

TNY Series-Multifunction Panel Meter



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1.0 Introduction :

TNY series meters are compact digital power meter, equipped with customized 4 digit, 3 row alphanumeric display. Three navigator keys & alphanumeric digits simplifies Display & configuration of meter. TNY series are available with accuracy class of 1.0 IEC 62053-21/(Optional 0.5,0.2 IEC- 62053-22) Modbus Communication On RS 485 or RS232.

2.0 Features

- Simultaneous Display of Measured Quantity & Parameter
- Trip Function enables user to have record of integration qty. from a selected time
- Auto scaling of Kilo Giga, Mega and decimal Point
- Password protection for user programmable parameters
- Modbus Communication on RS - 485 or RS232
- Meter / Wiring configuration is field programmable as
Three Phase / Single Phase connection.
- Accuracy Class 1.0 IEC 62053 - 21/ (Optional 0.5;0.2 IEC 62053-22)
- Selectable auto & manual scroll of display
- 18 LEDs (9 in each column) near display
- Poly carbonate body
- IP 65 from front

3.0 Model Selection

Measurement	Parameters	TNY-2010	TNY-2310	TNY-2320	TNY-2330	TNY-2305	TNY-2335	TNY-2340	TNY-2411	TNY-2443	TNY-2200A
Basic											
Voltage	VLL, VLN		■	■	■	■	■	■	■	■	■
Line Current	IR, IY, IB		■	■	■	■	■	■	■	■	■
Frequency	Hz		■	■	■	■	■	■	■	■	■
Average Neutral Current	I Calculated					■	■		■	■	
Phase Angle	PA		■		■		■	■			
Power											
Apparent Power	VA,VA1,VA2,VA3		■					■		■	■
Active Power	W,W1,W2,W3		■	■	■		■	■	■	■	■
Power Factor	PF,PF1,PF2,PF3		■		■		■	■	■	■	■
Integration											
Active Energy	Wh	■		■	■		■	■	■	■	■
Reactive Energy	±Varh										
Power Energy	Vah							■		■	
Run Hour	RnHr						■		■	■	
Load Hour	Ldhr						■			■	
Interrupts	Nos.						■			■	■
Old											
Active Energy	Wh	■		■	■		■	■	■	■	■
Reactive Energy	±Varh										
Power Energy	Vah							■			
Run Hour	RnHr					■	■		■	■	
Load Hour	Ldhr					■	■			■	
Interrupts	Nos.						■			■	■
THD	V&I									■	

4.0 Specification

Accuracy	: Class 1.0 IEC 62053 - 21/ (Optional 0.5;0.2 IEC 62053-22)
Input Voltage	: Vr, Vy, Vb, Vn
Input Voltage Range	: 18-520V (L-L) / 10V-300V (L-N)
Isolation Voltage	: 2000V
Input Current	: Ir, Iy, Ib
Input Current	: 50mA-6A (Accuracy range)
Starting Current	: 1-200mA (programmable)
CT Burden	: 0.2VA max. per phase
Current with stand	: 10A continuous, 50A for 1 Second
Input Frequency	: 40 to 70Hz
Auxiliary Supply	: 35-300V AC/DC
Auxiliary supply burden	: <4VA
Display	: 3 Row 4 Digit (LCD)
Display Scrolling	: Automatic/Manual
Pulse Output Contact Rating	: 50mA (Optional, Max. Pulse width 250+-50ms 24VDC
Communication	: Modbus Comm. on RS-485 or RS-232
CT Primary setting	: 1A to 999kA
CT Secondary setting	: 1A to 10A
PT Primary setting	: 50V to 999kV
PT Secondary setting	: 50V to 999 V

5.0 Integer Flow

V.PRIxA.PRI x1.732	Max Reading	Max Time to Reset the Integrator in Run Hours	Max Time to Overflow Energy at Full Scale
1VA to 100KVA	999999.999K	100 Years	1.3 Years
100KVA to 100MVA	999999.999M	100 Years	1.3 Years
>100MVA	999999.999G	100 Years	Depends Upon Setting

6.0 Auxiliary Supply :

SMPS Supply with input range 35-300V AC/DC. Burden on auxiliary supply is less than 4VA.

7.0 PT Supply :

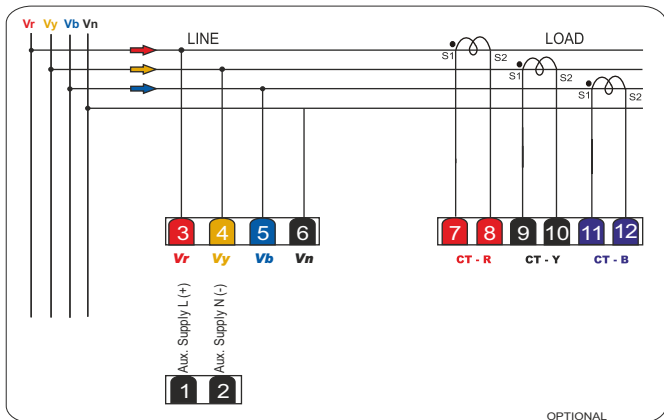
TNY can withstand maximum voltage of upto 1000V. Meter can be configured for 3P-4Wire/1Phase connection. Maximum Burden on PT is Less than 0.1VA

