

# MULTIFUNCTION METER



## FEATURES

State of Art Microcontroller Based Design

3 Line 4 Digit ultra bright LED display

Site programmable CT ratio( Primary & Secondary)

Site programmable PT ratio ( Primary & Secondary)

True RMS measurement

Password Protection

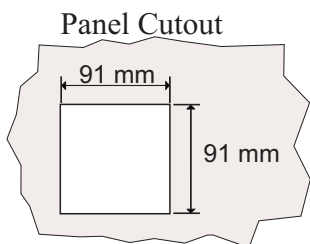
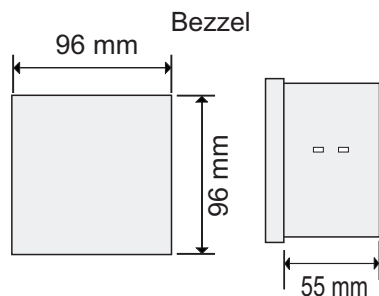
RS 485 Computer Interface

Total Harmonic Distortion

Auto Ranging

Universal Aux. Supply

## MECHANICAL DIMENSION



## PARAMETERS

- ✓ Volts : R Y (Phase - Phase)  
YB (Phase - Phase)  
BR (Phase - Phase)  
  
RN (Phase - Neutral)  
YN (Phase - Neutral)  
BN (Phase - Neutral)
- ✓ Amps : R Phase  
Y Phase  
B Phase
- ✓ Power Factor : R Phase  
Y Phase  
B Phase
- ✓ Active Power : R Phase  
(KW) Y Phase  
B Phase
- ✓ Apparent Power : R Phase  
(KVA) Y Phase  
B Phase
- ✓ Reactive Power : R Phase  
(KVar) Y Phase  
B Phase
- ✓ Frequency : System
- ✓ Active Energy
- ✓ Harmonics - Volts - Total ( THDV phase wise )
- ✓ Harmonics - Amps - Total ( THDI phase wise )
- ✓ Load Hour

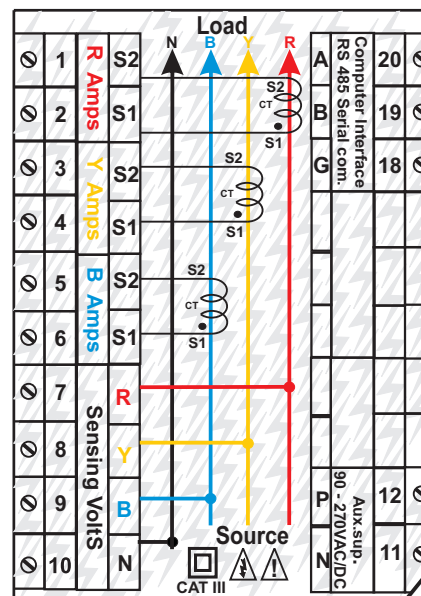
## DISPLAY PAGES

Page	Symbol	PARAMETERS
1	V L-L	Voltage (L-L) RY, YB, BR
2	V L-N	Voltage (L-N) RN, YN, BN
3	A	Amps R, Y, B
4	Hz	Frequency
5	W	Watts (Active Power) R, Y, B
6	Var	VAr ( Reactive Power) R, Y, B
7	VA	VA ( Apparent Power) R, Y, B
8	PF	Power Factor R, Y, B
9	E	Active Energy
10	uLhd	Harmonics - Voltage - THDV (V led / flashes )
11	iLhd	Harmonics - Current - THDI ( I led / flashes )
12	t	Load Hour (timer)

## Notes :

When the V or A Led flashes the reading are of THDV or THDI when V or A led is steady ON it indicates voltage or current reading.

## Electrical Wiring / Connection Diagram



## SPECIFICATIONS

- Input : 3 phase 4 wire / 1 phase 2 wire
- Volts : Range 10-500v
- Amps : 0.015 to 6.00Amp
- Burden : 0.2 VA max. per input for Voltage & Current Signals  
3 VA max. on Aux. Supply
- Aux. Supply : 90 - 270 VAC / DC
- Display : 3 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 55 mm ( L x W x D)
- Panel Cutout : ( 90 <sup>+1.0</sup> <sub>-0</sub> )mm X ( 90 <sup>+1.0</sup> <sub>-0</sub> ) 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
- Frequency : ±0.1% for Hz
- Energy : class 1.0

PROGRAMMING

1) Press key to enter Program Mode.  
2) The Meter Shows Password Entry Page {USR PASS 0000}.

Enter the Password using Key to increment count & Key to move to the next digit. After entering the password press 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	Pt - r	To set PT Primary & Secondary Value
3	Ct - r	To set CT Primary & Secondary Value
4	CLrE	To clear Energy
5	nPAS	To set New Password
6	bAud	To set baud rate & odd / even parity
7	CLrL	To Reset Timer
8	SCrL	To Select Auto / Manual Scroll

Select the Menu to be edited using Keys and press Key to enter respective menu.

Menu 1:(Unit Address for RS485 communication)  
when Key is pressed the display shows {Addr 001}.

The address can be edited using & Keys. After entering desired value press key to save value.

Menu 2:(To set PT Primary & Secondary)  
when Key is pressed the display shows {Pt P 0001 0001}.

The ratio can be edited using & Keys. After entering desired value press key to save value.

The first 4 digits are for PT primary & next 4 digits are for PT secondary  
For eg. If PT ratio is 22KV / 110V you can enter value as 0200 0001.

Menu 3:(To set CT Primary & Secondary)  
when Key is pressed the display shows {Ct P 0001 0001}.

The value can be edited using & Keys. After entering desired value press key to save value.

The first 4 digits are for CT primary & next 4 digits are for CT secondary

Menu 4: (To clear Energy)  
when Key is pressed the display shows CLrE. Press key once again, unit reconfirms by asking " SUR E ? CLrE" By pressing Key once again the energies will get clear or press Key to come out.

Menu 5:(To set New Password)  
when Key is pressed the display shows "CHG PASS 2000".

The password can be edited using & Keys. After entering desired value press key to save value.

Menu 6 : (To set the Baud Rate & Parity)  
when Key is pressed the display shows "baud". The Baud Rate for RS485 communication can be set using Key.Using key you can select baud / parity menu. The Even / odd / none parity can be set using Key. After entering desired value press key to save value. Maximum Baud rate 9600.

Menu 7: (To Reset Load TIMER)  
when Key is pressed the display shows CLrt. Press key once again, unit reconfirms by asking " ru SurE ? " By pressing Key once again the load TIMER will get clear or press Key to come out.

Menu 8: (To select Auto / Manual Scroll)  
when Key is pressed the display shows ScrL.

You can select "dIS" to disable Auto scroll or select "EN" to enable Auto scroll using & Keys.After entering desired value press key to save value

Press 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.