MV15

Voltmeter - Digital

48 x 96mm

Features:

- **True RMS Measurement**
- **For 1 Phase 2 Wire Electrical Network**

Certifications: CE c UL us LISTED

Display Specifications

Display	Single row, 7 segment LED Display
Digits	3 Digit
Digit Height	0.56" (14.2mm)
Display Range	0 - 516V

Input Specifications

Electrical Connection	1 Ø-2 wire
Input Type	AC
Input Voltage Range	50-480V
Continuous Max. Input Rating	516V
Overrange Indication	"Or" for input > 516V
Frequency	50 / 60Hz
Resolution	1V
Accuracy	±0.5% of F.S
Input Impedance	1MΩ (± 5%)
Sampling Rate	3 samples / second
Dielectric withstand Voltage	2kV AC between auxiliary supply & measuring input
Rated Impulse withstand Voltage	3.5kV (1.2/50µS)

Auxiliary Supply Specifications

Auxiliary Supply	AC: 240V AC ± 20%, (50 / 60Hz) 110V AC ± 20%, (60Hz)
Power Consumption	5VA max

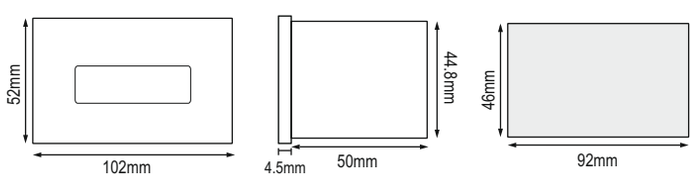
Environmental Specifications

Temperature	Operating: -10 to +55°C (14 to 131°F)
	Storage: -20 to +75°C (-4 to 167°F)
Humidity (non-condensing)	Up to 95% RH

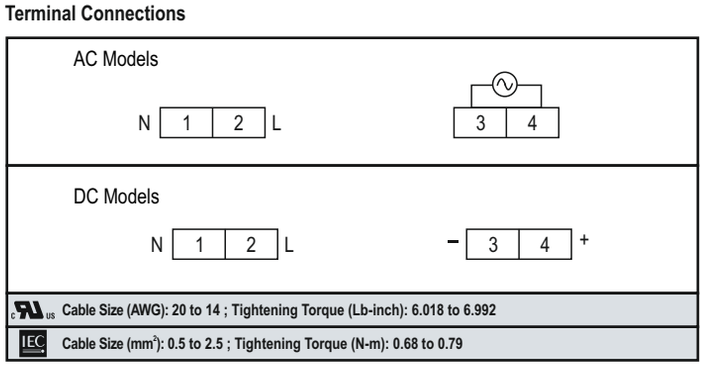
Mechanical Specifications

Mounting	Panel mount
Weight	170 gms (0.374 lbs)

Dimensions



Terminal Connections



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		**Standards Compliance**
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	**Dips** : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) **Interruptions** : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Supply Voltage		Certification	
	240V AC	110V AC	CE	c UL us LISTED
MV15	■			
MV15-CE	■		■	
MV15-230V-CE	■		■	
MV15-AC-20/200V	■			
MV15-AC-200/2000mV	■		■	■
MV15-DC-2V	■			
MV15-DC-20V	■			
MV15-DC-20V-110V-CU		■	■	■
MV15-DC-200V	■			
MV15-DC-200V-110V		■		
MV15-DC-200V-110V-CU		■	■	■
MV15-DC-200mV	■			

OP372-V01

(48 x 96) (48 x 48) (72 x 72) (96 x 96)

SPECIFICATIONS

AC MODEL						
Product Name	**MV15**	**MV205**	**MV305**	**MV507**	**MV207**	**MV2307**
Description	1 Ø Digital voltmeter					3 Ø Digital voltmeter with Selector switch
Display	3 Digit 7 segment LED display			3 Digit, LCD with Analog style bar graph indication		
Display range	0 to 516V					0 to 300V (L-N) 0 to 516V (L-L)
Input range	50 to 480V AC					
Input Frequency	50 / 60Hz					
Max continuous Input range	516V					
Over range indication	"Or" for input > 516V					
Input impedance	1MΩ(±5%)					
Resolution	1V					
Electrical connection	1 Ø - 2 wire					3 Ø-4wire, 3 Ø-3wire
Supply Voltage(Vn)	240V AC (± 20%), 50 / 60Hz ; 110V AC (± 20%), 60Hz					
Weight	170gm	180gm	180gm	165gm	194gm	206gm
CE and UL Certification	YES	YES	CE ONLY	YES	YES	YES

