selec **MX300-CE**
Operating Instructions



SPECIFICATIONS

DISPLAY
1 row of 4 digits to show electrical parameters
7 segment LED display
Digit integrated with parameter units.

INDICATIONS
K : Kilo
M : Mega
V : Voltage
A : Current
W : Active power
VAr : Reactive power
VA : Apparent power
PF : Power factor
Hz : Frequency

RATED INPUT VOLTAGE
20 to 300V AC (L-N)
34 to 519V AC (L-L)
Installation Category II

FREQUENCY RANGE
45-65 Hz

RATED INPUT CURRENT
Nominal 5A AC (Min-40mA, Max-7A)

BURDEN
0.1 VA@5A

CT PRIMARY
5A to 9999A
(Programmable for any Value)

CT SECONDARY
5A

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

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

DISPLAY UPDATE TIME
1 sec. for all parameters

DISPLAY SCROLLING
Automatic or Manual (Programmable)

POWER CONSUMPTION
Less than 8VA

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

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

MOUNTING
Panel mounting

WEIGHT
192gms

ORDER CODE INFORMATION

Product	Supply	Certification
MX300-CE	85V AC to 300V AC	CE

ACCURACY

Measurement	Accuracy
Voltage V_{L-N}	±0.5% of Full scale
Current	±0.5% of Full scale
Frequency	±0.1% For L-N voltage : ≥50V For L-L voltage : ≥87V
Power Factor	±0.01
Active Power	1%
Reactive Power	2%
Apparent power	---

NOTE : 1) For Voltage, Current and Power resolution is automatically adjusted.
2) For power factor, resolution is 0.001

POWER RESOLUTION

Power Value (W)	Display (W)
<10k	9999
<100k	99.99k
<1M	999.9k
<10M	9999k
<100M	99.99M
<1000M	999.9M
<10000M	9999M

SAFETY PRECAUTIONS

All safety related codifications, symbols andinstructions 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 1mm^2 to 2.5mm^2 (20 to 14AWG ; 75°C(min)).These wires shall have current carrying capacity of 7A.

INSTALLATION GUIDELINES

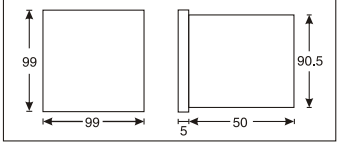
CAUTION :

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 276V AC / 0.5Amp for electrical circuitry / battery is highly recommended.

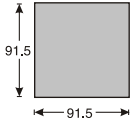
MECHANICAL INSTALLATION

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)

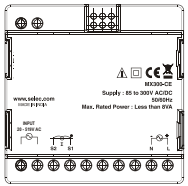


MAINTENANCE

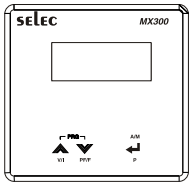
1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.
2. Clean the equipment with a clean dry or damp cloth.

Do not use any cleaning agent other than water.

TERMINAL CONNECTIONS



FRONT PANEL DESCRIPTION



ONLINE PAGE DESCRIPTION

Press these keys to read the parameters.
Units of corresponding parameter on display will automatically glow.

1) Key-1	▲
2) Key-2	▼
3) Key-3	↵

KEY PRESS	PAGE DESCRIPTION	
	1P2W	
▲	Page1	Displays Phase Voltage
▲	Page2	Displays Phase Current
▼	Page1	Displays Power Factor
▼	Page2	Displays Frequency
↵	Page1	Displays Active Power
↵	Page2	Displays Reactive Power
↵	Page3	Displays Apperant Power

SERIAL NUMBER DESCRIPTION

Press ▲ key for 10 sec. to display 8 digit serial number for 5 sec.

CONFIGURATION

There are three dedicated keys with ▲ ▼ ↵ symbol

Note : Setting should be done by professional after going through this user manual and having understood the application situation.

For the configuration setting mode :

- Use ▲▼ key for 3 sec to enter and exit from configuration menu.
- Use ▲ key to increment the value.
- Use ▼ key to edit the value and shift the cursor for next digit to edit .
- Press ↵ key to save the value and go to next page.

Config. page	Function	Range or Selection	Factory Setting
1	Password	0000 to 9998	1000
2	Change Password	No / Yes	No
3	New Password	0000 to 9998	1000
4	CT Secondary	5A	5
5	CT Primary	Upto 9999A	5
6	PT Secondary	100V to 500V	350
7	PT primary	100V to 500kV	350
8	Factory Default	No / Yes	No

PT PRIMARY SETTING

Example :- PT.PR 123456	
"K" ON	123 will get displayed on first screen
"K" OFF	456 will get displayed on second screen

* Use "▼" to shift cursor as well as to toggle between two screens.

AUTOMATIC / MANUAL MODE DESCRIPTION

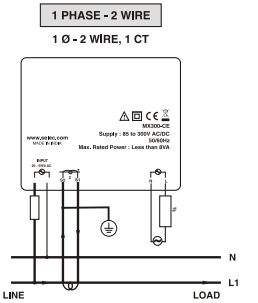
Press ↵ key for 5 seconds to toggle between Automatic and Manual mode. But DIP switch configuration must be kept at 000 to turn this function ON.

Note : By default unit operates in automatic mode. In automatic mode online pages scroll automatically at the rate of 5 seconds per page. In automatic mode when any key is pressed, unit temporarily switches to manual mode and the appropriate page is displayed, also if any key is not pressed for 5 sec, unit resumes automatic mode.

DIP SWITCH CONFIGURATION

Key configuration			Parameter
Key-1	Key-2	Key-3	
0	0	0	Auto / Manual mode
0	0	1	Voltage
0	1	0	Current
0	1	1	Power factor
1	0	0	Active power
1	0	1	Reactive power
1	1	0	Apperant power
1	1	1	Frequency

TYPICAL WIRING DIAGRAM



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

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

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