

Digital Multi Timer

TF4**INSTRUCTION MANUAL**

We appreciate you for purchasing HanYoung NUX Co.,Ltd product. Before using the product you have purchased, check to make sure that it is exactly what you ordered. Then, please use it following the instructions below.

MAIN PRODUCTS

- DIGITAL : Temperature Controller, Counter, Timer, Speedmeter, Tachometer, Panel Meter, Recorder
- SENSOR : Proximity Sensor/Photo Electric Sensor, Rotary Encoder, Optical Fiber Sensor, Pressure Sensor
- ANALOG : Timer, Temperature Controller

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HANYOUNG NUX**■ Safety information**

Before you use, read safety precautions carefully, and use this product properly. The precautions described in this manual contain important contents related with safety; therefore, please follow the instructions accordingly. The precautions are composed of DANGER, WARNING and CAUTION.

⚠ DANGER

There is a danger of occurring electric shock in the input/output terminals so please never let your body or conductive substance is touched.

⚠ WARNING

1. If there is a concern about a serious accident caused by a malfunction or abnormality of this product, please install an external protection circuit and devise a scheme for preventing an accident.
2. This product does not contain an electric switch or fuse, so the user needs to install a separate electric switch or fuse externally. (Fuse rating: 250V 0.5A)
3. To prevent deflection or malfunction of this product, apply a proper power voltage in accordance with the rating.
4. To prevent electric shock or malfunction of product, do not supply the power until the wiring is completed.
5. Since this product is not designed with explosion-protective structure, do not use it any place with flammable or explosive gas.
6. Do not decompose, modify, revise or repair this product. This may be a cause of malfunction, electric shock or fire.
7. Reassemble this product while the power is OFF. Otherwise, it may be a cause of malfunction or electric shock.
8. If you use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.
9. There is a possibility of occurring electric shock so please use this product after installing it onto a panel while it is operating.

1. The contents of this manual may be changed without prior notification.

⚠ CAUTION

2. Before using the product you purchased, make sure that it is exactly what you ordered.
3. Make sure that there is no damage or abnormality of the product during the delivery.
4. Please do not use it in case of the time setting is 0. It may be a cause of its malfunction.
5. Please turn the power off before changing the time setting. In case of changing the time setting while it is ON, please reset it.
6. Do not use this product at any place with occurring corrosive (especially noxious gas or ammonia) or flammable gas.
7. Do not use this product at any place with direct vibration or impact.
8. Do not use this product at any place with liquid, oil, medical substances, dust, salt or iron contents. (Use at Pollution level 1 or 2)
9. Do not polish this product with substances such as alcohol or benzene. (Use neutral detergent.)
10. Do not use this product at any place with a large inductive difficulty or occurring static electricity or magnetic noise.
11. Do not use this product at any place with possible thermal accumulation due to direct sunlight or heat radiation.
12. Install this product at place under 2,000m in altitude.
13. When the product gets wet, the inspection is essential because there is danger of an electric leakage or fire.
14. If there is excessive noise from the power supply, using insulating transformer and noise filter is recommended. The noise filter must be attached to a panel which is already connected to a ground and the wire between the filter output side and power supply terminal must be short as possible.
15. If twisting the power cables closely together then it is effective against noise.
16. Do not connect anything to the unused terminals.
17. After checking the polarity of terminal, connect wires at the correct position.
18. When this product is connected onto a panel, use a circuit breaker or switch approved with IEC947-1 or IEC947-3.
19. Install a circuit breaker or switch at near place for convenient use.
20. Write down on a label that if the circuit breaker or switch is operating then the power will be disconnected since the circuit breaker or switch is installed.
21. the continuous and safe use of this product, the periodical maintenance is recommended.

