

# 1 PHASE METER



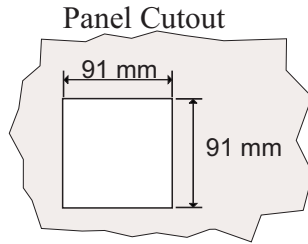
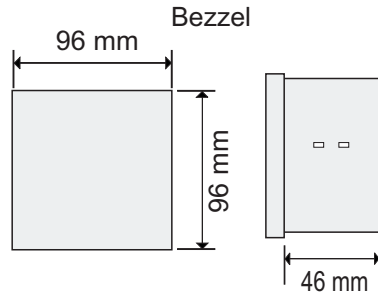
## FEATURES

- State of Art Microcontroller Based Design
- 1 Line 4 Digit ultra bright LED display
- Site programmable CT ratio( Primary & Secondary)
- Site programmable PT ratio ( Primary & Secondary)
- True RMS measurement
- Password Protection
- RS 485 Computer Interface (optional)
- Harmonics ( Individual & Total )
- Auto Ranging
- Universal Aux. Supply

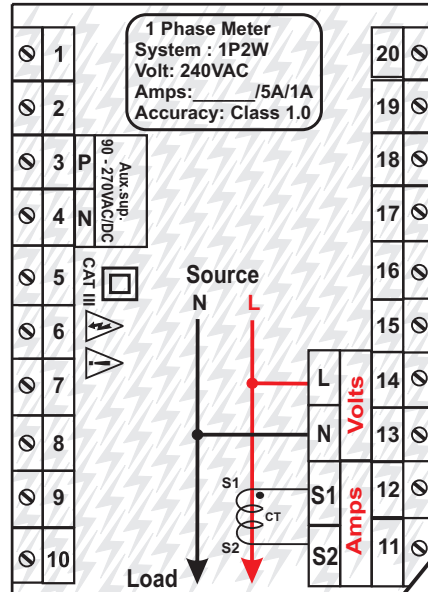
## PARAMETERS

- ✓ Active Energy
- ✓ Harmonics - Volts - Total ( THDV )
- ✓ Harmonics - Amps - Total ( THDI )
- ✓ Load Hour
- ✓ Volts
- ✓ Amps
- ✓ Power Factor
- ✓ Active Power(kW)
- ✓ Reactive Power(kVAr)
- ✓ Apparent Power(kVA)
- ✓ Frequency

## MECHANICAL DIMENSION





## Electrical Wiring / Connection Diagram



## DISPLAY PAGES

Page	Symbol	PARAMETERS
1	V L-N	Voltage (L-N)
2	A	Amps
3	Hz	Frequency
4	W	Watts (Active Power)
5	Var	VAr ( Reactive Power)
6	VA	VA ( Apparent Power)
7	PF	Power Factor
8	E	Active Energy
9	uThd	Harmonics - Voltage - THDV
10	iThd	Harmonics - Current - THDI
11	t	load Hour


## Manual Scroll Mode :

In this mode the display shows parameter of the selected page .  
The parameter of next / previous page can be viewed by pressing  or  key.



## Auto Scroll Mode :

In this mode the display shows parameter of page1 then scroll to page2 and so on.

## Display Freeze Mode :

This mode can be activated by pressing  key during normal meter operation.

When this key is pressed the display will remain on the parameter it is currently displaying.

In this mode  key can be pressed to see the other parameters of this page only , but to scroll to next page parameters first you have to come out of freeze mode. Pressing  key once again will bring the meter out of freeze mode.

## SPECIFICATIONS

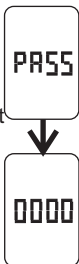
Input	: 1 phase 2 wire
Volts	: Range 5-300V
Amps	: 0.015 to 6.00Amp
Burden	: 0.2 VA max. per phase for Voltage & Current Inputs 3 VA max. on Aux. Supply
Aux. Supply	: 90 - 270 VAC / DC
Display	: 1 Line x 4 Digit {0.56 Inches 7 Segment LED Display}
Computation	: True RMS
Frequency	: 45 Hz - 65 Hz.
Ambient	: -10 to 55°C
Storage	: -20 to 75°C
Humidity	: < 95 % Non-condensing
Weight	: 280gms
Dimensions	: 96 X 96 X 46 mm ( L x W x D)
Panel Cutout	: ( 90 <sup>+1.0</sup> )mm X ( 90 <sup>+1.0</sup> ) mm
Mounting	: Flush Mounting with side clamps.

