

# TF4A

## 简易说明书

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非常感谢您购买韩荣乐嗣电子(上海)有限公司产品。  
使用本产品前,请认真阅读产品说明书,并按照说明使用。  
另外,请将说明书保管与随时方便查看的位置。

MD0307CE231214

### 安全注意事项

为正确使用本产品,请务必在使用前认真阅读安全注意事项。  
安全注意事项区分为 危险,警告,注意。

- 危险** 表示不遵守时,存在紧急危险情况,导致死亡或重伤。
- 警告** 表示不遵守时,可能会导致死亡或重伤。
- 注意** 表示不遵守时,可能轻伤或财产损失。

#### 危险

• 输入输出端子可能有触电的危险,请勿接触身体或通电物体。

#### 警告

- 使用制造商指定以外的方法,可能导致人身伤害或财产损失。
- 本产品的故障或系统异常,可能会导致重大事故,请在外部安装适当的保护电路。
- 由于本机没有电源开关和保险丝请将其单独安装在外面。(保险丝额定值: 250 VAC, 0.5 A)
- 提供标准规格的电源电压,以防止本机损坏或故障。
- 为防止触电和故障,请勿在所有接线完成之前打开电源。
- 请勿在易燃或易爆气体的场所使用本产品。
- 切勿拆卸,修改或维修本机。否则可能导致操作异常,触电或起火。
- 在拆卸或安装本机之前,请务必关闭电源。否则会导致触电或故障。
- 为防止触电请在安装了面板的情况下使用本机。

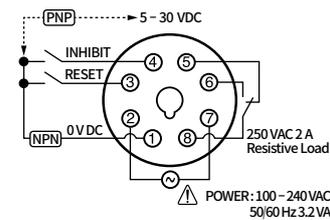
#### 注意

- 本说明书手册的内容如有更改,恕不另行通知或事先通知。
- 请确认产品是否与订购的规格一致。
- 确认运输过程中产品是否有破损及异常。
- 在无腐蚀性气体(特别是有害气体,氨等)和易燃气体的场所使用。
- 请不要在受到直接撞击或震动的场所使用。
- 请勿使电池或汞或汞等有机溶剂接触本机。(请用中性洗涤剂擦拭)
- 尽量避免有感应障碍,静电干扰的场所。
- 尽量避免阳光直射或辐射热而产生热量聚集的场所。
- 请在海拔2000米以下使用。
- 进水时,请务必检查是否存在漏电或火灾危险。
- 电源干扰比较大的情况下,建议使用隔离变压器及干扰滤波器。
- 干扰滤波器必须连接到接地的面板。
- 缩短干扰滤波器输出和机器电源端子的排线。
- 将电源线拧在一起对干扰有效。
- 不使用的端子请不要做任何接线。
- 请先检查端子的极性后,正确接线。
- 在本机安装面板时,请使用 IEC60947-1 或 IEC60947-3 认证的开关,断路器。
- 请将开关或断路器安装在近距离处,以便操作人员轻松操作。
- 建议定期维护以继续安全操作本机。
- 本机装配的配件可能具有使用寿命,或经过时间会产生变化。
- 如果正常使用,本产品(包括附件)的保修期为一年。
- 通电时,应需要一段准备接点输出的时间。
- 在外部联锁电路等信号使用时,请同时使用延迟继电器。

### 型号构成

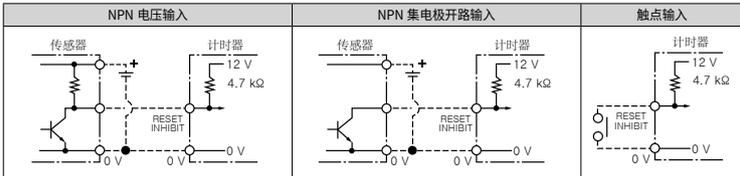
型号	编码	内容
TF4A-	□	数码计数器 48(W) X 48(H) mm
电源电压	A	100 - 240 VAC 50/60 Hz