22. Some parts of this product have limited life span, and others are changed by their usage.
23. The warranty period for this product including parts is one year if this product is properly used.
24. When the power is on, the preparation period of contact output is required. In case of using signals of external interlock circuit or etc., use it with a delay relay.
25. Display's text cannot be seen due to the light of the sun outside or the bright lightning inside

■ Model and Suffix code

Model	Suffix Code	Description
TF4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Digital Multi Timer (DIN 48mm x 48mm)
Time Specification	A	999.9 sec./9999 sec.
	B	9 minutes 59.9 sec./59 minutes 59 sec.
	C	59 hours 59 minutes
Display Method	U	Up Display
	D	Down Display
Input Voltage	A	100 - 240 V a.c 50 ~ 60 Hz
	D	24 - 60 V d.c
Control Output	R	Relay Output
	T	Open Collector Output

■ Standard Range

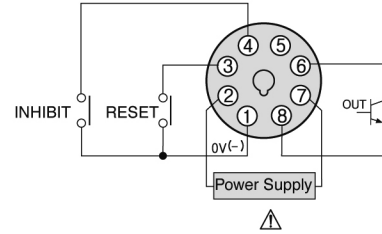
Time Code Number	Setting Range
A	999.9s / 9999s
B	9m 59.9s / 59m 59s
C	999.9m / 59h 59m

■ Specification

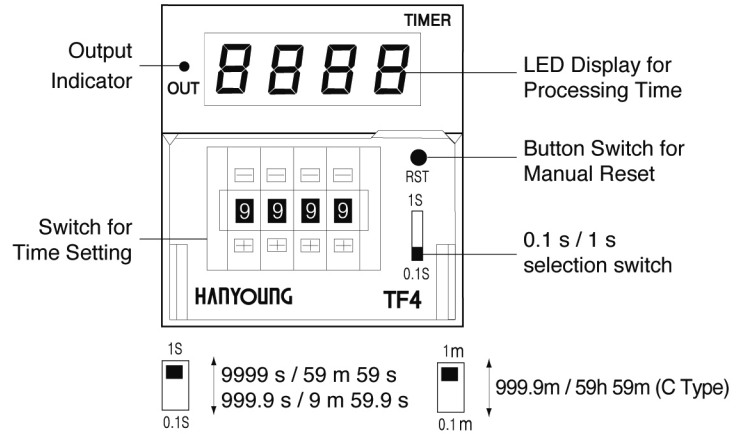
Contents	Model	TF4 series
Rated Voltage		100 - 240 V a.c 50 ~ 60 Hz (AC) / 24 - 60 V d.c (DC)
Permissible Voltage Fluctuation Rate		Rated Voltage $\pm 10\%$
Power Consumption		Approx. 12 VA / 2.5 W (250 V a.c)
Reset Inhibit		Power Reset: minimum power open time 0.5 sec. External Reset or Inhibit: minimum input signal width 0.02 sec.
Control Output		Contact : 250 V a.c 3 A Resistive Load (cos $\phi=1$) Non-Contact: Open Collector 30 V d.c 100 mA Max.
Repetition of Operating Time Setting Error		Below $\pm 0.01\% \pm 0.05$ sec. (in the case of power supply start)
Effect of Voltage Effect of Temperature		Below $\pm 0.005\% \pm 0.003$ sec. (in the case of reset) (rate about the setting value)
Installation Method		Mounting Panel Method
Operation Method		Up, Down Operation
Operation Mode		N Mode
Reset Method		Power Reset, Manual Reset
External Connection Method		8 pin socket
Input Signal Method		Contact: (open of contact, input by short-circuit) Non-Contact: (input ON/OFF of Open Collector Transistor)

Control Output	Contact 1c or Non-Contact Output	
Display Method	7 segments LED (Digit's Height: 11 mm / 8 mm)	
Processing Direction of Digit	Up Display: Up from 0 to Setting Value Down Display: Down from Setting Value to 0	
Decimal System	999.9s/9999s (selected by the front dip switch)	
Sexagesimal System	9m 59.9s/59m 59s (selected by the front dip switch) 999.9m / 59h 59m	
Insulation Resistance	Above 100 MΩ (at 500 V d.c mega) Electric conduction part and disclosed non-electrically chargeable metal part Between operational power circuit and control output circuit	
Dielectric Strength	2000 V a.c 50 ~ 60 Hz for 1 minute (Electric conduction part and disclosed non-electrically chargeable metal part) 1000 V a.c 50 ~ 60 Hz for 1 minute (between non-continuous contacts) ± 500 V (between input terminals)	
Noise Immunity	By noise simulator, square-shaped wave noise ± 2 KV (between operational power terminals)	
Vibration Resistance	Durability	10 ~ 55 Hz double amplitude width 0.75 mm
	Malfunction	10 ~ 55 Hz double amplitude width 0.5 mm
Shock Resistance	Durability	300 m/s ² (approx. 30 G)
	Malfunction	100 m/s ² (approx. 10 G)
Life Expectancy	Mechanical	Above 10 million times
	Electrical	Above 100 thousand times (250 V a.c 3 A Resistive Load)
Operating Ambient Temperature	0 ~ +50 °C	
Storage Temperature	-20 ~ +65 °C	
Operating Ambient Humidity	35 ~ 85 % R.H.	

