MULTISPAN

DC MULTIFUNCTION METER
MFM 142DC-M1

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)	96 (H) x 96 (W) x 54 (D) mm
Panel Cutout	92 (H) x 92 (W) mm

AUXILIARY POWER SUPPLY :

Power Supply	100V to 270V AC
Burden	Approx 5VA @ 230V AC

OUTPUT SPECIFICATION:

Relay Output	
Relay	2 Nos
Relay Type	1C/O (NO-C-NC)
Rating	10A, 230V AC / 28V DC (Reg. Load)

COMMUNICATION:

RS-485 MODBUS

ACCURACY

Class 1.0 (Standard)

ENVIRONMENTAL CONDITION

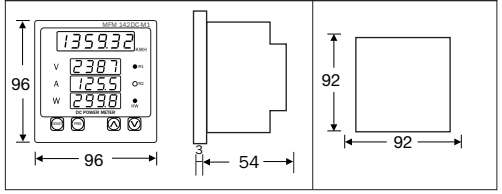
Working Temperature	0 to 55 °C
Storage Temperature	0 to 55 °C
Relative Humidity	95 % RH Non-Condensing
Protection Level (As per Request)	IP-65 (Front side As per IS/IEC 60529 : 2001)

Protection Parameter

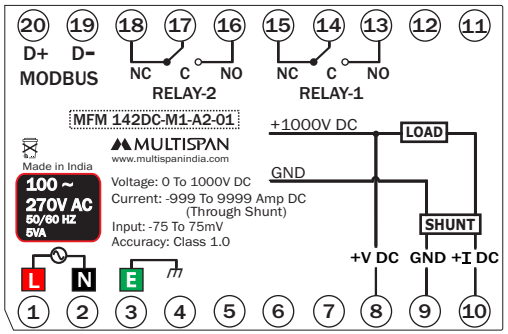
Over Volteg
Under Volteg
Over Current
Under Current

MECHANICAL INSTALLATION

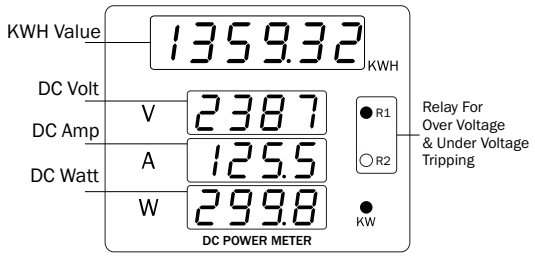
Outline Dimension (mm)	Panel Cutout Dimension (mm)



TERMINAL CONNECTION



DISPLAY INDICATION



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 1.2 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

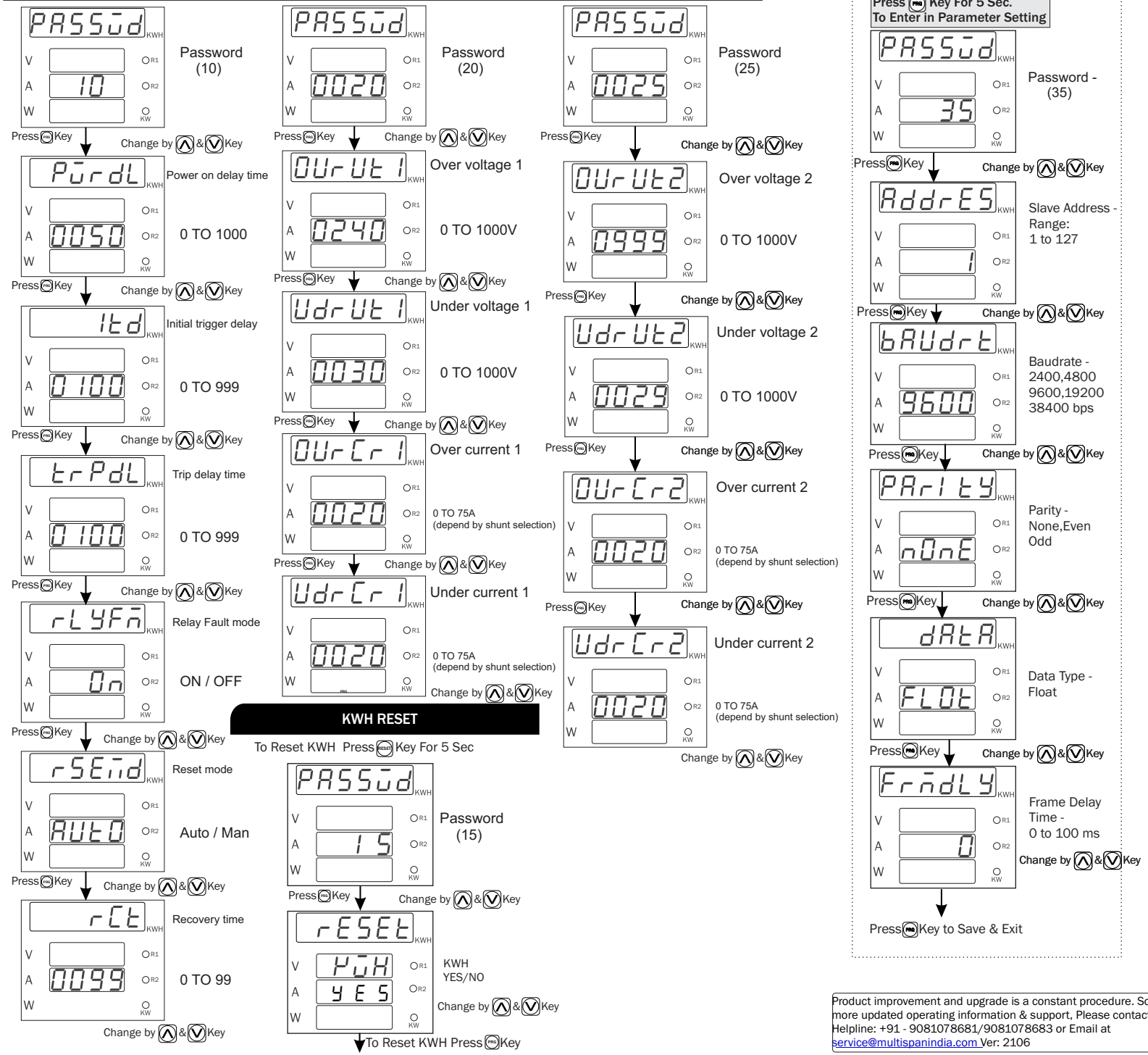
WARNING : Risk of electric shock.

