

POWER ANALYZER

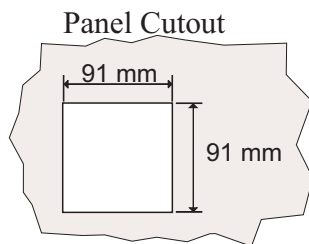
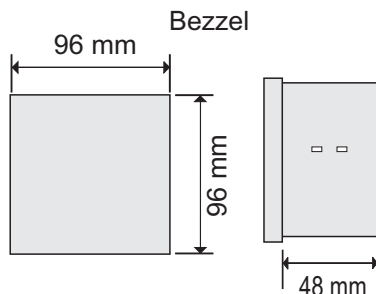
FEATURES

- State of Art Microcontroller Based Design
- 4 Line 4 Digit ultra bright LED display
- Site settable CT ratio(Primary & Secondary)
- Site settable PT ratio (Primary & Secondary)
- True RMS measurement
- Password Protection
- Maximum demand with Relay contact
- Harmonics (Individual & Total)
- Auto Ranging
- Universal Aux. Supply

PARAMETERS

- ✓ 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 : R Phase (KW)
Y Phase
B Phase
Total
- ✓ Reactive Power: R Phase (KVA)
Y Phase
B Phase
Total
- ✓ Frequency : System
- ✓ Phasor Angle (Phase wise)
- ✓ Phase Angle (Phase wise)
- ✓ Import Maximum Demand
- ✓ Import Peak Maximum Demand
- ✓ Export Maximum Demand
- ✓ Export Peak Maximum Demand
- ✓ Import Active Energy
- ✓ Import Reactive -Inductive Energy
- ✓ Import Reactive -Capacitive Energy
- ✓ Import Apparent Energy
- ✓ Export Active Energy
- ✓ Export Reactive -Inductive Energy
- ✓ Export Reactive -Capacitive Energy
- ✓ Harmonics - Volts - Total (THD)
- ✓ Harmonics - Amps - Total (THD)
- ✓ Harmonics - Volts - Individual (upto 31st)
- ✓ Harmonics - Amps - Individual (upto 31st)
- ✓ Load Hour - Import
- ✓ Load Hour - Export
- ✓ ON Hour (for which the meter is on with / without load)

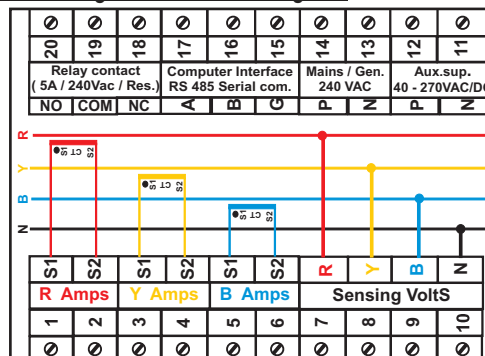
MECHANICAL DIMENTION



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	PHr	Phasor Angle between Voltage in degrees
4	A	Amps R, Y, B & Total
5	Hz	Frequency
6	W	Watts (Active Power) R, Y, B & Total
7	Var	VAr (Reactive Power) R, Y, B & Total
8	VA	VA (Apparent Power) R, Y, B & Total
9	PF	Power Factor R, Y, B & System
10	PHI	Phase Angle between volt & Amps in degrees
11	I m d	Import Maximum Demand
12	I P m d	Import Peak Maximum Demand
13	E m d	Export Maximum Demand
14	E P m d	Export Peak Maximum Demand
15	I RE	Import Active Energy
16	I r LE	Import Reactive - Inductive Energy
17	I r CE	Import Reactive - Capacitive Energy
18	I RPE	Import Apparent Energy
19	ERE	Export Active Energy
20	E r LE	Export Reactive - Inductive Energy
21	E r CE	Export Reactive - Capacitive Energy
22	ERPE	Export Apparent Energy
23	u t h d	Harmonics - Voltage - THD
24	i t h d	Harmonics - Current - THD
25	O n h t	ON Hour (duration for which the meter is ON with /without load)
26	L d t I	Load Hour (timer) - Import
27	L d t E	Load Hour (timer) - Export

Electrical Wiring / Connection Diagram



SPECIFICATIONS

- Input : 3 phase 4 wire
Volts : Range 40 - 470V for 415 V model
Amps : 0.10 - 6.0 Amps
Freq : Through R phase (Internally)
- Burden : 0.2 VA max. per input for Voltage & Current Signals
3 VA max. on Aux. Supply
- Aux. Supply : 90 - 270 VAC / DC
- Display : 4 Line x 4 Digit
(0.39 Inches 7 Segment LED Display)
- Accuracy : Class 1.0 for Volt / Ammeter / KW/KVa
For Hz : 0.1 % of full scale
For PF : +/- 2 electrical degrees
- Resolution : 0.1 for Frequency Meter
(Auto Ranging for other parameters)
- Computation : True RMS
Frequency : 45 Hz - 55 Hz.
Ambient : 0 - 50°C
Humidity : < 95 % Non-condensing
Weight : 380gms
Dimensions : 96 X 96 X 48 mm (L x W x D)
Panel Cutout : (90^{+1.0}mm X (90^{+1.0}mm)
Mounting : Flush Mounting with side clamps.