### 接线图

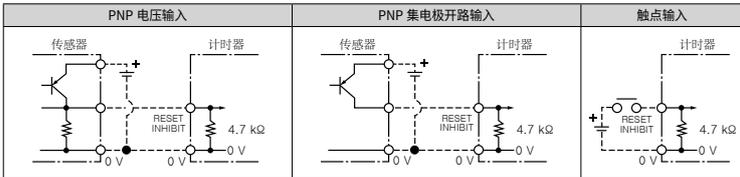


### 输入接线方法

#### 选择无电压输入(NPN)时



#### 选择电压输入(PNP)时



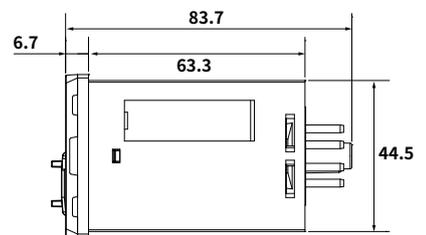
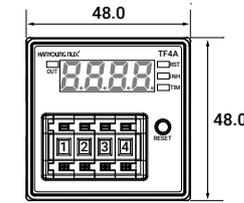
### 规格

电源电压	100 - 240 VAC 50/60 Hz
电压变动率	电源电压 ±10 %
消耗电力	3.2 VA
显示方式	白色 7段 LED
文字大小	文字高度 (8.5 mm), 文字宽度 (5.0 mm)
计时动作	Power On Start
复归时间	500 ms 以下
计时动作误差	• 电源开始: ± 0.01 % ± 0.05 秒以下    • 复位开始: ± 0.01 % ± 0.03 秒以下
输入	• 外部开关输入方式选择 (电压输入 / 无电压输入)    • RESET, INHIBIT 输入构成 • 电压输入: HIGH 水平 (5 V - 30 VDC), LOW 水平 (0 V - 2 VDC), 输入电阻 (约 4.7 kΩ) • 无电压输入: 断路时抗阻 (1 kΩ 以下), 断路时残留电压 (2 VDC 以下)
最小输入信号时间	20 ms 以下 (RESET, INHIBIT 输入)
控制输出	• 限时 1c (SPDT)    • SPDT: NC (250 VAC 2 A), NO (250 V a.c. 5 A), 电阻负载
继电器寿命	电气 (5万次以上), 机械 (1000万次以上)
外部接线方式	8针插入型
绝缘电阻	100 MΩ 以上 (500 VDC 兆标准)
耐电压	2,000 VAC 60 Hz 1分钟 (导电端子与露出的未填充金属类)
耐干扰	噪声模拟器产生的方波干扰 ± 2,000 V (脉冲宽度 1 us)
震动	• 耐久: 10 - 55 Hz (周期 1分钟), 复振幅 0.75 mm, X · Y · Z 各方向2小时 • 动作: 10 - 55 Hz (周期 1分钟), 复振幅 0.5 mm, X · Y · Z 各方向10分钟
使用周围温·湿度	-10 - 55 °C, 35 - 85 % R.H.
保存温度	-20 - 65 °C
重量 (g)	约 92 g

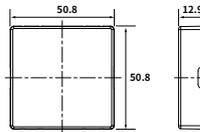
### 外型及面板加工尺寸

[单位:mm]

#### 外型尺寸

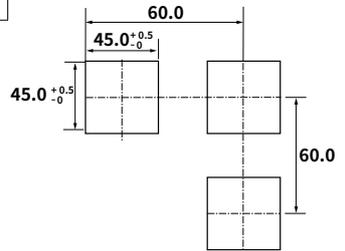


#### 正面保护盖

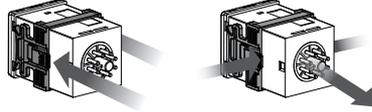


订购型号  
W-SAFETY COVER 48

#### 面板加工尺寸

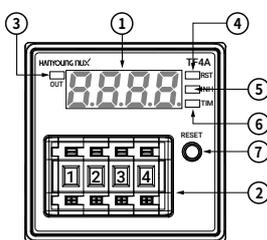


#### 固定架组装·拆卸方式



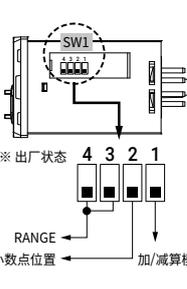
### 各部分的名称及功能

#### 前面部分构成



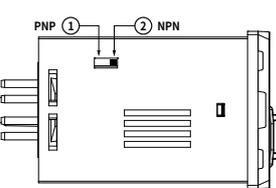
NO.	名称	功能
1	PV 显示部	计时值显示
2	SV 设定部	计时值设定开关
3	输出显示灯	OUT 输出动作时亮灯
4	复位输入显示灯	外部 RESET 信号提供时亮灯
5	禁止输入显示灯	外部 INHIBIT 信号提供时亮灯
6	计时显示灯	计时动作时闪亮
7	初始化-键	计时值及输出状态初始化

