. Fusible resistor must not be replaced by operator.

⚠ SAFETY PRECAUTION

Please read the "Safety Warnings" in the instruction manual supplied with the instrument thoroughly and completely for correct use. Failure to follow the safety rules can cause fire, trouble, electrical shock, etc. Therefore, make sure to operate the instrument on a correct power supply and voltage rating marked on each instrument.

If all the equipment is not handled in a manner specified by the manufacturer, it might impair the protection provided by the equipment.

☞ Read complete instructions prior to installation and operation of the unit.

⚡ WARNING : Risk of electric shock.

WARNING GUIDELINES

⚡ WARNING : Risk of electric shock.

1) To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement. Do not touch the terminals while power is being supplied.

2) To reduce electromagnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.

3. Cable used for connection to power source, must have a cross section of $1mm^2$ or greater. These wires should have insulations capacity made of at least 1.5kV.

4) A better anti-noise effect can be expected by using standard power supply cable for the instrument.

INSTALLATION GUIDELINES

1) Do not allow pieces of metal, wire clippings, or fine metallic fillings from installation to enter the product or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.

2) Circuit breaker or mains switch must be installed between power source and supply terminal to facilitate power 'ON' or 'OFF' function. However this mains switch or circuit breaker must be installed at convenient place normally accessible to the operator.

3) Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

PARAMETER SETTING

Press (PRG) Key For 5 Sec.
To Enter in Parameter Setting

PASSud KWH

V

A   10

W   KW

Password - (10)

Press (PRG) Key

SHUnt KWH

V

A   100

W   AмP   KW

Shunt Selectable Range:
5 to 9999Amp

Press (PRG) Key to Save & Exit

kWh RESET

To Reset KWH Press (RESET) Key For 5 Sec

PASSud KWH

V

A   15

W   KW

Password (15)

Press (PRG) Key

rESEt KWH

V   Yсн

A   YES

W   KW

kWh YES/NO

To Reset kWh Press (PRG) Key

**Note :- To Change Parameter Value
Press (∧) OR (∨) Key**

MODBUS SETTING

Press (PRG) Key For 5 Sec.
To Enter in Parameter Setting

PASSud KWH

V

A   35

W   KW

Password - (35)

Press (PRG) Key

AddrES KWH

V

A   1

W   KW

Slave Address - Range:
1 to 127

Press (PRG) Key

bAUdrt KWH

V

A   9600

W   KW

Baudrate - 2400,4800
9600,19200
38400 bps

Press (PRG) Key

PArity KWH

V

A   nOnE

W   KW

Parity - None,Even
Odd

Press (PRG) Key

dAtA KWH

V

A   FLOt

W   KW

Data Type - Float

Press (PRG) Key

FrмdLY KWH

V

A   0

W   KW

Frame Delay Time -
0 to 100 ms

Press (PRG) Key to Save & Exit

MODBUS (MFM-14 DC-M1)

Slave Address :	1 to 127
Baudrate :	2400,4800,9600,19200,38400bps
Parity :	None,Even,Odd
Datatype :	Float (32 Bit Little Endian Byte Swap)
Frame Delay Time :	0 to 100 milli sec
Read Function Register :	0x03 and 0x04
Write Function Register :	0x06 and 0x10

Sr.No	Access Type	Parameter	Register Data Type Float
1	R	kWh Value *[N1]	0
			2

*Note 1 :- In Above Energy Parameter, Energy Value
  Representation shown as per below.

Example :- Actual Value = 320126789.321

  Above Register Address 1 = 320126789

  Below Register Address 2 = 0.321

Sr.No	Access Type	Parameter	Register Data Type Float
2	R	DC Voltage	4
3	R	DC Current	6
4	R	DC Watt	8
5	R	Watt/Kilo Watt Status	10

Selection	Value
Watt	0
Kilo Watt	1

Sr.No	Access Type	Parameter	Register Data Type Float
6	R	N/A	12
7	R	N/A	14

Note :- To Reset Kwh Enter 15 Value

Sr.No	Access Type	Parameter	Register Data Type Float
8	R/W	Reset kWh	16
9	R/W	Address	18
10	R/W	Baudrate	20

Selection	Value
2400	0
4800	1
9600	2
19200	3
38400	4

Sr.No	Access Type	Parameter	Register Data Type Float
11	R/W	Parity	22

Selection	Value
None	0
Even	1
Odd	2

Sr.No	Access Type	Parameter	Register Data Type Float
12	R	Data Type	24

	Value
Float	1

Sr.No	Access Type	Parameter	Register Data Type Float
13	R/W	Frame Delay Time	26
14	R/W	Shunt Value	28