## Measurement range :

Volts	: 10 - 500VAC L-L
Amp	: 0.015A - 6.00Amp AC
Display update	: 1Sec
Hz	: 45.0 to 65.0HZ
Resolution	: 0.1 for Energy , Auto ranging for other parameters.
Accuracy	: ±0.5% of full scale for voltage, current, power, power factor.
Frquency	: ±0.1% for Hz
Energy	: class 1.0

# PROGRAMMING

1) Press **Prog** key to enter Program Mode.  
 2) The Meter Shows Password Entry Page { PASS and then 0000}.  
 Enter the Password using **▲** Key to increment count & **▼** Key to move to the next digit. After entering the password press **Prog** key, if the pass word is correct, the unit will enter the program mode.



Default factory set password is 2000

3) Following Programming menus are available

Menu	Symbol	Description
1	Addr	Unit Address for RS485 communication.
2	PTPr	To set PT Primary
3	PTSC	To set PT Secondary
4	CTPr	To Set CT Primary
5	CTSC	To set CT Secondary
6	CLrE	To clear Energy
7	nPAS	To set New Password
8	BAUD	To set baud rate
9	PARr	To Select Parity
10	CLrE	To Clear Load Hour Timer
11	SCrL	To Select Auto / Manual Scroll

Select the Menu to be edited using **▲** & **▼** Keys and press **Prog** Key to enter respective menu.

Menu 1: **(Unit Address for RS485 communication)**  
 when **Prog** Key is pressed the display shows { 001}.  
 The address can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.



Menu 2: **(To set PT Primary)**  
 when **Prog** Key is pressed the display shows 0001 (Present value)  
 The ratio can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.  
 For eg. If PT ratio is 22KV / 110V you can enter primary value as 0200 and secondary value 0001.



Menu 3: **(To set PT Secondary)**  
 when **Prog** Key is pressed the display shows 0001 (Present value)  
 The ratio can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.



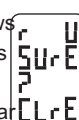
Menu 4: **(To set CT Primary)**  
 when **Prog** Key is pressed the display shows 0001 (Present value)  
 The value can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.



Menu 5: **(To set CT Secondary)**  
 when **Prog** Key is pressed the display shows 0001 (Present value)  
 The value can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.



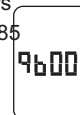
Menu 6: **(To clear Energy)**  
 when **Prog** Key is pressed the display shows CLrE. Press **Prog** key once again, unit reconfirms by asking "ru SUR E ? CLrE" By pressing **Prog** Key once again the Import energies will get clear or press **ESC** Key to come out.



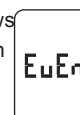
Menu 7: **(To set New Password)**  
 when **Prog** Key is pressed the display shows 0000 (Current password)  
 The password can be edited using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value.



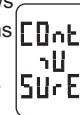
Menu 8: **(To set the Baud Rate)**  
 when **Prog** Key is pressed the display shows 9600 current Baud rate The Baud Rate for RS485 communication can be set using **▲** & **▼** Keys. After entering desired value press **Prog** key to save value. Maximum Baud rate 9600.



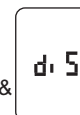
Menu 9: **(To set the Parity)**  
 when **Prog** Key is pressed the display shows E u E n . The Even / odd / none parity can be set using **▲** Key. After entering desired value press **Prog** key to save value.



Menu 10: **(To Reset ON TIMER)**  
 when **Prog** Key is pressed the display shows COnt. Press **Prog** key once again, unit reconfirms by asking "COnt ru SurE " By pressing **Prog** Key once again the ON TIMER will get clear or press **ESC** Key to come out.



Menu 11: **(To select Auto / Manual Scroll)**  
 when **Prog** Key is pressed the display shows d I S / En.  
 You can select "dIS" to disable Auto scroll or select "EN" to enable Auto scroll using **▲** & **▼** Keys.  
 After entering desired value press **Prog** key to save value.



Press **ESC** Key to come out of Program MODE.

## 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.

If there is physical damage to the unit then do not use it.

Read complete instruction prior to installation and operation of the unit.

## Wiring Guidelines :

- 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 with shortest connection. Confirm that all connection are correct.

## Caution :

- 1) To ensure the safe operation of unit , check the wiring and connections.