

# TF4A

## INSTRUCTION MANUAL

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Thank you for purchasing Hanyoung Nux products.  
 Please read the instruction manual carefully before using this product, and use the product correctly.  
 Also, please keep this instruction manual where you can see it any time.

MD0307KE220415

### Safety information

Please read the safety information carefully then use the product correctly.  
 The alerts declared in the manual are classified into **Danger**, **Warning** and **Caution** according to their importance

	<b>DANGER</b>	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
	<b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
	<b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor injury or property damage

#### DANGER

The input/output terminals are subject to electric shock risk. Never let the input/output terminals come in contact with your body or conductive substances.

#### WARNING

Any use of the product other than those specified by the manufacturer may result in personal injury or property damage.

If there is a possibility that a malfunction or abnormality of this product may lead to a serious accident to the system, install an appropriate protection circuit on the outside.  
 Since this product is not equipped with a power switch and fuse, install them separately on the outside. (fuse rating: 250 VAC 0.5 A).

Please supply the rated power voltage, in order to prevent product breakdowns or malfunctions.

To prevent electric shocks and malfunctions, do not supply the power until the wiring is completed.

The product does not have an explosion-proof structure, so avoid using it in places with flammable or explosive gases.

Never disassemble, modify, process, improve or repair this product, as it may cause abnormal operations, electric shocks or fires.

Please disassemble the product after turning OFF the power. Failure to do so may result in electric shocks, product abnormal operations or malfunctions.

Please use this product after installing it to a panel, because there is a risk of electric shock.

#### CAUTION

The contents of this manual may be changed without prior notification.  
 Please make sure that the product specifications are the same as you ordered.  
 Please make sure that there are no damages or product abnormalities occurred during shipment.

Please use the product in places where corrosive gases (especially harmful gases, ammonia, etc.) and flammable gases are not generated.

Please use the product in places where vibrations and impacts are not applied directly.  
 Please use the product in places without liquids, oils, chemicals, steam, dust, salt, iron, etc.

Please do not wipe the product with organic solvents such as alcohol, benzene, etc. (use neutral detergents).

Please avoid places where large inductive interference, static electricity, magnetic noise are generated.

Please avoid places with heat accumulation caused by direct sunlight, radiations, etc.  
 Please use the product in places with elevation below 2000 m.

When water enters, short circuit or fire may occur, so please inspect the product carefully.

When there is a lot of noise from the power, we recommend to use insulation transformer and noise filter. Please install the noise filter to a grounded panel, etc. and make the wiring of noise filter output and power supply terminal as short as possible.

Tightly twisting the power cables is effective against noise.  
 Do not wire anything to unused terminals.

Please wire correctly, after checking the polarity of the terminals.  
 When you install this product to a panel, please use switches or circuit breakers compliant with IEC60947-1 or IEC60947-3.

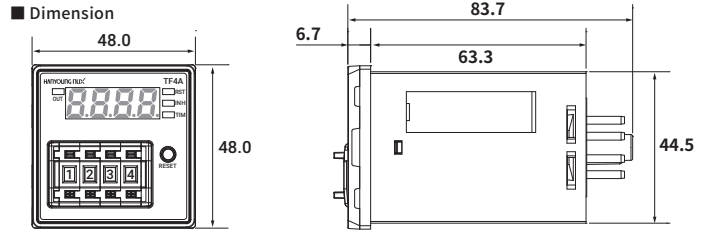
Please install switches or circuit breakers at close distance for user convenience.  
 We recommend regular maintenance for the continuous safe use of this product.  
 Some components of this product may have a lifespan or deteriorate over time.

The warranty period of this product, is 1 year, including its accessories, under normal conditions of use.  
 The preparation period of the contact output is required during power supply.

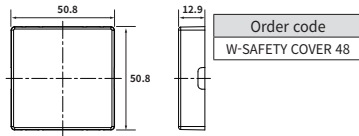
If used as a signal to external interlock circuit, etc. please use a delay relay together.

### Dimension & Panel cutout

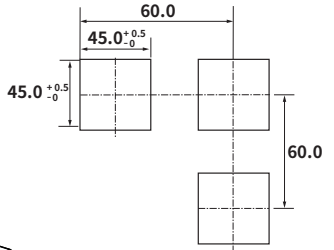
[Unit:mm]



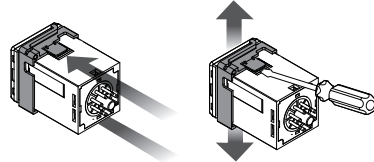
#### Front Protective Cover



#### Panel cutout

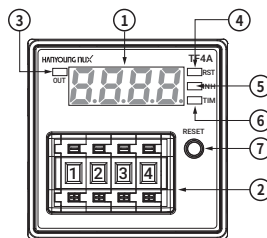


#### Bracket assembling - disassembling



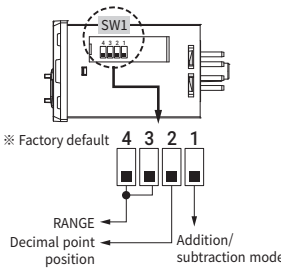
### Function and name of each part

#### Front part configuration



NO.	Name	Function
1	PV display	Time value display
2	SV setting	Time value setting switch
3	Output indicator	Lights up during OUT output operation
4	Reset input indicator	Lights up when external RESET signal is applied
5	Prohibited input indicator	Lights up when external INHIBIT signal is applied
6	Timekeeping indicator	Flashes during timing operation
7	Reset-key	Time value and output status initialization