#### 功能开关构成



SW1	功能
1	ON 1 OFF 1: 加算模式 / 减算模式
2-4	ON 4 3 2 OFF 4 3 2: 9999 sec / 999.9 sec
	ON 4 3 2 OFF 4 3 2: 59 min 59 sec / 9 min 59.9 sec
	ON 4 3 2 OFF 4 3 2: 59 hrs 59 min / 999.9 min
	ON 4 3 2 OFF 4 3 2: 59 hrs 59 min / 999.9 min

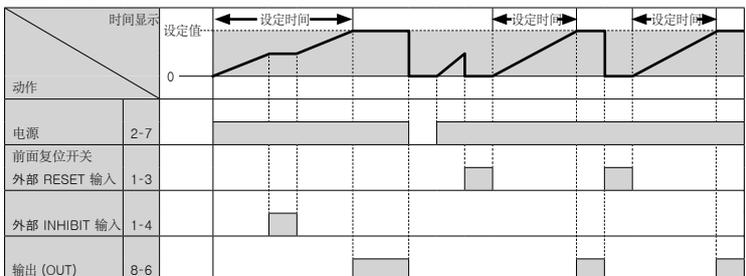
#### 输入逻辑选择



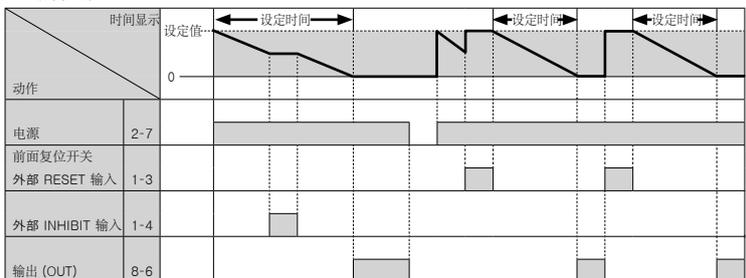
- 1) 请将产品电源关闭。
  - 2) 请选择所接到外壳侧面的输入逻辑选择开关的电压输入 (PNP) 或无电压输入 (NPN) 的外部输入。
  - 3) 选择后供电时, 计时器会根据输入状态启动。
- ※ 电压输入及无电压输入选择变更请切断电源后变更。

### 计时器 动作模式

#### 加算模式



#### 减算模式



# TF4A

## INSTRUCTION MANUAL

HANYOUNGNUXCO.,LTD

28, Gilpa-ro 71beon-gil, Michuhol-gu, Incheon, Korea  
TEL : +82-32-876-4697  
http://www.hanyoungnux.com

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.

MD0307CE231214

## 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.

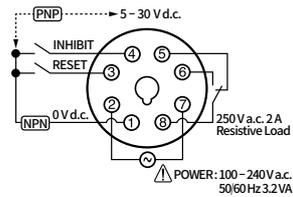
### ⚠ CAUTION

- 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.

## Suffix code

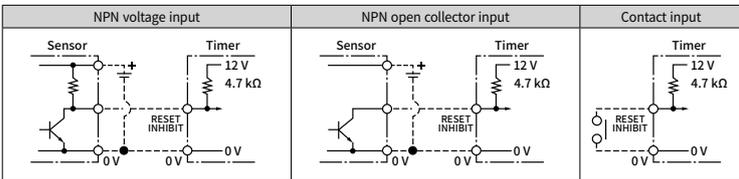
Model	Code	Content
TF4A-	<input type="checkbox"/>	Digital Timer, 48(W) X 48(H) mm
Power supply voltage	A	100 - 240 V a.c. 50/60 Hz

