● SINGLE PHASE POWER METER WITH ALARM

TVM-94N-SERIES

DIGITAL AC VOLT METER (TRUE RMS) / DIGITAL DC VOLT METER (TRUE RMS)

PRIMUS

รอเบิกสินค้าถ่ายรูปใหม่

Specification

Model.		TVM-94N-1	TVM-94N-2	TVM-94N-3
Power Supply		100-250VAC 50/60Hz		
		24VAC/VDC		
Power Consumption		3VA		
Display		7-Segment, Size 0.56 Inch, 5 Digit		
		3 LED (Show Alarm Relay)		
		1 LED (Show Communication)		
Input	Voltage	AC Voltage	DC Voltage	AC Voltage
		5-500VAC	0-500VDC	0.5-100VAC
	Accuracy	± 0.25 % of Measurement Range at 25 ˚C		
Output	Relay Alarm	3 Alarm 5A/250VAC		
	Transfer Current	4-20mA		
	Transfer Voltage	0-10VDC		
	Output Impedance	Load 500Ω for 4-20mA Output		
		Load 1kΩ for 0-10VDC Output		
	Accuracy	± 0.25 % of Output Range		
Communi-cation	Protocol	Modbus RTU		
	Address	1-127		
	Baud Rate	2400, 4800, 9600, 19200, 38400 bps		
	Parity	None , Even, Odd		
	Data Bits	8 bit		
	Stop Bits	1 , 2		
	Support Device Node	32		
Ambient Operation	Temperature	-10 ˚C to 60 ˚C		
	Humidity	85 % RH Non-Condensing		
Ambient Storage	Temperature	-20 ˚C to 80 ˚C		
	Humidity	85 % RH Non-Condensing		
Protection Degree	Front Protection Rating	IP52		
	Case Protection Rating	IP30		
Installation		Panel, Mounting		
Material		ABS-V0		
Size (mm.)		96 x 80 x 48		
Weight (kg.)		240		

Description

- Digital AC Volt Meter (True RMS) / Digital DC Volt Meter (True RMS): TCM-94N Series is designed to measure and indicate voltage results.
- The alternating current (AC) electrical system has a measured voltage range of 5–500 VAC (direct), 0.5–100.0 VAC (direct), and 0–20,000 VAC (with PT) at a frequency of 50–60 Hz.
- The direct current electrical system(DC) measured voltage rage 0-500VDC (Direct).
- Can set the multiplier depend on PT Ratio when it connect with Potential Transformer(PT) of High Voltage system.
- 3 Alarm Relay Output with 4 alarm functions for setting.
- Communicate with computer via RS-485 Modbus RTU PROTOCOL.
- Transfer Output 4-20 mA and 0-10 VDC.
- Manual Transfer Output function can supply signal volume as required by keypad.
- Absolute Input Function show positive value all the time even the connect input node +/- alternated position for TVM-94N-2.
- Function Peak Hold shows maximum voltage value.
- 7-Segment 5 digits size 0.56 inches display so it can display the maximum voltage value.
- Lock Function to block the screen setting.
- ON-OFF Delay Time for Alarm Output.

Operation

TVM-94N-Series is a voltage meter that measure and indicate in DC and AC system.

- The alternating current(AC) system can connect with Potential Transformer (PT) and set the multiplier as PT-Ratio to display voltage of high voltage system and it can save data to computer via RS-485 Modbus RTU.

Analog transfer output can connect with other devices such as PLC. It can operate in direct mode (output varies directly with input) or inverse mode (output varies inversely with input). In manual mode, it can supply the required signal volume using the keypads.

3 Alarm Output with 4 alarm function for setting to active or inactive load as request.

- Absolute Value High Low Band Alarm
- Absolute Value High Alarm
- Absolute Value Low Alarm
- Absolute Value High Low Range Alarm

TVM-94N suitable to installs in MDB cabinet to display voltage of system or machine.

