

MULTI FUNCTION METER

DT-108 / DT-108DG / DT-108 1P
DT-3600 / DT-3600kWh / DT-3600 1P
DT3600 ALARM

- 4x3 rows, Red LED display.
- Universal Voltage Input & Current.
- Universal auxiliary supply.
- CT ratio / PT ratio on site programmable.
- User programmable password.
- Auto scaling & scrolling.
- True RMS measurement.
- RS -485 communication RTU-modbus.



DT-108



DT-3600
kWh

TECHNICAL SPECIFICATIONS

Parameter	Range
Accuracy	Class 1
Measurement	True RMS 3 phase 4 wire / 3 phase 3 wire / 1 phase 2 wire
Input Voltage PT ratio Burden	50 - 500V ...45....65Hz 11kv,22kv, 66kv/110v 0.2VA Max. per phase
Input Current CT ratio Burden	50mA - 6Amps 5A - 9999Amps 0.2VA Max. per phase
Auxiliary Supply Burden	230 V AC 40- 70Hz Default 180 - 270 V AC 3VA Max
Display resolution	4x3 rows for instantaneous value. 8digit for integrated energy value. Display updates in 1sec.
Humidity Operating Temperature Storage Temperature	5% to 95% non condensing -10°C to +55°C -25°C to +70°C
Dimension Bezel Panel Cutout Mounting	96x96mm - 54mm Depth. 90°x 90°mm. Flush mounting with side clamps.
Relay Rated	Common/No output 5A ,250 VAC

OPTIONAL FEATURES

- RS -485 communication RTU-modbus.
- Single relay output .

DISPLAY PARAMETERS

Parameters	Description	Icon
Voltage	RN,YN,BN (Phase & Neutral) Average (Phase & Neutral)	VIn Avg
Voltage	RY,YB,BR (Phase & Phase) Average (Phase & Phase)	VLL Avg
Current	R,Y,B Average of R,Y,B	Amps Avg
Frequency(system)	R,Y,B with respect to N Average of R,Y,B	Hz Avg
Power Factor(system)	R,Y,B phase wise Average of R,Y,B	PF Avg
Active Power	R,Y,B phase wise Total of R,Y,B	kW or MW Total
Apparent Power	R,Y,B phase wise Total of R,Y,B	kVA or MVA Total
Reactive Power	R,Y,B phase wise Total of R,Y,B	kVAR or MVAR Total
Energy	Active Energy (DT-3600kWh, DT-108 & DT-108DG) Apparent Energy(DT-108) Active Energy DG*(DT-108DG)	kWh kVAh kWh

TEST CERTIFICATE

S.No.	TEST	TEST CONDITION	STATUS																																
1	Insulation	a)Voltage Circuit and Earth b)Current Circuit and Earth	Complied																																
2	H V Test	2kV for 1min a)Voltage Circuit and Earth b)Current Circuit and Earth	Complied																																
3	Accuracy Test	<table border="1"> <tr> <th>Parameter</th><th>100%</th><th>50%</th><th>5%</th></tr> <tr> <td>PF</td><td>Less than 1°elect.</td><td></td><td></td></tr> <tr> <td>kW</td><td>Within 0.5%</td><td></td><td></td></tr> <tr> <td>kVA</td><td>Within 0.5%</td><td></td><td></td></tr> <tr> <td>V</td><td>Within 0.5%</td><td></td><td></td></tr> <tr> <td>A</td><td>Within 0.5%</td><td></td><td></td></tr> <tr> <td>F</td><td>Less than 0.1Hz</td><td></td><td></td></tr> <tr> <td>kWh</td><td>Within 0.5%</td><td></td><td></td></tr> </table>	Parameter	100%	50%	5%	PF	Less than 1°elect.			kW	Within 0.5%			kVA	Within 0.5%			V	Within 0.5%			A	Within 0.5%			F	Less than 0.1Hz			kWh	Within 0.5%			Complied
Parameter	100%	50%	5%																																
PF	Less than 1°elect.																																		
kW	Within 0.5%																																		
kVA	Within 0.5%																																		
V	Within 0.5%																																		
A	Within 0.5%																																		
F	Less than 0.1Hz																																		
kWh	Within 0.5%																																		

Ref Calibration standards

1. MTE SWS 1.3 class0.1

S.No.39822

12 months WARRANTY

Tested by :

Approved by :

Date:

RS-485 MODBUS PORT

Optional, when supplied RS-485 computer communication port.

