TMCON

Digital ammeter/voltmeter
T903

Technical Manual
Version number: EN-V1-03

Thank you very much for choosing TMCON products,
In order to better use this product, please read the following before using.

■Safety precautions

⚠ Attention

Do not touch the terminals while power is on,
otherwise minor injuries may occur due to electric shock.

Do not allow metal objects, conductors, debris (such as cuttings) from
installationwork, moisture, or other foreign matter to enter the digital
controller, the setup tool ports, or between the pins on the connectors
on the Setup Tool cable.
Otherwise it may cause electric shock, short circuit or machine malfunction.

Do not use the product where subject to flammable or explosive gas.
Otherwise, it may cause mild injury due to the explosion.

Never disassemble, modify, or repair the product or touch any of
theinternal parts.
Otherwise, it may cause mild electric shock, fire, and equipment failure.

This equipment is an open processing controller. Do not use it in a control
cabinet where fire may occur.
When using more than 2 open-circuit switches, please turn off all
switchesbefore repair inspection, so that the product is in a power-off state.

■Main features

● 0.56 inch large display font.

● Current and voltage measurement display special type, economical price.

● The DIP range selection switch is hidden at the back of the casing, which can meet most conventional range specifications, thus having the advantage of reducing inventory compared to a single range model.

● The startup display will indicate the current range for easy use.

● The DC type measurement accuracy is 0.2 level, and the AC type measurement accuracy is 0.5 level.

● AC/DC100~240V high-performance switching power supply design ensures stable operation of microcomputers.
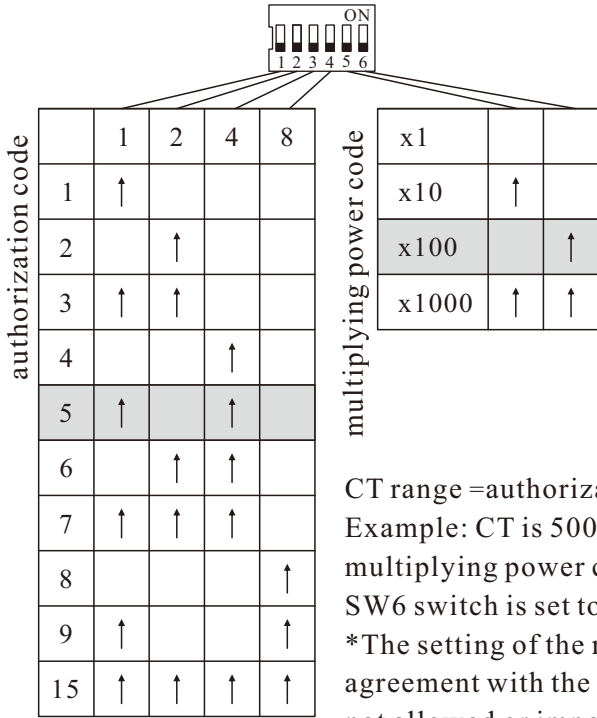
■Technical reference

Models	T903-GAA	T903-GAV	T903-FAA	T903-FAV	T903-GDA	T903-GDV	T903-FDA	T903-FDV
Functional categories	AC ammeter	AC voltmeter	AC ammeter	AC voltmeter	DC ammeter	DC voltmeter	DC ammeter	DC voltmeter
External dimension (mm)	48(high)×48(wide)× 86(depth)		48(high)×96(wide)× 99(depth)		48(high)×48(wide)× 86(depth)		48(high)×96(wide)× 99(depth)	
Hole size (mm)	45(high)×45(wide)		45(high)×92(wide)		45(high)×45(wide)		45(high)×92(wide)	
Power supply	AC100~240V 50/60Hz or AC/DC12~24V (The default delivery is 100~240V, If you need 12~24V, please declare the voltage at the time of ordering)							
Permissible voltage range	85~110%							
Power consumption	About 4.8VA (AC240V), about 3VA (DC24V)							
Display mode	4-bit, 7-segment LED digital display							
Maximum display range	0~2000							
Accuracy class	AC type: 0.5 level (FS ± 0.5% rdg ± 1 word)				DC type: 0.3 level (FS ± 0.3% rdg ± 1 word)			
Maximum allowed input	Enter 110% F. S of the specification							
A/D conversion method	Oversampling mode of SAR, ADC							
AC measurement method	Sine wave average detection							
Sample rate	About 20 times per second							
Response speed	≤500ms							
Insulation withstand voltage	AC2000V 50/60Hz 1min							
Insulated resistance	DC500V≥100mΩ							
Usage environment	Temperature -10~+60°C (not freezing or exposed), humidity: 25~85% RH							

■Range specification choose Settings

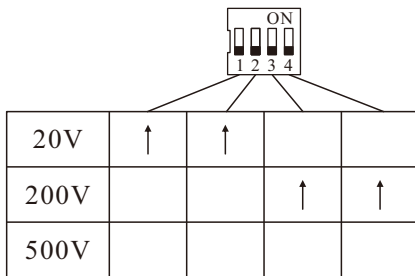● T903-F type (48×96mm) through the built-in switch selection range.