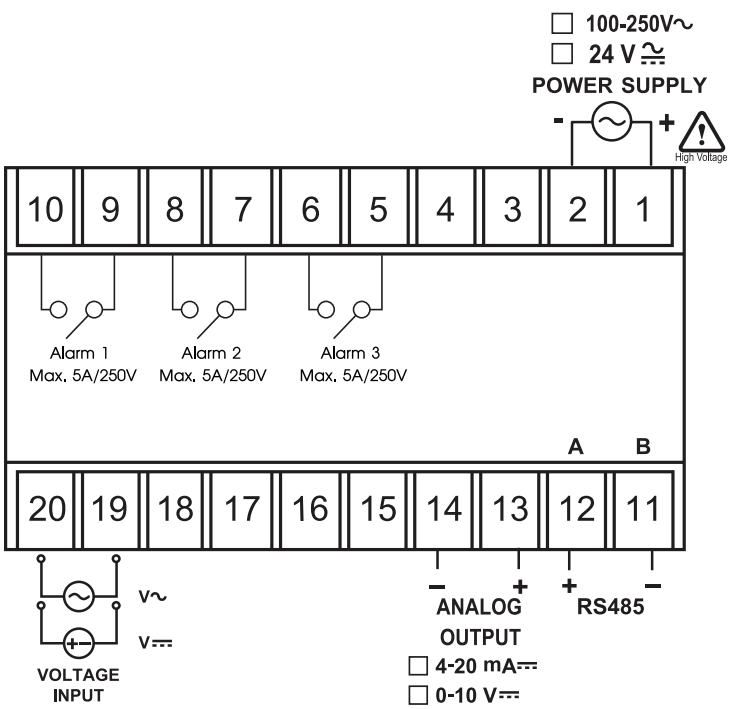
Appearance of Front Panel

The display of keypads and status of LED on the front panel.

- AL1 ● Shows the operation of Alarm 1
- AL2 ● Shows the operation of Alarm 2
- AL3 ● Shows the operation of Alarm 3
- COM ● Shows communication status
- V ● Shows the measured unit of Volt
- kV ● Shows the measured unit of kVolt
- Pk ● Shows the measured unit of PV Peak

- F Press to enter into program
- C Press to display peak value
- ▼ Press to decrease value or select program value
- ▼ Press to decrease value or select program value

Wiring Diagram

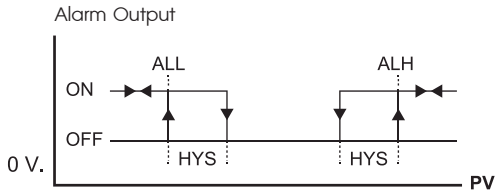


WARNING

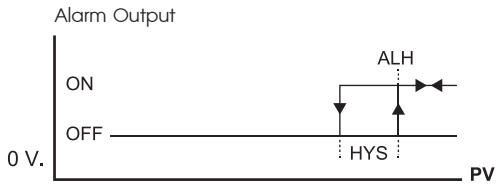
- Make sure the correct wiring connection before turning on electricity. Mis-wiring may cause malfunction of the unit and fire.
- Never modify the unit to prevent damage or incident such as malfunction and fire etc.