REGISTER MAP

Data Bits :8

Baud rate : 9600Bps

Stop bits : 1

Parity : None(half duplex) Isolation : 2KV

Data type : Float

S.No	Parameters	Address
1	CT multiplier	41001
2	PT multiplier	41003
3	kWh multiplier	41005
4	Active Energy kWh	41007
5	Apparent Energy kVAh	41009
6	Volts VLN-L1	41011
7	Volts VLN-L2	41013
8	Volts VLN-L3	41015
9	Volts VLL-L1L2	41017
10	Volts VLL-L2L3	41019
11	Volts VLL-L3L1	41021
12	Amps I1	41023
13	Amps I2	41025
14	Amps I3	41027
15	Active Power kW-L1	41029
16	Active Power kW-L2	41031
17	Active Power kW-L3	41033
18	Power Factor PF1	41035
19	Power Factor PF2	41037
20	Power Factor PF3	41039
21	Frequency Hz	41041
22	Re active Power kVar1	41085
23	Re active Power kVar2	41087
24	Re active Power kVar3	41089
25	Apparent Power kVA1	41091
26	Apparent Power kVA2	41093
27	Apparent Power kVA3	41095

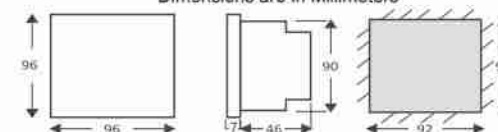
* DG ENERGY WILL DISPLAY ON 41009 ADDRESS WHEN DG IS CONNECTED.

MECHANICAL INSTALLATION

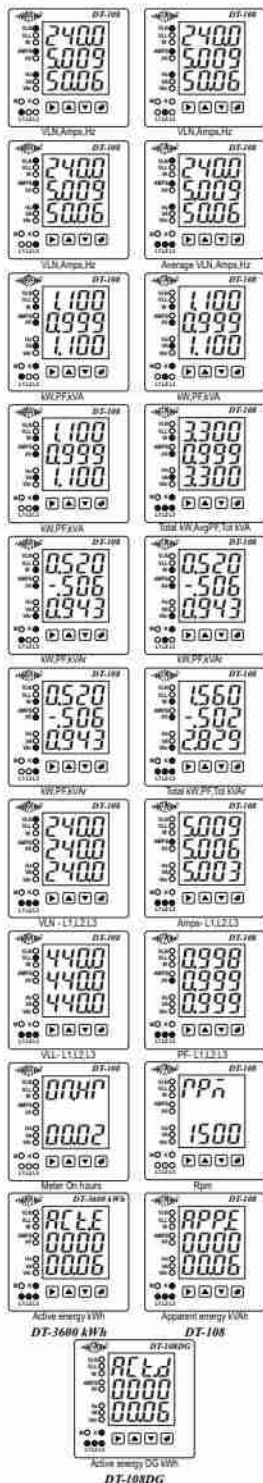
For Installing the meter

- Prepare panel cutout with proper dimension as shown below

Dimensions are in Millimeters



- Push the meter into the panel cutout, Secure the meter in its place by pushing the clamp on the rear side. The screws of panel of the clamp, must be in the farthest forward slot.
- For proper sealing, tighten the screws evenly with required torque.



KEY FUNCTIONS

Programming Mode - Into setup
RUN Mode - Into main screen

- ▶ SET UP key, To go into setup menu and exit from programming mode. SET-UP key to scroll the cursor from one side to programming mode.
- ▲ UP key, To scroll the value 0 to 9 to programming mode. UP key, To scroll the pages in Run Mode. UP key, Press 7 seconds continuous to scroll ON.
- ▼ DOWN key, To scroll the value 9 to 0 to programming mode. DOWN key, To scroll the pages to Run Mode. DOWN key, Press 7 seconds continuous to scroll OFF.
- ▶ ENTER key, To complete the operation to programming mode, press enter ENTER key, To scroll the Energy parameters to Run Mode.

ALARM CONFIGURATION

BRIEF: Single relay used to set 4 abnormal condition only.
Over VLn, Under VLn, Over Amps, Under Amps,
Over VLn, Under VLn, Over Hz, Under Hz
Over Amps, under Amps, Over Hz, Under Hz,
and we can set all conditions are Over or Under.

Press ▶ SET UP key on Run Mode for about FIVE seconds continuously, the unit will therefore enter into Programming Mode such as shown below.

PASS

1. On pressing ▲ key four time, the display will prompt **ALARM**.
2. It is a single relay output for alarm. Here we can set **ALARM** trip point to relay output, for VLn, Current, Hz
3. Press enter key to indicates the display **ALARM**.
4. On pressing enter key again, the display indicates **VLN** screen on the display. Suppose, we required current or Hz, Press ▲ key to select the desired parameters. Once the desired parameters selected, Then Press enter key to Set the TRIP value of the selected parameters. Set TRIP value, by pressing ▶, ▲, ▼ keys until desired value is received.
5. Once TRIP value selected, Press enter key to display indicates **OVER**. It means over limit relay selected. Then Press ENTER key to conform or Press ▼ key to select under **UNDER**.
6. Once OVER or UNDER selected, Press ENTER key to go **AUTO**. It means relay works **Automatically**. Suppose, we require to works relay **MANUAL**, Press ▲ key to, select Manual operation **MAN**.
7. Once Auto or Manual selected, Then Press enter key to Set the ON delay of relay. Set ON delay, by pressing ▶, ▲, ▼ keys until desired value is received.
8. Once ON delay selected, Then Press enter key to Set the OFF delay of relay. Set OFF delay, by pressing ▶, ▲, ▼, keys until desired value is received.