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 electro magnetic 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 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



Product improvement and upgrade is a constant procedure. So for more updated operating information & support, Please contact our Helpline: +91 - 9081078681/9081078683 or Email at service@multispanindia.com Ver: 2106

MODBUS (MFM-142 DC-M1)

Slave Address :	1 to 127
Baudrate :	2400,4800,9600,19200,38400bps
Parity :	None,Even,Odd
Datatype :	Float
Frame Delay Time :	0 to 99 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

2	R	DC Voltage	4
3	R	DC Current	6
4	R	DC Watt	8
5	R	Watt/Kilo Watt Status Selection: Value Watt: 0 Kilo Watt: 1	10
6	R	R1 Status Selection: Value ON: 0 OFF: 1	12
7	R	R2 Status Selection: Value ON: 0 OFF: 1	14

Note :- To Reset Kwh Enter 15 Value

8	R/W	Reset KWh	16
9	R/W	Address	18
10	R/W	Baudrate Selection: Value 2400: 0 4800: 1 9600: 2 19200: 3 38400: 4	20
11	R/W	Parity Selection: Value None: 0 Even: 1 Odd: 2	22
12	R	Data Type Float: 1	24
13	R/W	Frame Delay Time	26
14	R/W	Shunt Primary	28
15	R/W	Shunt Secondary	30
16	R/W	Power on delay	32
17	R/W	Initial Time Delay	34
18	R/W	Trip delay time	36
19	R/W	Relay fault mode	38
20	R/W	Reset mode	40
21	R/W	Recovery Time delay	42

22	R/W	R1 Over voltage E/D Selection: Value Disable: 0 Enable: 1	44
23	R/W	R1 Under voltage E/D Selection: Value Disable: 0 Enable: 1	46
24	R/W	R1 Over current E/D Selection: Value Disable: 0 Enable: 1	48
25	R/W	R1 Under current E/D Selection: Value Disable: 0 Enable: 1	50
26	R/W	R1 Over voltage set value Selection: Value Disable: 0 Enable: 1	52
27	R/W	R1 Under voltage set value Selection: Value Disable: 0 Enable: 1	54
28	R/W	R1 Over current set value Selection: Value Disable: 0 Enable: 1	56
29	R/W	R1 Under current set value Selection: Value Disable: 0 Enable: 1	58
30	R/W	R2 Over voltage E/D Selection: Value Disable: 0 Enable: 1	60
31	R/W	R2 Under voltage E/D Selection: Value Disable: 0 Enable: 1	62
32	R/W	R2 Over current E/D Selection: Value Disable: 0 Enable: 1	64
33	R/W	R2 Under current E/D Selection: Value Disable: 0 Enable: 1	66
34	R/W	R2 Over voltage set value Selection: Value Disable: 0 Enable: 1	68
35	R/W	R2 Under voltage set value Selection: Value Disable: 0 Enable: 1	70
36	R/W	R2 Over current set value Selection: Value Disable: 0 Enable: 1	72
37	R/W	R2 Under current set value Selection: Value Disable: 0 Enable: 1	74