1.Ampere range selector switch

authorization code	1	2	4	8
1	↑			
2		↑		
3	↑	↑		
4			↑	
5	↑		↑	
6		↑	↑	
7	↑	↑	↑	
8				↑
9	↑			↑
15	↑	↑	↑	↑

multiplying power code		
x1		
x10	↑	
x100		↑
x1000	↑	↑

"↑"Represents the range switch is set to ON direction.

authorization code is 1、2、4、8(The corresponding switch is SW1, SW2, SW3, Sw4)

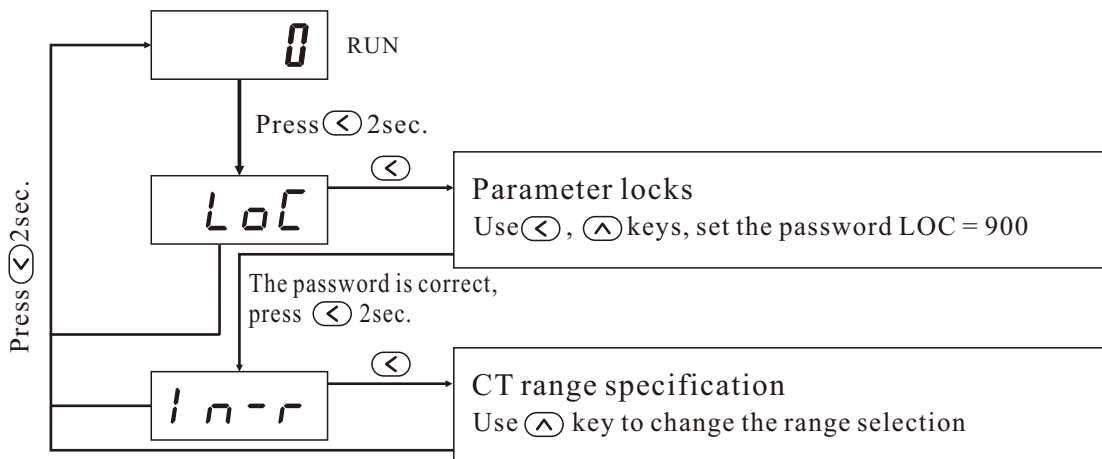multiplying power code is x1,x10,x100,x1000 (Set by the switch SW5, SW6)

CT range =authorization code X multiplying power code.
Example: CT is 500A，500 = (1 + 4) authorization code X (100) multiplying power code,Then follow the table need to SW1, SW3, SW6 switch is set to ON (see table shaded parts shown).
*The setting of the measuring range switch must be in complete agreement with the CT specification, otherwise the measurement is not allowed or impossible to measure.
*AC5A can direct input, sets all switches to OFF (factory default).
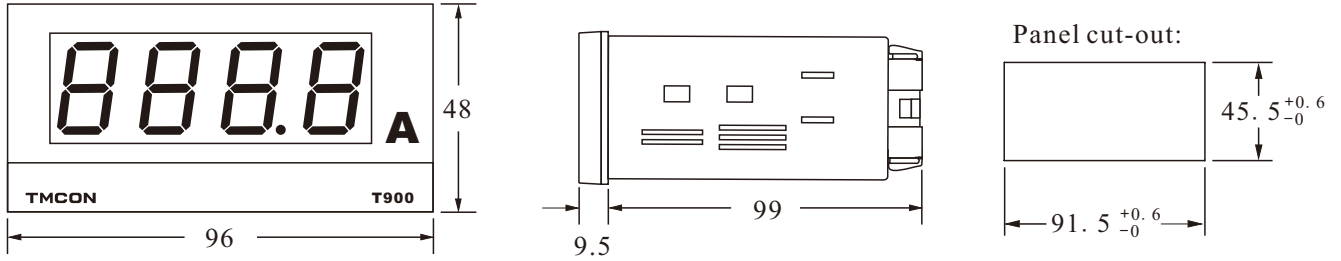
2.Voltage range selector switch

20V	↑	↑		
200V			↑	↑
500V				

*500V sets all switches to OFF (factory default).

● T903-G type （48×48mm） select the range by setting software parameters.

