Analog Timer

T48A

INSTRUCTION MANUAL

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.

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HANYOUNG NUX

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

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

⚠ **DANGER**	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
⚠ **WARNING**	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
⚠ **CAUTION**	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

- Please install an appropriate protective circuit on the outside if malfunction, an incorrect operation or failure of the product may be a cause of leading to a serious accident and plan for preventing accidents.
- After mounting the product onto a panel, please use a socket dedicated to the product when connecting with other units and do not turn on the power until completing wiring to prevent electric shock.
- Please turn off the power when mounting/dismounting of the product. This is a cause of electric shock,malfunction, or failure.
- If the product is used with methods other than specified by the manufacturer, then it may lead to injury or property damage.
- In order to use this product properly and safely, we recommend periodic maintenance.
- The warranty of this product (including accessories) is 1 year only when it is used for the purpose it was intended under normal condition.

⚠ CAUTION

- Please do not set "Time" to "0". This can be a cause of malfunction. Also, there could be a time difference in timer operation. Please use it after confirming the time difference.
- Please set or change "Time Range" in the dip switch while the timer is OFF. If the "Time Range" has been changed to other value during the operation, please turn off the timer and turn it back on.
- Since this is not explosion-proof structure, please use in a place where corrosive gas (such as harmful gas, ammonia, etc.), combustible or explosive gas does not occur.
- Please use in a place where there is no direct vibration and a large physical impact to the product.
- Please use in a place where there is no water, oil, chemicals, steam, dust, salt, iron or others
- Please avoid using in a place where excessive amounts of inductive interference or electrostatic and magnetic noise occur.
- Please avoid using in a place where heat accumulation occurs due to direct sunlight or radiant heat.
- Please use in a place where the elevation is below 2,000 m.
- Please make sure to inspect the product if exposed to water since there is a possibility of electric leakage or a risk of fire.
- If there is a lot of noise from the power line, installing an insulated transformer or a noise filter is recommended.
- When the power is being supplied there should be a preparation time for the contact output. Please use a delay relay together when it is used as a signal on the outside of interlock circuit or others.

Suffix code

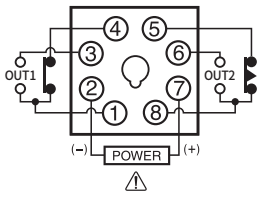
Model	Code			Content	Product configuration
T48A	□-	□	□- □	Analog timer 48.0(W) x 48.0(H) x 59.0(D) mm	• T48A-1B-A • T48A-3B-A • T48A-6B-A • T48A-12B-A • T48A-1C-A • T48A-3C-A • T48A-6C-A • T48A-12C-A
Time range	1			Maximum time : 1sec / 1min / 1hour / 10sec / 10min	
	3			Maximum time : 3sec / 3min / 3hour / 30sec / 30min	
	6			Maximum time : 6sec / 6min / 6hour / 60sec / 60min	
	12			Maximum time : 12sec / 12min / 12hour / 24hour / 48hour	
Control output		B		instantaneous SPDT (1C) + time-limit SPDT (1C)	
		C		time-limit DPDT (2C)	
Power supply voltage			A	24 ~ 240 V a.c. 50/60 Hz or 24 ~ 240 V d.c. dual usage	

Specification

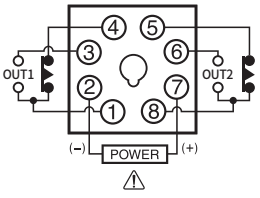
Model		T48A
Timer type		Analog timer
Power voltage		24 ~ 240 V a.c. 50/60 Hz or 24 ~ 240 V d.c. dual usage
Allowable voltage		±10 % of Power supply voltage
Power consumption		• Max. 3.7 VA (24 – 240 V a.c. 50/60 Hz) • Max. 1.5 W (24 – 240 V d.c.)
Operating time range		0.1 sec ~ 48 hour
Operating time error		• Setting error: Max. ±5 % ±0.05 • Repetition error: Max. ±0.3 % • Voltage error: Max. ±0.5 % • Temperature error: Max. ±2 %
Return time		Max. 100 ms
External connection method		8-pin socket
Control output	Operation mode	POWER ON DELAY (fixing)
	Contact composition	• T48A-B : instantaneous SPDT (1c) + time-limit SPDT (1c) • T48A-C : time-limit DPDT (2c)
	Contact capacity	• N.O. (250 V a.c. 3A Resistive load) • N.C. (250 V a.c. 2A Resistive load)
Relay life		• Mechanical life: Min. 10 million cycles • Electrical life: Min. 20,000 cycles (250 V a.c. 2A resistive load)
Insulation resistance		Min. 100 MΩ (500 V d.c. mega, at conductive terminal and non-charged metal which is exposed)
Dielectric strength		2000 V a.c. 60 Hz for 1 minute (at conductive terminal and non-charged metal which is exposed)
Noise immunity		±2kV (between the power terminals, pulse width = 1 us, square wave noise by noise simulator)
Vibration resistance		10 – 55 Hz (for 1 minute) 0.75mm double amplitude 0.75 in each X, Y, Z direction for 2 hours
Shock resistance		300 m/s² (30G) in each X, Y, Z direction for 3 times
Operating ambient temperature		-10 ~ 55 °C (without condensation)
Accessories		Fixing Bracket
Weight (g)		Approx. 82 g
Approval		CE