ALARM FUNCTION

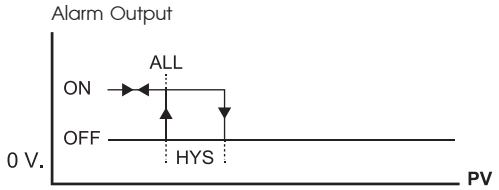
1. Absolute value High Low Band Alarm



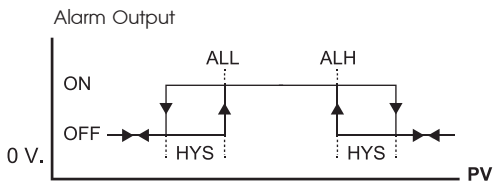
2. Absolute value High Alarm



3. Absolute value Low Alarm

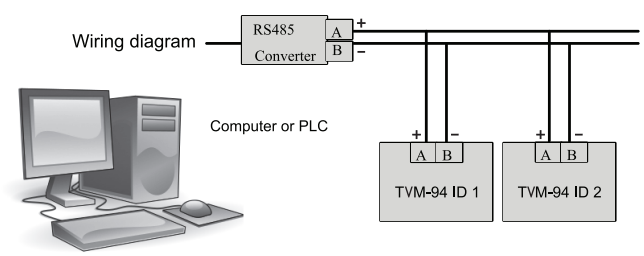


4. Absolute value High Low Range Alarm



SERIAL COMMUNICATIONS

The TVM-94N, TCM-94N are Equipped With a RS-485 Serial Communications Interface to Allow Connection to Computers or PLCs. Modbus Protocol is Provided as Standard Communication. The User Can Connect TVM-94N TCM-94N as Network Up to 255 Meter



Modbus Protocol

This Modbus Protocol has Been Implement in Accordance With Modbus. ORG Modbus Application Protocol Specification V1.1 With The Following Conditions Applying.

The Following Conditions Apply Baudrate can Selected Refer 18. Speed The Format is Modbus RTU UART Data can Selected Refer 19. Communication Setting Data is Considered to be Half Duplex Using 2 Wire.

22. Speed Setting

The Format is Modbus RTU UART Data Can Select Refer

23. Communication

Setting Data is Considered to be Half Duplex Using 2 Wire.

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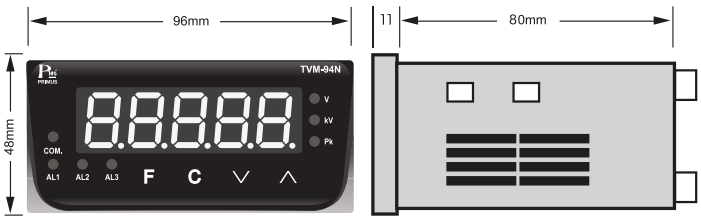
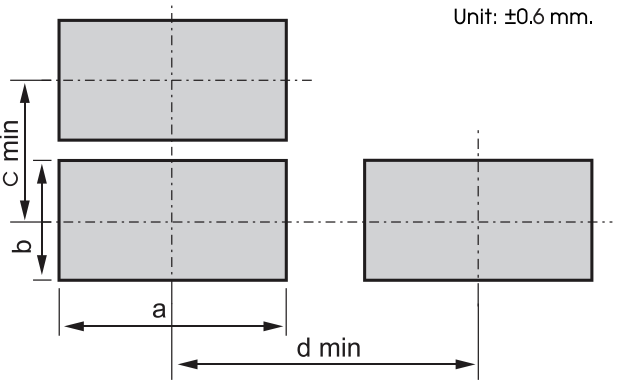
Dimension



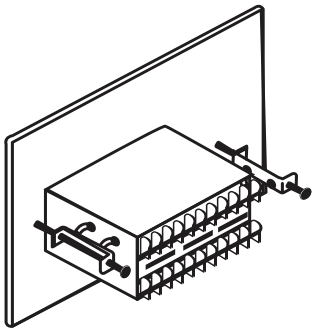
Installation cut size

a	b	c	d
92.0	45.5	54.5	113.3

Unit: ±0.6 mm.



Installation



Ordering Code

TVM-94N- [Input] -A [Alarm Output] [Alarm Output] - [Transfer Output] [Modbus Protocol] - [Power Supply]

Input	
1	5-500VAC
2	0-500VDC
3	0.5-100VAC

Alarm Output	
B	Alarm 2
C	Alarm 3

Power Supply	
220	100-250VAC
24	24VAC/VDC

Modbus Protocol	
M	RS-485

Transfer Output	
G	Transfer 0-10VDC
I	Transfer 4-20mA