



**PROGRAMMING MANUAL  
MULTI FUNCTION METER  
DT-108 / DT108DG/DT-108 1P**

- 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.



**TECHNICAL SPECIFICATIONS**

Parameter	Range
Accuracy	Class 1
Measurement	True RMS 3 phase 4 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 <sup>±1</sup> x 90 <sup>±1</sup> 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)	Vln
	Average (Phase & Neutral)	Avg
Voltage	RY,YB,BR (Phase & Phase)	VLL
	Average (Phase & Phase)	Avg
Current	R,Y,B	Amps
	Average of R,Y,B	Avg
Frequency(system)	R,Y,B with respect to N	Hz
	Average of R,Y,B	Avg
Power Factor(system)	R,Y,B phase wise	PF
	Average of R,Y,B	Avg
Active Power	R,Y,B phase wise	kW or MW
	Total of R,Y,B	Total
Apparent Power	R,Y,B phase wise	kVA or MVA
	Total of R,Y,B	Total
Reactive Power	R,Y,B phase wise	kVAR or MVAR
	Total of R,Y,B	Total
Energy	Active Energy	kWh
	Apparent Energy	kVAh
	Active Energy DG	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	Parameter	100% 50% 5% Complied	
		PF	Less than 1°elect.	Complied
		kW	Within 0.5%	Complied
		kVA	Within 0.5%	Complied
		V	Within 0.5%	Complied
		A	Within 0.5%	Complied
		F	Less than 0.1Hz	Complied
		kWh	Within 0.5%	Complied

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

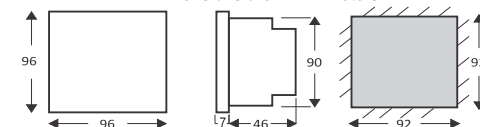
S.No	Parameters	Address
1	CT multiplier	41000
2	PT multiplier	41002
3	kWh multiplier	41004
4	Active Energy kWh	41006
5	Apparent Energy kVAh	41008
6	Volts VLN-L1	41010
7	Volts VLN-L2	41012
8	Volts VLN-L3	41014
9	Volts VLL-L1L2	41016
10	Volts VLL-L2L3	41018
11	Volts VLL-L3L1	41020
12	Amps I1	41022
13	Amps I2	41024
14	Amps I3	41026
15	Active Power kW-L1	41028
16	Active Power kW-L2	41030
17	Active Power kW-L3	41032
18	Power Factor PF1	41034
19	Power Factor PF2	41036
20	Power Factor PF3	41038
21	Frequency Hz	41040
22	Re active Power kVAr1	41084
23	Re active Power kVAr2	41086
24	Re active Power kVAr3	41088
25	Apparent Power kVA1	41090
26	Apparent Power kVA2	41092
27	Apparent Power kVA3	41094