■DimenSionS(Unit:mm)
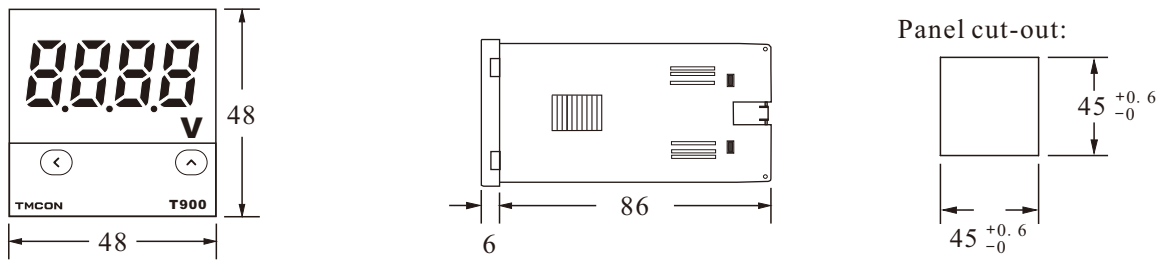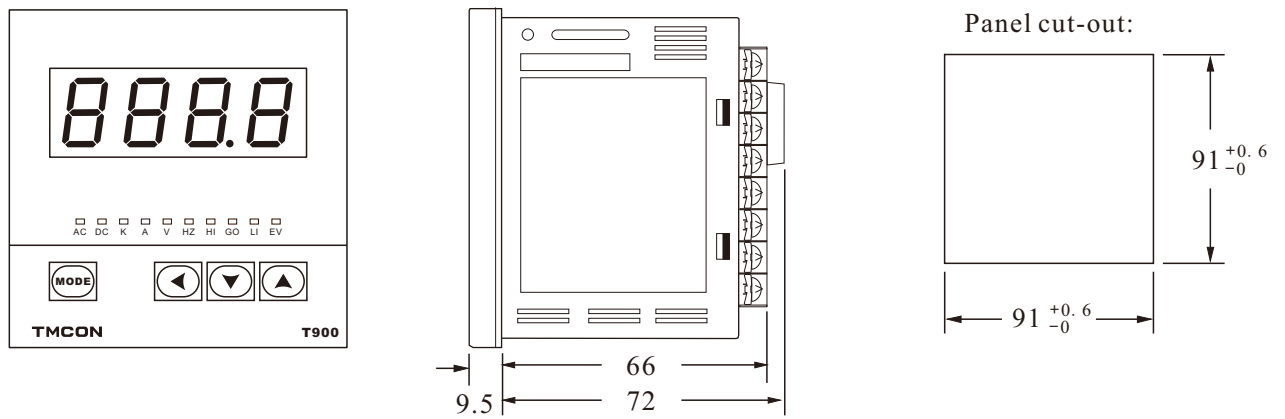
● T903-F type（48×96mm）

Panel cut-out:

48

96

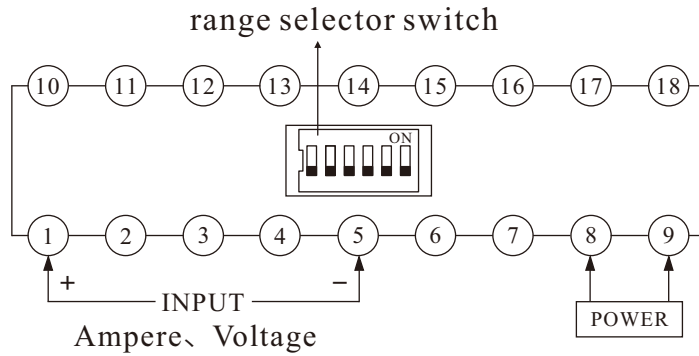9.5

99

$45.5^{+0.6}_{-0}$

$91.5^{+0.6}_{-0}$

● T903-G type（48×48mm）

Panel cut-out:

48

48

6

86

$45^{+0.6}_{-0}$

$45^{+0.6}_{-0}$

● T903-A type（96×96mm）

Panel cut-out:

9.5

66

72

$91^{+0.6}_{-0}$

$91^{+0.6}_{-0}$

■Terminal connection

● T903-F type（48×96mm）

range selector switch

⑩ — ⑪ — ⑫ — ⑬ — ⑭ — ⑮ — ⑯ — ⑰ — ⑱

ON

① — ② — ③ — ④ — ⑤ — ⑥ — ⑦ — ⑧ — ⑨

+ —— INPUT —— −
Ampere、Voltage

POWER

● T903-G type（48×48mm）

Ampere
—— INPUT ——
+   −

⑥ — ⑦ — ⑧ — ⑨ — ⑩

⑪   ⑫

⑬

① — ② — ③ — ④ — ⑤

POWER

—— 500V ——
—— 200V ——
— 20V —
Ampere
INPUT

+   +   +   −

⑥ — ⑦ — ⑧ — ⑨ — ⑩

⑪   ⑫

⑬

① — ② — ③ — ④ — ⑤

POWER