OP557-V01

FEATURES

- Compact PLC with built-in HMI
- Windows based user friendly software for ladder programming and HMI configuration
- 2 Line x 16 character LCD Display
- RS485 based communicating with MODBUS RTU Protocol

PRODUCT CONFIGURING TABLE

	MM3032-2-0-0-230V	MM3032-2-0-0-24V
Power Supply	180-270VAC, 50Hz	18-30V AC/DC
Display	2 Line x 16 Characters Font Size 5 x 7mm, LCD (Back light)	
No. Of Keys	8 (6 user configurable)	
Digital Inputs	8	
Digital Output	6 (Relay)	
Analog Inputs	2 Input ; Current (0-20 mA)	1 Input ; Current (0-20 mA) 1 Input ; NTC sensor
Analog Output	1 Output: 0-10V	—
IO Expansion Port	—	
Communication Port	1 port: RS485- Slave	
Protocol	1.Modbus RTU	
Order Code	**MM3032-2-0-0-230V**	**MM3032-2-0-0-24V**

SPECIFICATIONS

DIGITAL INPUT

Input Type	PNP		
Input Voltage Range	5-21 vdc (abs.max. : 30VDC) (MM3032-2)		
Response Time	Programmable from 1 to 255ms from Front End (Default 10ms; Also depends on ladder execution time)		
Isolation	No Isolation		
No. of Input Channels	8 Inputs DI0 to DI7		
No. of fast Input Channels	1 inputs FC0 - DI0 & DI1 - Rate / Totalizer		
Operating Modes	Unidirectional / Bidirectional / Quadrature / Dual Uni Modes		
Max Speed	**Input no**	**Operating Mode**	**Frequency**
	DI0, DI1	Uni / Bi / Dual Uni	5kHz (MM3030-2)
Minimum Rate Measured	0.06Hz		
Maximum Count	32 bits		

ANALOG SECTION	MM3032-2-0-0-230V	MM3032-2-0-0-24V
No. of Channels	2 input (AI 0, AI 1)	
Sensor Type	Current (0-20mA)	Current (0-20mA) & NTC
Resolution	12 bit	
Input impedance in signal range	100Ω	
Analog input error at 25˚C	0.25% of full scale ± 1˚C	
Conversion Time	100ms	
Protection against polarity inversion	Yes	
Channel isolation	Yes	

ANALOG OUTPUT	MM3032-2-0-0-230V
No. of Channels	1
Output Type	Voltage (0-10V)
Resolution	14 bit
Conversion Time	10 msec
Linearity Error	0.25%

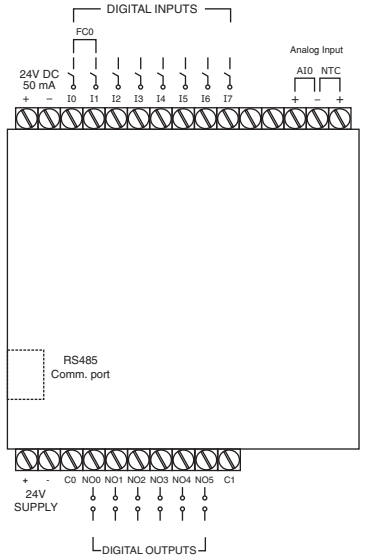
OUTPUT SECTION	MM3032-2-0-0-230V & MM3032-2-0-0-24V
Relay Contact Rating	5A (Resistive@ 230VAC)
Isolation	2.5kV

ENVIRONMENTAL CONDITIONS	
Operating Temperature	**Operating** : 0 to 55˚C
Storage	-20 to 70˚C
Humidity (non-condensing)	95% RH

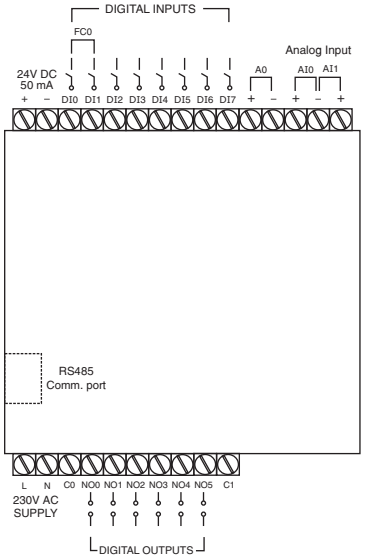
MECHANICAL SPECIFICATION	
Mounting	Panel mounting and Din rail Mounting
Front Bezel	99 x 99 mm
Side View	62 x 90.5 mm
Panel Cutout	92 x 92 mm
Din Rail	35 mm
Weight (approx.)	350 gms

TERMINAL CONNECTIONS

MM3032-2-0-0-24V



MM3032-2-0-0-230V



SAFETY PRECAUTIONS

This manual is meant for personnel involved in wiring, installation, operation and routine maintenance of the equipment. All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure operator and instrument safety. Any misuse may impair the protection provided by the equipment.

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

CAUTION : Risk of electric shock.