8.0 CT Connection :

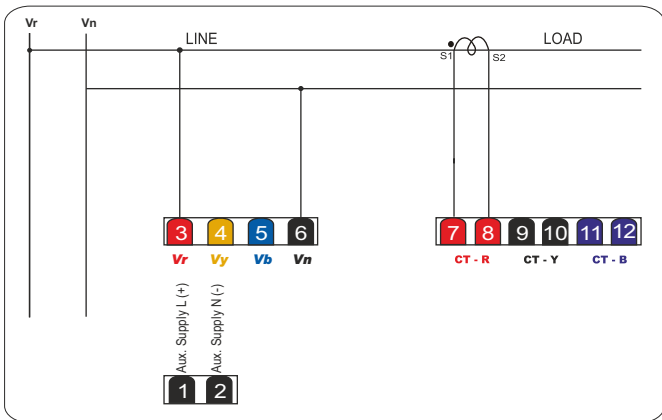
Nominal Current of TNY Meter is 6 Amp. Maximum Continuous Current is 10Amp & Current with stand is 50A for 1 Second. Burden on ct less than 0.2VA

9.0 Wiring Diagrams :

9.1 3-Phase 4-wire connection



9.2 Single phase connection



10.0 Key Functions :

KEY	In EDIT Mode	In Measurement Mode
▲ Increment	Increment the value of selected parameters.	Long push (for 3sec approx for Scroll ON/OFF)
▼ Decrement	Decrement the value of selected parameters.	-----
▶ Next	Scrolling to the next parameter in EDIT mode	Scrolling between different measurements parameters.

11. Meter Measurement Scrolling :

Display can be set as auto scroll/Manual scroll Scrolling mode can be changes from auto to manual & vice versa by long press (for 3 sec) of increment key.

In auto scroll the measurement display changes to next page automatically while in manual mode (scroll) measurement page can be selected by pressing Next key.

12.0 KVA Measurement Method :

3d :Recommended method of measurement in case of distorted/unbalance load condition.

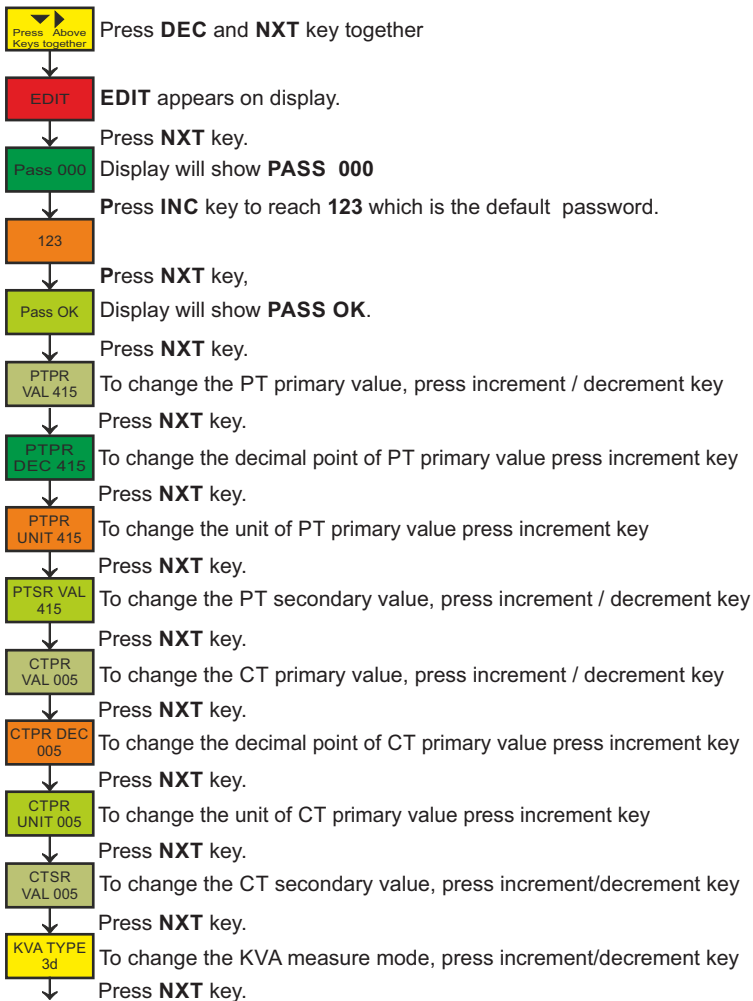
Arithmetic :Conventional method of measurement.