Connection diagram

■ T48A-B
(instantaneous 1c + time-limit 1c)



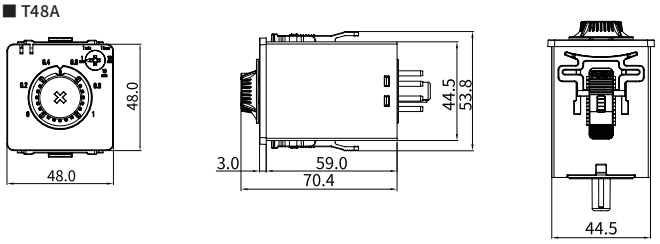
■ T48A-C
(time-limit 2c)



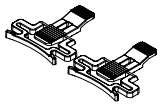
Dimension & Panel cutout

[Unit:mm]

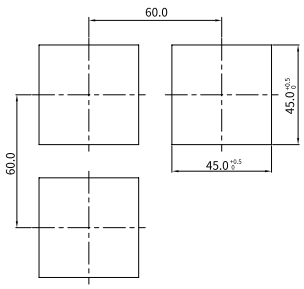
■ T48A



■ Bracket

Code	BRACKET-SCO
Product name	Fixing
Model	
Order code	FIXING BRACKET SCO

■ Panel cutout

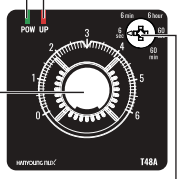


Function and name of each part

Power on indicator •
Turns on when power is applied. Flickers until output occurs, and maintains lighting state when output occurs.

Volume for setting operation time •
Set the operating time by adjusting the volume

• **Output indicator**
Turns on when output is 'ON' and maintains lighting state



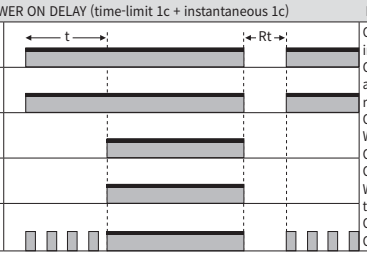
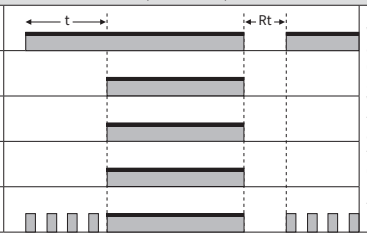
Operation time range selection switch (※change after power is off)		
Time range		Setting time range
T48A-1	1 sec	0.1 ~ 1 sec
	1 min	0.1 ~ 1 min
	1 hour	0.1 ~ 1 hour
	10 sec	1 ~ 10 sec
	10 min	1 ~ 10 min
T48A-3	3 sec	0.3 ~ 3 sec
	3 min	0.3 ~ 3 min
	3 hour	0.3 ~ 3 hour
	30 sec	3 ~ 30 sec
	30 min	3 ~ 30 min
T48A-6	6 sec	0.6 ~ 6 sec
	6 min	0.6 ~ 6 min
	6 hour	0.6 ~ 6 hour
	60 sec	6 ~ 60 sec
	60 min	6 ~ 60 min
T48A-12	12 sec	1.2 ~ 12 sec
	12 min	1.2 ~ 12 min
	12 hour	1.2 ~ 12 hour
	24 hour	2.4 ~ 24 hour
	48 hour	4.8 ~ 48 hour

* When the operating time range is selected as '10sec / 10min, 30sec / 30min, 60sec / 60min', the operating time is converted to 'x10' from the display time on the front panel and is operated.
* When the operating time range is selected as '24hour', the operating time is converted to 'x2' from the display time on the front panel and operated.
* The time unit of the operating time range '24hour / 48hour' is fixed to 'hour'.
* When '48hour' is selected as the operating time range, the operating time is converted into 'x4' from the display time on the front panel and operates.

※ When the switch power is 'ON", the operation time range is not changed. (Ex. 1 sec -> 1 min)
Please turn off the switch power and then change it.

Operation mode

T48A-B	POWER ON DELAY (time-limit 1c + instantaneous 1c)	Rt : Return Time t : Set time
Power	② - ⑦	OUT1 output is an instantaneous output that turns ON at the same time as power is applied, and remains ON until the power is OFF regardless of the set time. When power is applied, OUT2 output remains OFF and timekeeping starts. When the time time reaches the set time, OUT2 output is ON. OUT2 output remains ON until power is turned OFF
OUT1 (instantaneous)	① - ③	
OUT2 (time-limit)	⑥ - ⑧	
UP indicator light	OUT2 output display	
POW indicator light	Power on indicator	



T48A-C	POWER ON DELAY (time-limit 2c)	Rt : Return Time t : Set time
Power	② - ⑦	When power is applied, OUT1 output and OUT2 output remain OFF, and timekeeping starts. When the time reaches the set time, OUT1 output and OUT2 output are turned ON at the same time. OUT1 output and OUT2 output remain ON until power is turned OFF.
OUT1 (time-limit)	① - ③	
OUT2 (time-limit)	⑥ - ⑧	
UP indicator light	OUT1, OUT2 output display	
POW indicator light	Power on indicator