

3 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 THDV & THDI

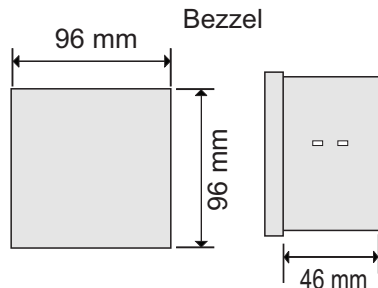
Auto Ranging

Universal Aux. Supply

PARAMETERS

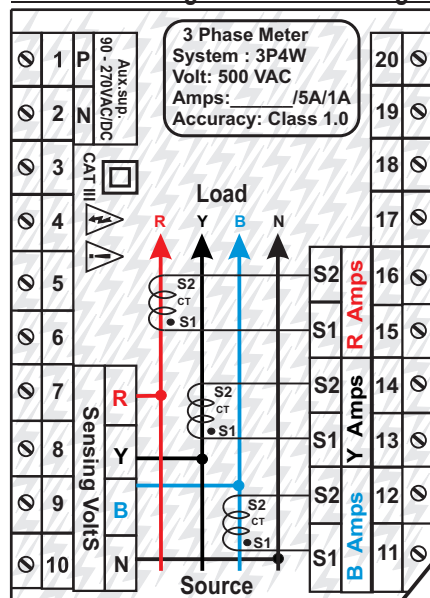
- ✓ Active Energy
- ✓ Harmonics - Volts - Total (THDV Phase wise & Avg)
- ✓ Harmonics - Amps - Total (THDI Phase wise & Avg)
- ✓ Load Hour

MECHANICAL DIMENSION



✓ Volts	: R Y (Phase - Phase) YB (Phase - Phase) BR (Phase - Phase) Average (Phase - Phase) RN (Phase - Neutral) YN (Phase - Neutral) BN (Phase - Neutral) Average (Phase - Neutral)
✓ Amps	: R Phase Y Phase B Phase Average
✓ Power Factor	: R Phase Y Phase B Phase System
✓ Active Power (KW)	: R Phase Y Phase B Phase Total
✓ Apparent Power (kVA)	: R Phase Y Phase B Phase Total
✓ Reactive Power (kVAr)	: R Phase Y Phase B Phase
✓ Frequency	: System

Electrical Wiring / Connection Diagram



DISPLAY PAGES

Page	Symbol	PARAMETERS
1	V L-L	Voltage (L-L) RY, YB, BR & Average
2	V L-N	Voltage (L-N) RN, YN, BN & Average
3	A	Amps R, Y, B & Total
4	Hz	Frequency
5	W	Watts (Active Power) R, Y, B & Total
6	Var	VAr (Reactive Power) R, Y, B & Total
7	VA	VA (Apparent Power) R, Y, B & Total
8	PF	Power Factor R, Y, B & System
9	RE	Active Energy
10	uLhd	Harmonics - Voltage - THDV Phase wise & Avg.
11	iLhd	Harmonics - Current - THDI Phase wise & Avg.
12	t	Load Hour

Manual Scroll Mode :

In this mode the display shows all parameters of the selected page one after another.
The parameters of next / previous page can be viewed by pressing or key.

Auto Scroll Mode :

In this mode the display shows all parameters of page1 one after another , then scroll to page2 and shows all parameters of page 2 one after another 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.

Note :

3 Parameters : When this option is selected in menu 12 the following parameters will be displayed as

Page Phase1 Phase2 Phase3

4 Parameters : When this option is selected in menu 12 the following parameters will be displayed as

Page Phase1 Phase2 Phase3 Avg / Total

1 Parameter : When this option is selected in menu 12 the following parameters will be displayed as

Page Avg / Total

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 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 ⁺¹ ₋₀) mm X (90 ⁺¹ ₋₀) 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

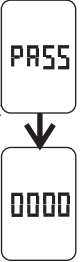
1) Press key to enter Program Mode.
2) The Meter Shows Password Entry Page { PASS and then 0000}.
Enter the Password using Key to increment count & Key to move to the next digit. After entering the password press key, if the pass word is correct, the unit will enter the program mode.
Default factory 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 Primary
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	PAR	To Select Parity
10	CLrE	To Clear Load Hour Timer
11	SCrL	To Select Auto / Manual Scroll
12	dYrD	To select the number of display rows
13	USPd	To select next parameter update speed

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 { 001}.

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



Menu 2: (To set PT Primary)
when Key is pressed the display shows 0001 (Present value)
The ratio can be edited using & Keys. After entering desired value press 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 Key is pressed the display shows 0001 (Present value)
The ratio can be edited using & Keys. After entering desired value press key to save value.



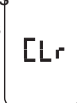
Menu 4: (To set CT Primary)
when Key is pressed the display shows 0001 (Present value)
The value can be edited using & Keys. After entering desired value press key to save value.



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



Menu 6:(To clear Energy)
when Key is pressed the display shows CLrE. Press key once again, unit reconfirms by asking " CLr EnErgy fi " By pressing Key once again the energy will get clear or press Key to come out.



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



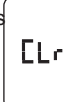
Menu 8 : (To set the Baud Rate)
when Key is pressed the display shows 9600 current Baud rate The Baud Rate for RS485 communication can be set using key. After entering desired value press key to save value. Maximum Baud rate 9600.



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



Menu 10: (To Reset ON TIMER)
when Key is pressed the display shows CLr. Press key once again, unit reconfirms by asking "CLr Hour t l fi " By pressing Key once again the ON TIMER will get clear or press Key to come out.



Menu 11: (To select Auto / Manual Scroll)
when Key is pressed the display shows d l S / En.
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.



Menu 12: (To select display rows)
when Key is pressed the display shows 1/3/4. (current display mode)
You can select 1/3/4 Parameter display mode using key . After entering desired value press key to save value.



Menu 13 : (To select next parmeter update speed)
when Key is pressed the display shows AUG (average) , SIO (slow) ,uSL0 (very slow) uFAS(very fast) ,FASt (fast)
You can select any one parameter update rate. This rate will determine the speed of change of displayed parameters within a page .for example in Page3 Amp reading (IR , IY , IB , I Avg can be seen) The time to change from IR to IY is determined by USPd (update speed)
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.