WARNING GUIDELINES

- ⚡ To prevent risk of electric shock power supply to the equipment must be kept off while doing the wiring.
- ⚡ Wiring shall be done strictly according to the terminal layout confirm that all connections are correct.
- ⚡ Use lugged Terminals.
- ⚡ To eliminate electromagnetic interference use of wires with adequate rating & twists of the same in equalize shall be made.
- ⚡ Cable used for connection to power source, must have cross section of 1.5mm. These wires shall have carrying capacity of 5A.

MENU'S

PASS	Password	CLPE	Clear energy
CTPP	CT primary	SUPE	Sure to confirm
CTSC	CT secondary	Id	RS-485 Meter ID
PTPP	PT primary	ONHP	Meter On hours
PTSC	PT secondary		

PROGRAMMING MODE

Press ▶ SET-UP key on Run mode for about 2seconds continuously, the unit will therefore enter into Programming mode such as shown below.

PASS Then enter the password, which was set at your end. The default factory password is 0000. Once password entered, then Press ▲ UP key to set CTPR, CTSC, PTPR, PTSC, Clear energy value, Reset demand and minimum, maximum value, alarm set, RS 485 ID set and User password.

SETTING CT RATIO

Once password entered, then Press ▲ UP key to set CT Primary value. The display indicates

CTPP Then press enter, the display indicates the default factory set value **0005**. Here set CT primary value by pressing ▶, ▲, ▼ keys, until desired CT primary value received, Press enter key to complete the operation. Then Press ▶ set up key to back into RUN mode.

SETTING PT RATIO

Once password entered, then Press ▲ UP key 2 time to set PT Primary. The display indicates

PTPP Then press enter, the display indicates the default factory set value **0220**. Here set PT primary value by pressing ▶, ▲, ▼ keys, until desired PT primary value received, Press enter key to complete the operation.

Then Press ▲ key to set PT secondary value. The display indicates **PTSC**

Then press enter, the display indicates the default factory set value **0220**. Here set PT secondary value by pressing ▶, ▲, ▼ keys, until desired PT secondary value received, Press enter key to complete the operation. Then Press ▶ set up key to back into RUN mode.

CLEAR ENERGY VALUE

Once password entered, then Press ▲ UP key 5 time to clear all energy value, Then display indicates

CLPE On pressing enter key once, the display indicates

SUPE Then Press enter key again, all energy value will be cleared. Then Press ▶ set up key to back into RUN mode.

SETTING METER ID FOR RS-485

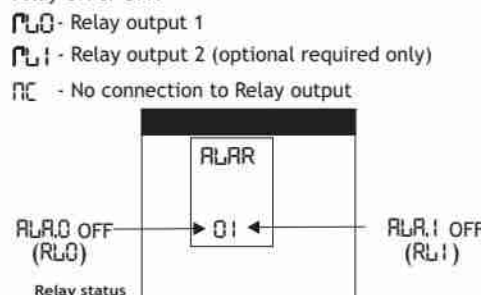
Once password entered, then Press ▲ UP key 6 time to set RS-485 meter ID, Display indicates

Id Then press enter, the display indicates the default value factory set 001. Here set RS-485 meter ID by pressing ▶, ▲, ▼ keys, until desired value is received, Press enter key to complete operation. Then Press ▶ key to back into Run mode.

SETTING METER PASSWORD

Once password entered, then Press ▲ UP key 7 time to set meter password, The display indicates **PASS**

PASS Then press enter, the display indicates the default factory set value **0000**. Here set password by pressing ▶, ▲, ▼ keys, until desired value is received, Press enter key to complete operation. Then Press ▶ setup key to back into run mode.



10. Once done, Press UP key to go to **RLA.1, RLA.2, RLA.3**. Do setting procedure same as **RLA.0** Or else, Press ▶ key twice to return into Run Mode.

11. In display indicates 1 means alarm relay ON. 0 means alarm relay OFF.

VOL - Voltage VLn
FPE - Frequency
UNDER - Under Limit
OFF.0 - OFF delay
MAN - Forcefully On
CUP - Current
OVER - Over Limit
ON.0 - ON delay
AUTO - It works automatic

CONNECTION DIAGRAM

DT-108 / DT-108DG / DT-3600 / DT-3600kWh