DC MODEL					AC MODEL (AUTO RANGING TYPE)	
Product Name	**MV15-DC-20V**	**MV15-DC-200V**	**MV15-DC-200mV**	**MV15-DC-2V**	**MV15-AC-20/200V**	**MV15-AC-200/2000mV**
Description	Digital voltmeter					
Display	3 ½ digit 7 Segment LED Display					
Display range	-19.99V to +19.99V	-199.9V to +199.9V	-199.9mV to +199.9mV	-1999mV to +1999mV	0 to 19.99/199.9V	0 to 199.9/1999mV
Input range	0 to ±20V	0 to ±200V	0 to ±200mV	0 to ±2000mV	0 to 20/200V	0 to 200/2000mV
Input Frequency	———				50 / 60Hz	
Max continuous Input range	±19.99V	±199.9V	±199.9mV	±1999mV	19.99/199.9V	199.9/1999mV
Over range Indication	"Or" for input > ±19.99V	"Or" for input > ±199.9V	"Or" for input > ±199.9mV	"Or" for input > ±1999mV	"Or" for input > 199.9V	"Or" for input > 1999mV
Resolution	0.01	0.1		1	0.01/0.1	0.1/1
Electrical connection	1 Ø - 2 wire					
Supply Voltage(Vn)	240V AC (± 10%), 50 / 60Hz ; 110V AC (± 10%), 60Hz					
Weight	170gm	170gm	170gm	170gm	170gm	170gm
CE and UL Certification	YES	YES	YES	YES	YES	YES

Accuracy : ±0.5% of full scale over rated operating conditions
Measurement Method : True RMS
Sampling Rate : 3 samples / second
Power consumption : 5VA max.
Measuring input over voltage : 1.5 x Vn continuous, 2 x Vn (3s)
Environmental Conditions
- Temperature : Operating : -10°C to 55°C
  Storage : -20°C to 75°C
- Humidity : Up to 95% RH(non condensing)
- Altitude : Up to 2000 meters
- Pollution degree : II

Installation Category : III (600V)
Protection Class : II
Mounting : Panel mounting

Ordering Information

Note : For CE and UL certified product, Add-CE ; -CU suffix to order code.
For example MV15-DC-20V-CU ; MV305-CE
For 110V Supply add -110V in order code
For example MV15-DC-20V-110V-CU ;
MV305-110V-CE

SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

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

- Do not use the equipment if there is any mechanical damage.
- Ensure that the equipment is supplied with correct voltage.

⚠ CAUTION

1. Read complete instructions prior to installation and operation of the unit.
2. Risk of electric shock.
3. The equipment in its installed state must not come in close proximity to any heating sources, caustic vapors, oils, steam, or other unwanted process by products.

WIRING GUIDELINES

⚠ WARNING

1. To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement.
2. Wiring shall be done strictly according to the terminal layout. Confirm that all connections are correct.
3. Use lugged terminals.
4. To reduce electromagnetic interference use of wires with adequate ratings and twists of the same in equal size shall be made with shortest connections.
5. Layout of connecting cables shall be away from any internal EMI source.
6. Cable used for connection to power source, must have a cross section of 0.5mm² to 2.5mm² (20 to 14AWG; 75°C(min)). These wires shall have current carrying capacity of 6A.
7. Copper cable should be used (Stranded or Single core cable)
8. Before attempting work on device, ensure absence of voltages using appropriate voltage detection device.

INSTALLATION GUIDELINES

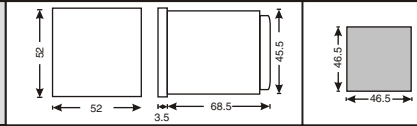
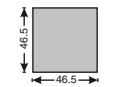
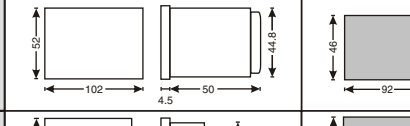
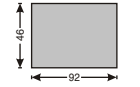
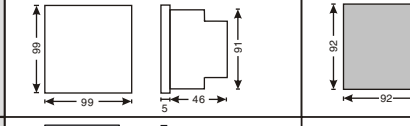
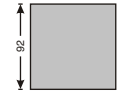
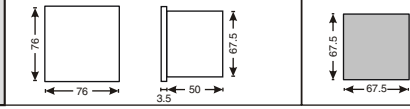
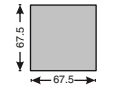
⚠ CAUTION :

1. This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
2. Conductors must not come in contact with the internal circuitry of the equipment or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
4. Before disconnecting the secondary of the external current transformer from the equipment, make sure that the current transformer is short circuited to avoid risk of electrical shock and injury.
5. The equipment shall not be installed in environmental conditions other than those mentioned in this manual.
6. The equipment does not have a built-in-type fuse. Installation of external fuse of rating 275V AC / 0.5Amp for electrical circuitry / battery is highly recommended.

