OP277-V03

selec

EM368 / EM368-C

Operating Instructions

selec EM368

96 x 96

FEATURES

- 8 digit LCD with backlight display
- User programmable CT primary, CT Secondary, PT primary and PT Secondary
- User programmable network selection
- Memory retention
- Password protected energy reset
- Potential free Pulse output for energy
- 100 to 240V AC auxiliary supply
- RS485 communication (MODBUS Protocol)

SPECIFICATIONS

DISPLAY
8 digit LCD display, Height 10.5mm

LCD INDICATIONS
INT - Integration of energy
X10 - Resolution is 10
REV - Reverse connected CT or Voltage wiring
⇌ - Communication in progress
⎍ - Pulse output

WIRING INPUT
3 Ø - 4 wire, 3 Ø - 3 wire, 2 Ø - 3 wire and 1 Ø - 2 wire system

RATED INPUT VOLTAGE
11 to 300V AC (L-N) ;
19 to 519V AC (L-L) ; Installation Category III (600V)
UL Approval :
11 to 277V AC (L-N) ;
19 to 480V AC (L-L) ; Installation Category III (600V)

FREQUENCY RANGE
45-65Hz

RATED INPUT CURRENT
Nominal 5A (Min-11mA, Max-6A)

CT PRIMARY
1A / 5A to 10,000A (Programmable for any Value)
Note : 1A to 10,000A if CT secondary is 1 else CT primary is 5A to 10,000A

CT SECONDARY
1A or 5A (programmable)

PT PRIMARY
100V to 500kV (Programmable for any value)

PT SECONDARY
100 to 500V AC (L-L) (Programmable for any value)

BURDEN
0.5 VA@5A per phase

MEASUREMENT
Total active Energy (kWh)
Total reactive Energy (kVArh)
Total apparent Energy (kVAh)
Total active power (kW)
Total reactive power (kVAr)
Power factor (Individual and Average)
Note : All energies are resettable

MEASUREMENT RANGE
99999999

POWER CONSUMPTION
Less than 8VA

ENVIRONMENTAL CONDITIONS
- Indoor use
- Altitude of up to 2000 meters
- Pollution degree II

Temperature : Operating : -10°C to 55°C
Storage : -20°C to 75°C
Humidity : Up to 85% non-condensing

PROTECTION CLASS : II

MOUNTING : Panel mounting

WEIGHT
EM368 : 302gms
EM368-C : 312gms

OUTPUT
Pulse Output : Voltage range : 24V DC max.
Current capacity : 100mA max.
Pulse Width : 100ms ± 5ms.

ORDER CODE INFORMATION

PRODUCT	SUPPLY	CERTIFICATION	
		CE	cULus LISTED
EM368 / EM368-C	100 to 240V AC, -15% +12%, 50 / 60Hz, (±5%)	——	——
EM368-CE / EM368-C-CE	100 to 240V AC, -15% +12%, 50 / 60Hz, (±5%)	■	——
EM368-CU / EM368-C-CU	100 to 240V AC, -15% +12%, 50 / 60Hz, (±5%)	■	■
Installation Category III			

ACCURACY

Measurement	Accuracy
Active Power	±1%
Reactive Power	±1%
Power factor	±1%
Average Power factor	±1%
Active energy	Class 1
Reactive energy	±1%
Apparent energy	±1%

RESOLUTION

PT Ratio x CT Ratio	kWh	Pulse
<15	0.01K	0.01K
<150	0.1K	0.1K
<1500	1K	1K
<15000	0.01M	0.01M
<150000	0.1M	0.1M
<1500000	1M	1M
≥1500000	10M	10M

NOTE :

1) For power, resolution is automatically adjusted
2) For power factor, resolution is 0.01
3) INT blinks after every 5 seconds, if load on any one of three phase is present.

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, oils, steam, caustic vapors 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 0.5mm^2 to 2.5mm^2 (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.

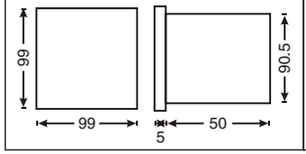
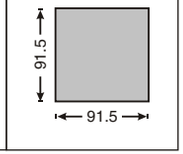
INSTALLATION GUIDELINES

⚠ 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

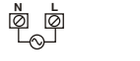
For installing the meter
1. Prepare the panel cutout with proper dimensions as shown below.
2. Push the meter into the panel cutout. Secure the meter in its place by fitting the clamp on the rear side. Fit clamps on both sides in diagonally opposite location for optimum fitting.
3. For proper sealing, 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)
	

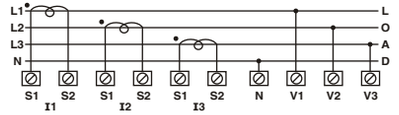
MAINTENANCE
1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.
2. Clean the equipment with a clean dry or damp cloth. Do not use any cleaning agent other than water.

TERMINAL CONNECTIONS

EM368 (-CE/CU)



CONNECTIONS DIAGRAM



EM368-C (-CE/CU)



CONNECTIONS DIAGRAM

