

DUAL KWH



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
- ✓ Frequency : System
- ✓ 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
- ✓ Export Apparent Energy
- ✓ Load Hour - Import
- ✓ Load Hour - Export
- ✓ ON Hour(for which the meter is on with / without load)

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	PF ●	Power Factor R, Y, B & System
8	I RE	Import Active Energy
9	I r LE	Import Reactive - Inductive Energy
10	I r CE	Import Reactive - Capacitive Energy
11	I RPE	Import Apparent Energy
12	E RE	Export Active Energy
13	E r LE	Export Reactive - Inductive Energy
14	E r CE	Export Reactive - Capacitive Energy
15	E RPE	Export Apparent Energy
16	OnhE	ON HOUR (duration for which the meter is ON with /without load)
17	LdE I	Load Hour (timer) - Import
18	LdE E	Load Hour (timer) - Export

SPECIFICATIONS

- Input : 3 phase 4 wire / 1 phase 2 wire
- Volts : Range 10-500V AC L-L
- Amps : 0.015 to 6.00Amp AC
- Burden : 0.2 VA max. per phase for Voltage & Current Inputs
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}
- 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^{+1.0})mm X (90^{+1.0})mm
- Mounting : Flush Mounting with side clamps.

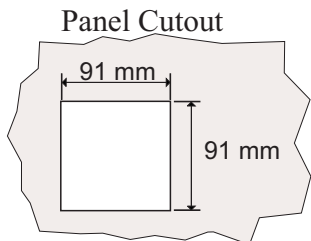
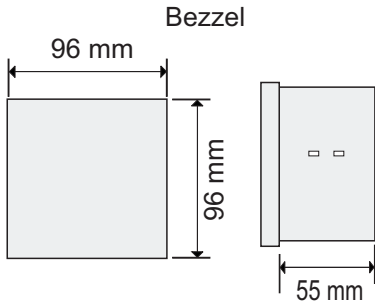
Measurement range :

- 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

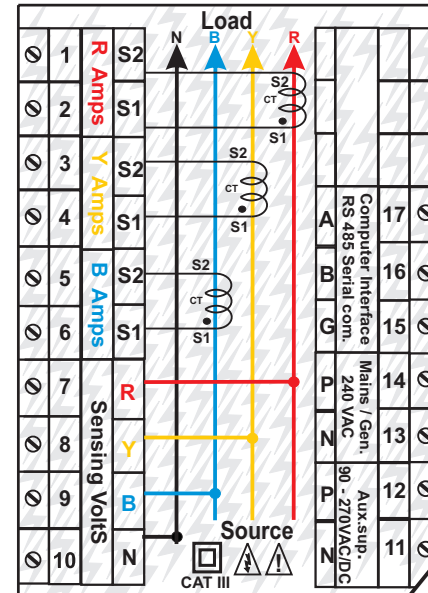
FEATURES

- State of Art Microcontroller Based Design
- 4 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
- Auto Ranging
- Universal Aux. Supply

MECHANICAL DIMENSION



Electrical Wiring / Connection Diagram



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

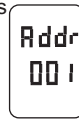
Menu	Symbol	Description
1	Addr	Unit Address for RS485 communication.
2	Pt-r	To set PT Primary & Secondary Value
3	Ct-r	To set CT Primary & Secondary Value
4	CLr I	To clear Import Energy
5	CLr E	To clear Export Energy
6	nPAS	To set New Password
7	bAUd	To set baud rate & odd / even parity
8	COnt	To Reset ON Timer
9	CLt I	To Reset Import Timer
10	CLt E	To Reset Export Timer
11	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 & Pt S 0001}.

The value 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 value as 0200 0001.



Menu 3: (To set CT Primary & Secondary)

when Key is pressed the display shows Ct-r {Ct P 0001 & Ct S 0001}.

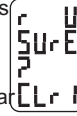
The value can be edited using & Keys. After entering desired value press key to save value.



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

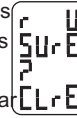
or press Key to come out.



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 Import energies will get clear

or press Key to come out.



Menu 6: (To set New Password)

when Key is pressed the display shows "CHG PASS 0000".

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



Menu 7 : (To set the Baud Rate & Parity)

when Key is pressed the display shows "baud". The Baud Rate for RS485 communication can be set using by.

Using by you can select Baud / Parity menu. The Even / odd / none parity can be set using Key.

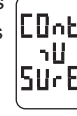
After entering desired value press key to save value. Maximum Baud rate 9600.



Menu 8: (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 9: (To Reset IMPORT TIMER)

when Key is pressed the display shows CLtI. 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 10: (To Reset EXPORT TIMER)

when key is pressed the display shows CLtE. Press key once again, unit reconfirms by asking "CLtE ru SurE " By pressing Key once again the EXPORT TIMER will get clear or press Key to come out.

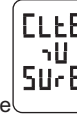
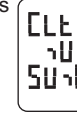
Menu 11: (To select Auto / Manual Scroll)

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.

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Press Key to come out of Program MODE.

Notes :

- 1) 230VAC input has to be given across terminal marked M/G to put the meter in Export/ DG mode for dual source operators.
- 2) Ensure S1,S2,CT connectors & R,Y,B sequence is correct. In case S1,S2 is reverse watt reading will appear with a negative sign.
- 3) When M/G input is available watt readings will become negative to indicate now DG/ Export mode is active.
- 4) The meter can also be put in DG/ Export mode by sending a broadcast command on RS485 Bus (see protocol details). In this case 230VAC need not be applied on the M/G terminals.

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.