**MECHANICAL INSTALLATION**

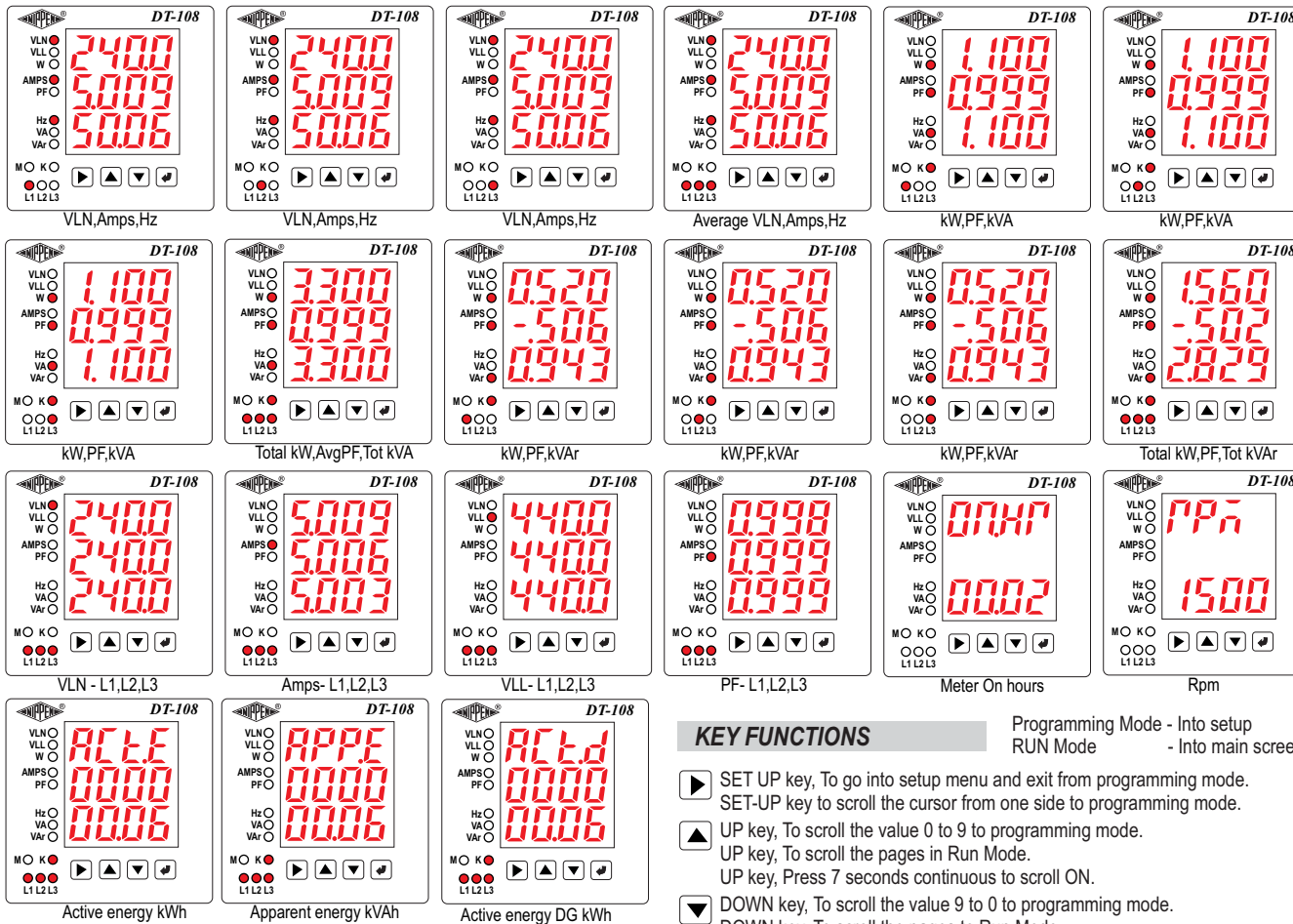
For Installing the meter

- 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.

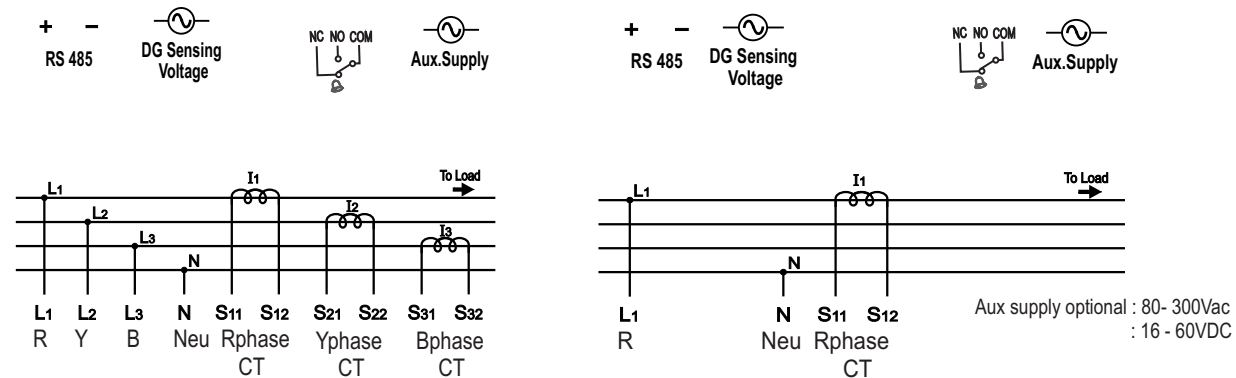


### KEY FUNCTIONS

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.

### CONNECTION DIAGRAM



### MENU'S

PASS	Password	CLPE	Clear energy
CTPR	CT primary	SURE	Sure to confirm
CTSC	CT secondary	Jd	RS-485 Meter ID
PTPR	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

CTPR 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

PTPR 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

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

SURE 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

Jd 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.

Aux supply optional : 80- 300Vac  
: 16 - 60VDC