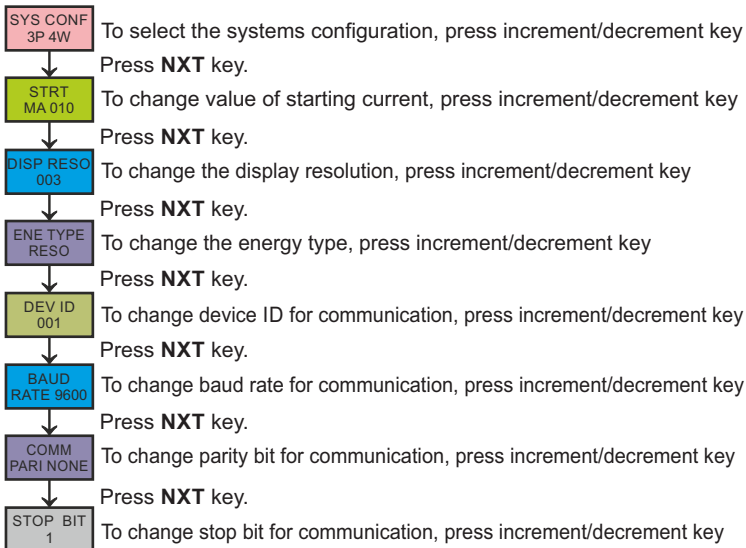
13.0 Edit Mode

Display	Description	Range
PTPR VAL	PT Primary Value	50-999
PTPR dEC	PT Primary Decimal Place	-
PTPR UNIT	PT Primary Voltage Unit	Decimal, Kilo
PTSR VAL	PT Secondary Value	50-999
CTPR VAL	CT Primary Value	1-999
CTPR dEC	CT Primary Decimal place	-
CTPR UNIT	CT Primary Unit	Decimal, Kilo
CTSR VAL	CT Secondary Value	1-10
SYS CONF	System Configuration	3P4W,1P
KVA TYPE	KVA Measurement Mode	3d, ARTH
STRT MA	Starting Current	1mA-200mA
disp reso	Display Resolution	002-003
EnE typE	Energy Type	Resolution, Counter
dEV Id	Device Identification For Communication	1-247
bAUd Rate	Communication baud rate	1200,2400,4800,9600,19200
Comm PARI	Communication parity bit	Even, odd, None
Stop bit	Stop Bit for Communication	1-2

14.0 . Setting/Configuration Modes :

14.1 EDIT Mode : Parameter values can be changed in 'EDIT' mode, 'EDIT' mode is password protected.





Example :Set the PT primary value as 41.8KV

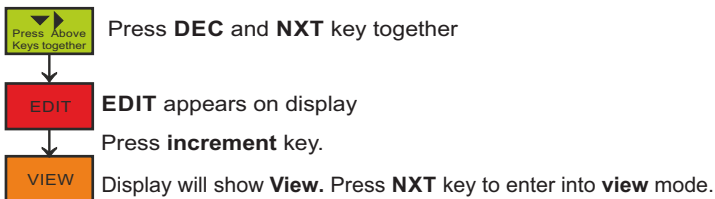
First set the PT primary value as 418

Press NEXT switch and set the PT primary decimal point as 41.8

Press NEXT switch and set PT primary unit as X1000 LED glow.

14.2 View Mode:

User can view all set values in this mode without entering password Change of values is not permitted in this mode.



Each press of NXT key user view next parameter

14.3 View Old Mode :



Press **DEC** and **NXT** key together



EDIT appears on display



Press **increment** key.

Display will show **View**



Press **increment** key

Display will show **VIEW OLD** Press **NXT** key to enter the **OLD** mode.

Each press of **NXT** key. To view old integrated parameter i.e KWH, KVAH, run hour, load hour, interruption which is model dependent

14.4 RST Password :



Press **DEC** and **NXT** key together



EDIT appears on screen

Press increment key



Display will show view

Press increment key



Display will show **VIEW OLD**

Press increment key



Display will show **RST PASS**

Press **NXT** key



Display will show **ENTER PASS**



Press increment key to set 123

Press **NXT** key



Display will show **NEW PASS**

Enter new password using increment /decrement key.

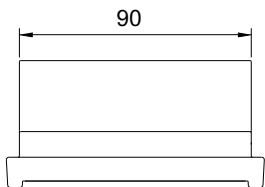
Press **NXT** key after selecting password.



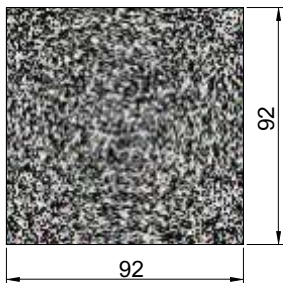
Display will show **PASS UPDT** after this password is updated

New password can be programmed in this mode.

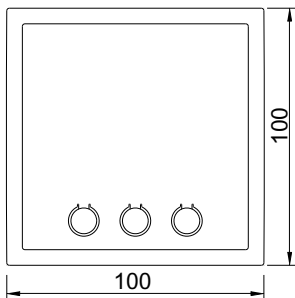
15.0 Dimensional details.



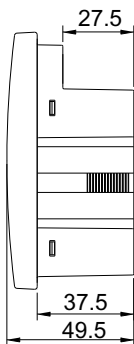
Top View



Panel Cutout



Front View



Side View

All dimensions are in mm.

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