■ Non-Contact Control Output

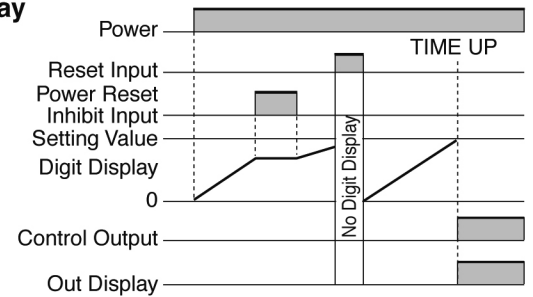


■ Each Part's Name

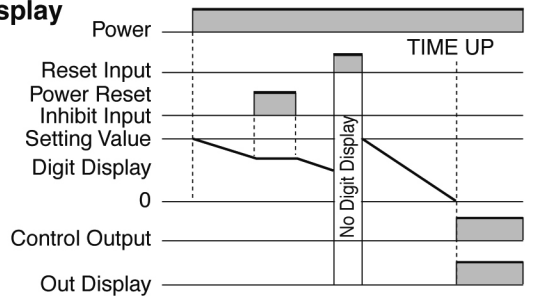


■ Operation Chart

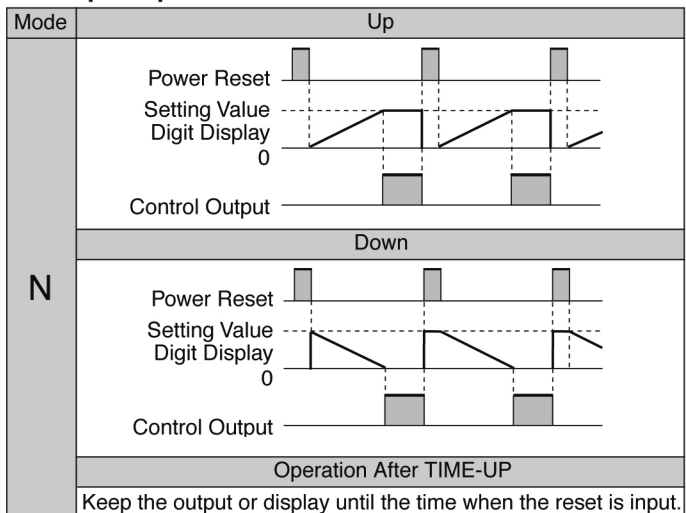
■ Up Display



■ Down Display

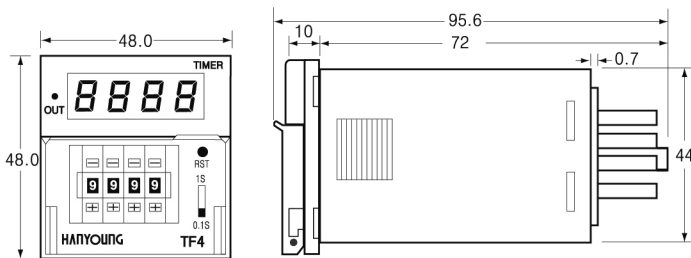


■ Output Operation Mode

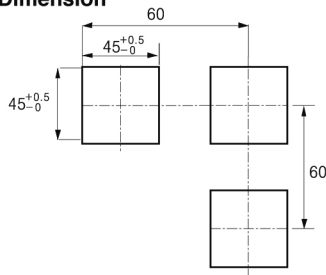


■ Dimension & Panel cutout

Unit : mm



• Panel cutout Dimension



■ External Wiring Diagram

■ Contact Control Output

