Operating Instructions









(48 x 48)

(72 x 72)

(96 x 96)

SPECIFICATIONS										
	AC MODEL									
Product Name	MV15	MV205	MV305	MV507	MV207	MV2307				
Description		3 Ø Digital voltmeter with Selector switch								
Display	3 Dig	3 Digit 7 segment LED display 3 Digit, LCD with Analog style								
Display range		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-3w									
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 : 1.5 x Vn continuous, 2 x Vn (3s)

voltage

#### 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.

Sum 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.

#### A CALITION

- Read complete instructions prior to installation and operation of the unit.
- 2. Risk of electric shock.
- 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**

- To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement.
- Wiring shall be done strictly according to the terminal layout. Confirm that all connections are correct.
- 3. Use lugged terminals.
- To reduce electromagnetic interference use of wires with adequate ratings and twists of the same in equal size shall be made with shortest connections.
- Layout of connecting cables shall be away from any internal EMI source.
- Cable used for connection to power source, must have a crosssection 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)
- Before attempting work on device, ensure absence of voltages using appropriate voltage detection device.

### INSTALLATION GUIDELINES

## A CAUTION :

- 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.
- 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.
- 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.
- 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.
- 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

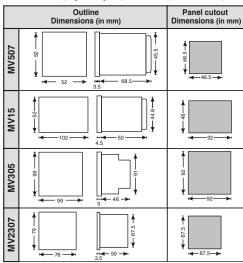
For installing the meter

- Prepare the panel cutout with proper dimensions as shown below.
- 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.
- 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)

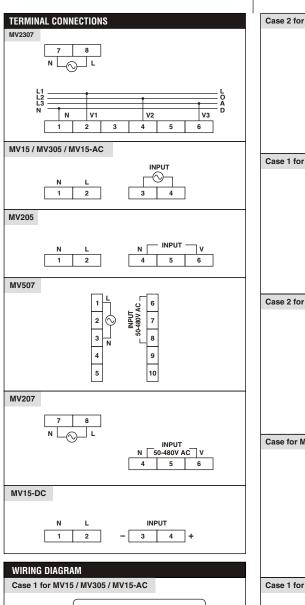
Screw clamp tightening torque: 0.1N-m (0.885 Lb-inch)

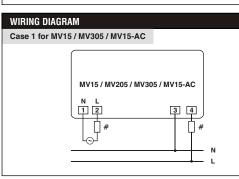


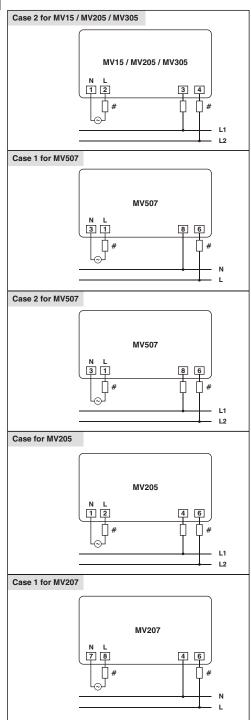
## MAINTENANCE

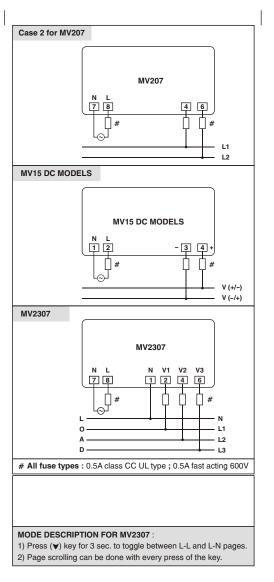
- The equipment should be cleaned regularly to avoid blockage of ventilating parts.
- Clean the equipment with a clean dry or damp cloth.Do not use any cleaning agent other than water.

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

# Selec Controls Pvt. Ltd., India

Factory Address :

EL-27/1, Electronic Zone, TTC Industrial Area, MIDC, Mahape, Navi Mumbai - 400 710, INDIA.

Tel. No.: +91-22-28476443 / 1882

Fax No.: +91-22-28471733 | Toll free: 1800 227 353 | Website: www.selec.com | Email: sales@selec.com

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