## Connection diagram

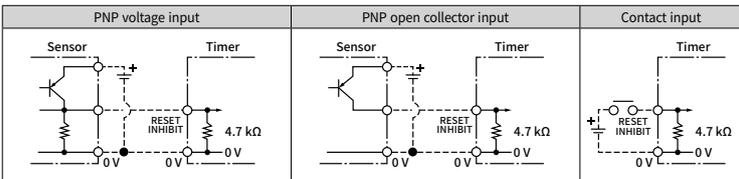


## Input wiring method

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



### When selected by voltage input (PNP)

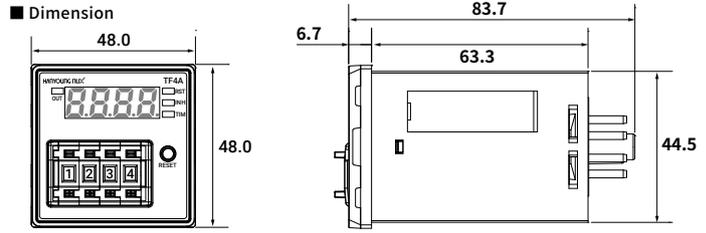


## Specification

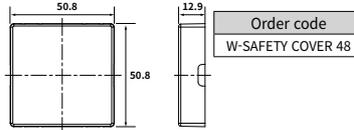
Power voltage	100 - 240 V a.c. 50/60 Hz
Voltage fluctuation rate	Power voltage $\pm 10\%$
Power consumption	3.2 VA
Display	White 7 segments LED
Character size	Character height (8.5 mm), Character width (5.0 mm)
Timer operation	Power On Start
Return time	500 ms max.
Timer operation error	• Power start : $\pm 0.01\% \pm 0.05$ 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 kΩ) • No voltage input : Impedance in case of short circuit (1 kΩ 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 MΩ 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

## Dimension & Panel cutout

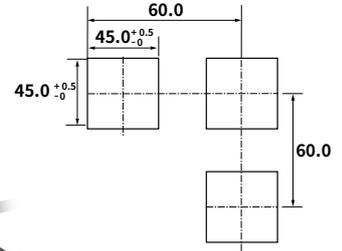
[Unit:mm]



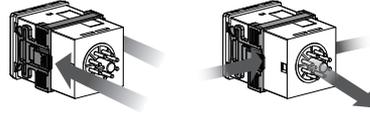
### Front Protective Cover



### Panel cutout

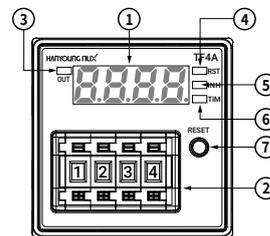


### Bracket assembling - disassembling



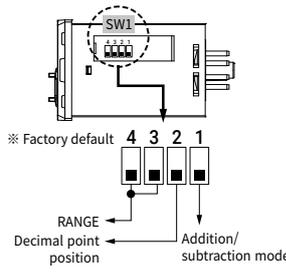
## Function and name of each part

### Front part configuration



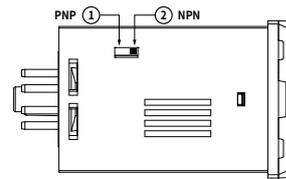
NO.	Name	Function
1	PV display	Time value display
2	SV setting	Time value setting switch
3	Output indicator	Lights up during OUT output operation
4	Reset input indicator	Lights up when external RESET signal is applied
5	Prohibited input indicator	Lights up when external INHIBIT signal is applied
6	Timekeeping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

### Function switch configuration



SW1	Function	
1	ON OFF	Subtraction mode
2 ~ 4	ON OFF	9999 sec
	ON OFF	99 min 59 sec
	ON OFF	59 hrs 59 min
	ON OFF	59 hrs 59 min

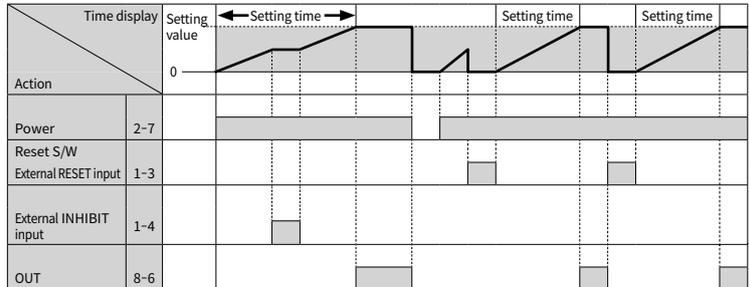
### Input logic selection



- Shut off the power of TF4A.
  - Select the input switch attached to the side of the case according to the input logic voltage (PNP) or non voltage (NPN) you want to use.
  - If you supply power to TF4A after selection is complete, the timer operates according to the selected voltage (PNP)/non-voltage (NPN) input status.
- ※ **Note**) Change the voltage input and no-voltage input selection after the power is turned off.

## Timer operation mode

### Addition mode



### Subtraction mode