INSTALLATION INSTRUCTIONS

CAUTION :

1. This equipment, being built-in-type, normally becomes a part of the main control panel and the terminals do not remain accessible to the user after installation.
2. Conductors must not come in contact with the internal circuitry of the equipment else it may lead to a safety hazard that may endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between the power source and supply terminals to facilitate power 'ON' or 'OFF' function.
4. The equipment shall not be installed in environmental conditions other than those specified in this manual.
5. Since this equipment forms part of the main control panel, its output terminals get connected to the host equipment. Such equipment shall also comply to EMI / EMC and safety requirements like CE standard procedure.
7. Thermal dissipation of equipment is met through ventilation holes provided on housing of equipment. Obstruction of these ventilation holes may lead to a safety hazard.
8. The output terminals shall be loaded strictly as per the values/range specified by the manufacturer.

ELECTRICAL PRECAUTIONS DURING USE

Electrical noise generated by switching of inductive loads can create momentary disruption, erratic display, latch up, data loss or permanent damage to the instrument.

To reduce noise :

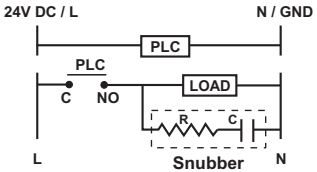
A) Use of MOV / Snubber circuit across load / Contactors of the unit and snubber circuits across the load are recommended.

1. MOV Part no.: AP-MOV-03
2. Snubber Part no.: APRC-01.

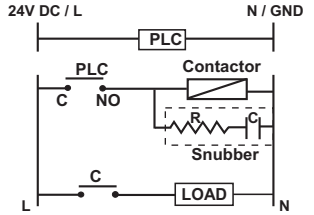
CAUTION :

NOTE : Below mentioned diagram is applicable only for 230V Relay Outputs.

TYPICAL CONNECTIONS FOR LOADS :
For load current < 0.5A



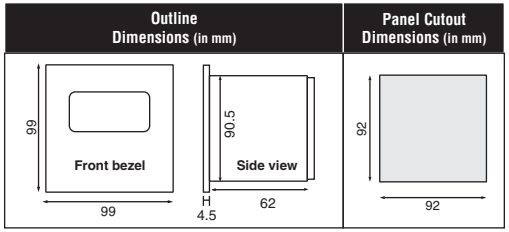
For bigger loads use interposing relay/contactor



NOTE : Use snubber as shown above to increase life of internal relay.

B) Use separate shielded wires for inputs.

MECHANICAL INSTALLATION



For installing the controller

1. Prepare the panel cutout with proper dimensions as shown above.
2. Remove the clamp from the PLC.
3. Fix the unit into the cutout. Insert the clamp from both sides and tighten the screws.

CAUTION

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

EMC Guidelines:

1. Use proper input power cables with shortest connections and twisted type.
2. Layout of connecting cables shall be away from any internal EMI source.

MAINTENANCE

1. To avoid blockage of ventilation holes, clean the equipment regularly using a soft cloth.
2. Do not use Isopropyl alcohol or any other organic solvents for cleaning.

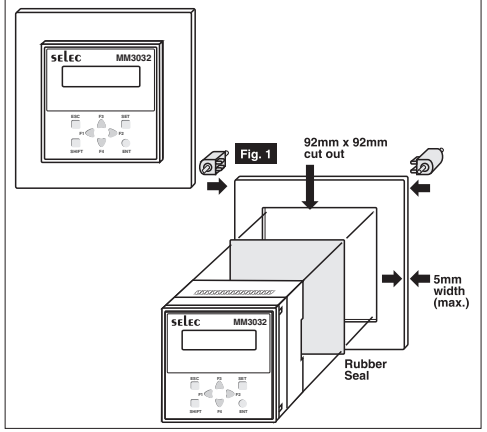
WIRING INSTRUCTIONS

CAUTION

1. To prevent risk of electric shock, power supply to the equipment must be kept OFF while wiring.
2. Terminals and electrically charged parts must not be touched when the power is ON.
3. Wiring shall be done strictly according to the terminal layout provided in the operating manual.
4. To eliminate electromagnetic interference use short wire with adequate ratings and twists of equal size.
5. The power supply connection cable must have a cross section of 1sq.mm or greater and insulation capacity of atleast 1.5KV.

PANEL MOUNTING

Fig. 2



1. Before you begin, note that the mounting panel cannot be thicker than 5 mm (0.197").
2. Make a panel cut-out measuring 92mm x 92mm (3.622" x 3.622").
3. Slide the controller into the cut-out, ensuring that the rubber seal is in place.
4. Push the 2 mounting brackets into their slots on the sides of the controller as shown in Fig. 1.
5. Tighten the bracket screws against the panel. Hold the bracket securely against the unit while tightening the screw.
6. When properly mounted, the controller is squarely situated in the panel cut out as shown in Fig. 2.

SERVICE DETAILS

This device contains no user serviceable parts and requires special equipment and specialized engineers for repair.
Please contact service center for repair on the following numbers :

Toll free : 1800 227353 (BSNL/MTNL subscribers only)
Others : 91-22-40394200 / 40394202

NO WARRANTY ON UNIT DAMAGED DUE TO WRONG POWER SUPPLY.

(Specifications are subject to change, since development is a continuous process)

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