MECHANICAL INSTALLATION

For installing the meter

1. Prepare the panel cutout with proper dimensions as shown below.
2. Push the meter into the panel cutout. Secure the meter in its place by pushing the clamp on the rear side. The clamps must be secured in diagonally opposite slots.
3. For proper sealing, tighten the screws evenly with required torque.
   Terminal screw tightening torque :
   0.68 N-m to 0.79 N-m (6.018 In-Lb to 6.992 In-Lb)
   Screw clamp tightening torque : 0.1N-m (0.885 Lb-inch)

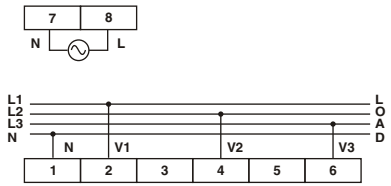
	Outline Dimensions (in mm)	Panel cutout Dimensions (in mm)
MV507		
MV15		
MV305		
MV2307		

MAINTENANCE

1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.
2. Clean the equipment with a clean dry or damp cloth. Do not use any cleaning agent other than water.

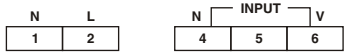
TERMINAL CONNECTIONS

MV2307

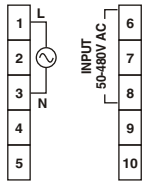


MV15 / MV305 / MV15-AC

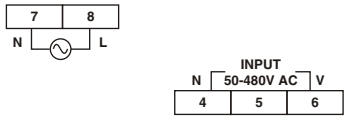
MV205



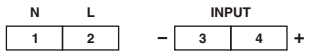
MV507



MV207

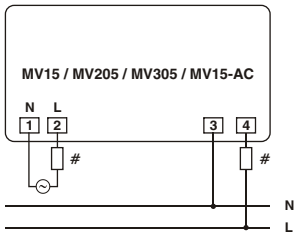


MV15-DC

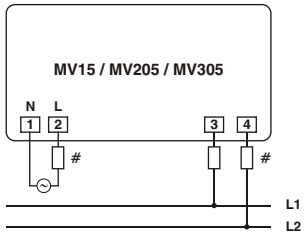


WIRING DIAGRAM

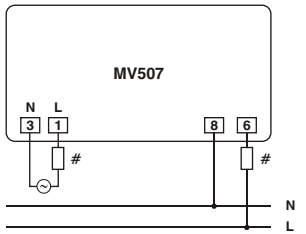
Case 1 for MV15 / MV305 / MV15-AC



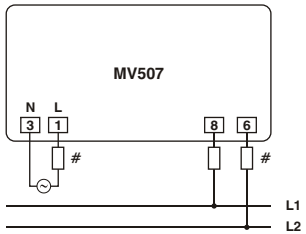
Case 2 for MV15 / MV205 / MV305



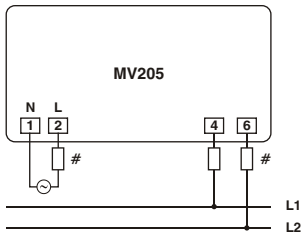
Case 1 for MV507



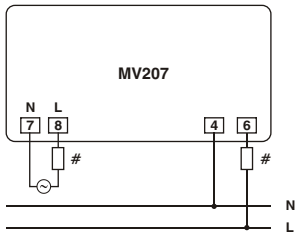
Case 2 for MV507



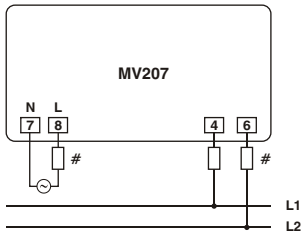
Case for MV205



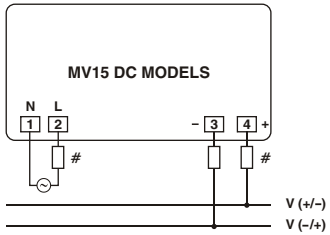
Case 1 for MV207



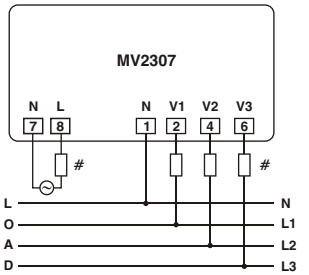
Case 2 for MV207



MV15 DC MODELS



MV2307



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

MODE DESCRIPTION FOR MV2307 :
1) Press (▼) key for 3 sec. to toggle between L-L and L-N pages.
2) Page scrolling can be done with every press of the key.

(Specifications subject to change as development is a continuous process.)

Selec Controls Pvt. Ltd., India

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