#### Function switch configuration

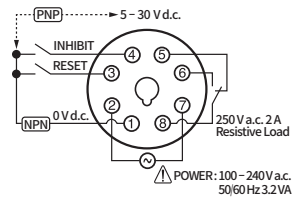


SW1	Function												
1	<table border="1"> <tr> <td>ON</td> <td>OFF</td> <td>1</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> </table> Addition mode      Subtraction mode	ON	OFF	1	ON	OFF	OFF	OFF	OFF	OFF	OFF		
ON	OFF	1	ON	OFF									
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2 ~ 4	<table border="1"> <tr> <td>ON</td> <td>OFF</td> <td>4 3 2</td> <td>ON</td> <td>OFF</td> <td>4 3 2</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> </table> 9999 sec      999.9 sec	ON	OFF	4 3 2	ON	OFF	4 3 2	OFF	OFF	OFF	OFF	OFF	OFF
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ON	OFF	4 3 2	ON	OFF	4 3 2								
OFF	OFF	OFF	OFF	OFF	OFF								

### Suffix code

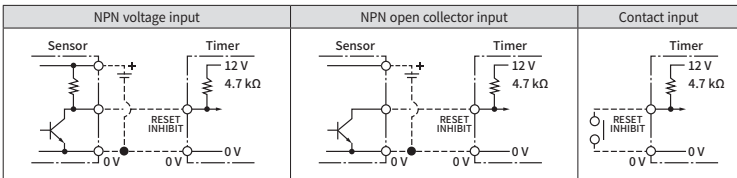
Model	Code	Content
TF4A-		Digital Timer, 48(W) X 48(H) mm
Power supply voltage	A	100 ~ 240 V a.c. 50/60 Hz

### Connection diagram

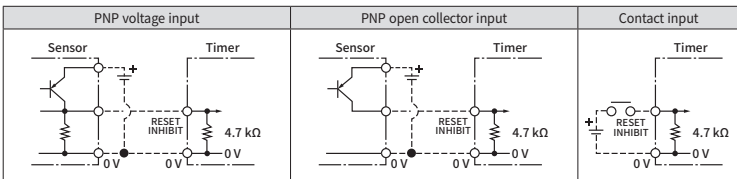


### Input wiring method

#### When selecting with no voltage input (NPN)



#### When selected by voltage input (PNP)

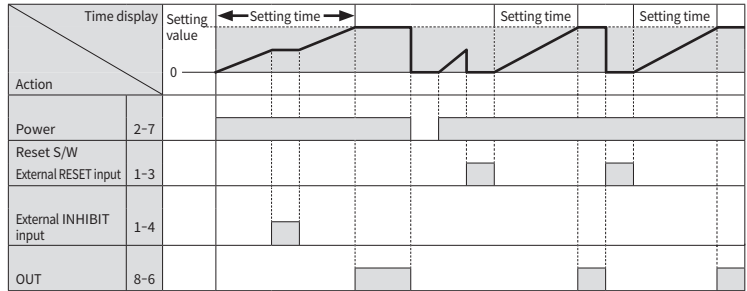


### Specification

Power voltage	100 ~ 240 V a.c. 50/60 Hz
Voltage fluctuation rate	Power voltage $\pm 10\%$
Power consumption	3.2 VA
Display	White 7 segments LED
Character size	Character height (8.5 mm), Character width (5.0 mm)
Timer operation	Power On Start
Return time	500 ms max.
Timer operation error	• Power start : $\pm 0.01\% \pm 0.05$ seconds or less • Reset start : $\pm 0.01\% \pm 0.03$ seconds or less
Input	• Input method selection by external switch (Voltage input / No voltage input) • RESET, INHIBIT Composed of input • Voltage input : HIGH level (5 V ~ 30 V d.c.), LOW level (0 V ~ 2 V d.c.), Input resistance (Approx. 4.7 k $\Omega$ ) • No voltage input : Impedance in case of short circuit (1 k $\Omega$ below), Residual voltage in case of short circuit (2 V d.c. below)
Input signal time	20 ms below (RESET, INHIBIT input)
Control output	• Time limit 1c (SPDT) • SPDT : NC (250 V a.c. 2 A), NO (250 V a.c. 5 A), Resistance load
Relay life time	Electrical (more than 50,000 times), Mechanical (more than 10 million times)
External connection method	8-pin socket
Insulation resistance	100 M $\Omega$ or more (500 V d.c. Mega standard)
Dielectric strength	2,000 V a.c. 60 Hz 1 minute (Between the conductive part terminal and the case)
Noise immunity	Square wave noise by noise simulator $\pm 2,000$ V (Pulse width 1 us)
Vibration	• Durability : 10 ~ 55 Hz (1 minute cycle), Double amplitude 0.75 mm, X · Y · Z 2 hours each direction • Malfunction : 10 ~ 55 Hz (1 minute cycle), Double amplitude 0.5 mm, X · Y · Z 10 minutes each direction
Ambient temperature & humidity	-10 ~ 55 °C, 35 ~ 85 % R.H.
Storage temperature	-20 ~ 65 °C
Weight (g)	Approx. 92 g

### Timer operation mode

#### Addition mode



#### Subtraction mode