TEST CERTIFICATE

Type : POWER ANALYZER

Accuracy : Class 1.0 for V & A ; 0.1% of FS for Hz
Accuracy TEST:

VOLTAGE		CURRENT		FREQUENCY
10%	100%	10%	100%	100%
+/- 1.0%	+/- 1.0%	+/- 1.0%	+/- 1.0%	+/- 1.0%
OK	OK	OK	OK	OK

Power Factor		Watts		KVa
10%	100%	10%	100%	100%
+/- 1.0%	+/- 1.0%	+/- 1.0%	+/- 1.0%	+/- 1.0%
OK	OK	OK	OK	OK

Note:

A) For Digital Readouts the error is computed in counts.

- Class 1.0 = ±1% of Full Scale + 1 count
- Class 0.5 = ± 0.5% of Full Scale + 1 count

Tested By.: Mr.RAVI
Date : 26 / 03 /2013
B.C. : 1213 / 01 / PA

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. {factory prog. password 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	CLr I	To clear Import Energy
5	CLr E	To clear Export Energy
6	nPAS	To set New Password
7	mdtY	To select MD type
8	md It	To set MD Integration time
9	md-I	To set MD Threshold for Import
10	md-E	To set MD Threshold for Export
11	CPd I	To clear Peak MD Import
12	CPd E	To clear Peak MD Export
13	bAUD	To set baud rate & odd / even parity
14	COnt	To Reset ON Timer
15	CLt I	To Reset Import Timer
16	CLt E	To Reset Export Timer
17	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.



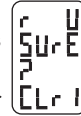
Menu 2:(To set PT Primary & Secondary) when Key is pressed the display shows Pt-r {Pt P 0001 & PtS 0001}. The value can be edited using & Keys. After entering desired value press key to save value.



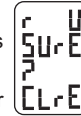
Menu 3:(To set CT Primary & Secondary) when Key is pressed the display shows Ct-r {Ct P 0001 & CtS 0001}. The value can be edited using & Keys. After entering desired value press key to save value.



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



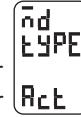
Menu 5: (To clear Export Energy) when Key is pressed the display shows CLrE. Press key once again, unit reconfirms by asking "ru SUR E ? CLrE" By pressing Key once again the Export energies will get clear or press Key to come out.



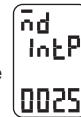
Menu 6: (To set New Password) when Key is pressed the display shows "nPAS". The password can be edited using & Keys. After entering desired value press key to save value.



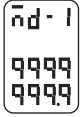
Menu 7:(To select Maximum Demand (MD) Type) when Key is pressed the display shows "mdtY". By Pressing Key ACt (Active power) or APP(Apparent Power) can be selected. After selecting desired type press key to save.



Menu 8: (To set MD Integration time) when Key is pressed the display shows "mdIt". The time can be edited using & (time is in minutes). After entering desired value press key to save value.



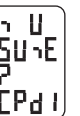
Menu 9: (To set MD threshold for Import) when Key is pressed the display shows "md-I". The threshold can be edited using & Keys. After entering desired value in KW / KVA press key to save value. Once this threshold crosses Relay will Energise for 30 Seconds.



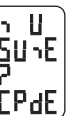
Menu 10 : (To set MD threshold for Export) when Key is pressed the display shows "md-E". The threshold can be edited using & Keys. After entering desired value in KW / KVA press key to save value. Once this threshold crosses Relay will Energise for 30 Seconds.



Menu 11 : (To clear Peak MD Import) when Key is pressed the display shows CPdI. Press key once again, unit reconfirms by asking "ru SUR E ? CPdI" By pressing Key once again the Peak MD import will get clear or press Key to come out.



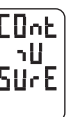
Menu 12 : (To clear Peak MD Export) when Key is pressed the display shows CPdE. Press key once again, unit reconfirms by asking "ru SUR E ? CPdE" By pressing Key once again the Peak MD Export will get clear or press Key to come out.



Menu 13 : (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. The Even / odd / none parity can be set using Key After entering desired value press key to save value.



Menu 14: (To Reset ON TIMER) when Key is pressed the display shows COnt. Press key once again, unit reconfirms by asking "COnt ru SurE" By pressing Key once again the ON TIMER will get clear or press Key to come out.



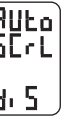
Menu 15: (To Reset IMPORT TIMER) when Key is pressed the display shows COnt. Press key once again, unit reconfirms by asking "CLtI ru SurE" By pressing Key once again the IMPORT TIMER will get clear or press Key to come out.



Menu 16: (To Reset EXPORT TIMER) when Key is pressed the display shows COnt. Press key once again, unit reconfirms by asking "COnt ru SurE" By pressing Key once again the EXPORT TIMER will get clear or press Key to come out.



Menu 17: (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.



Press Key to come out of Program MODE.