Digital Counter & Timer

HANYOUNG NUX

T21

INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.
Please check whether the product is the exactly same as you ordered.
Before using the product, please read this instruction manual carefully.
Please keep this manual where you can view at any time

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Safety information

Alerts declared in the manual are classified to Danger, Warning and Caution by their criticality

⚠ DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
⚠ WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
⚠ CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

⚠ Danger

Do not touch or contact the input/output terminals because they may cause electric shock.

⚠ Warning

- If there is a possibility of an accident caused by errors or malfunctions of this product, install external protection circuit to prevent the accident.
- 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 : 250 V 0.5 A)
- To prevent defection or malfunction of this product, supply proper power voltage in accordance with the rating.
- 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.
- 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.
- Do not decompose, modify, revise or repair this product. This may cause malfunction, electric shock or fire.
- Attach or detach this product while the power is off. Otherwise, it may cause malfunction or electric shock.

⚠ Caution

- The contents of this manual may be changed without prior notice.
- Please check whether the product you purchased is the exactly same as you ordered.
- It you use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.
- Please check whether the product has no damage or abnormality during delivery.
- Do not use this product at any place with direct vibration or impact.
- Do not use this product at any place with liquid, oil, medical substances, dust, salt or iron contents. (Pollution level 1 or 2)
- Do not polish this product by substances such as alcohol or benzene.
- Do not use this product at any place with excessive induction trouble, static electricity or magnetic noise.
- Do not use this product at any place with possible thermal accumulation due to direct sunlight or heat radiation.
- Install this product at place under 2,000m in altitude.
- When the product gets wet, the inspection is essential because there is danger of an electric leakage or fire.
- If there is an excessive noise from power supply, it is recommended to use insulating transformer and noise filter. The noise filter must be attached to the panel grounded and wiring between the filter output side and power supply terminal should be as short as possible.
- If gauge cables are arranged too closely, the effect on noise may occur.
- Do not connect anything to the unused terminals.
- After checking polarity of terminal, connect wires to the right position.
- Install a switch or circuit breaker that allows the operator to immediately turn OFF the power, and label it to clearly indicate its function.
- For the continuous and safe use of this product, the periodic maintenance is recommended.
- Some parts of this product have limited life span, and others are changed by their usage.
- The warranty period of this product including parts is one year if this product is properly used.
- When power is on, the preparation period of contact output is required. In case of using signals of external interlock circuit, use a delay Relay.

Features

- Timing Relay (4a4b)
- Appearance 21.4 (W) X 28 (H) mm Timing relay
- Plug in type (14 pins)
- Customer sets time range and operation mode.
- Various time range (min / sec : 0.1 sec ~ 60 min, hrs : 0.3 hrs ~ 24 hrs)
- Multi operation mode (Power ON delay, Interval, Flicker OFF start, Flicker ON start)

Suffix code

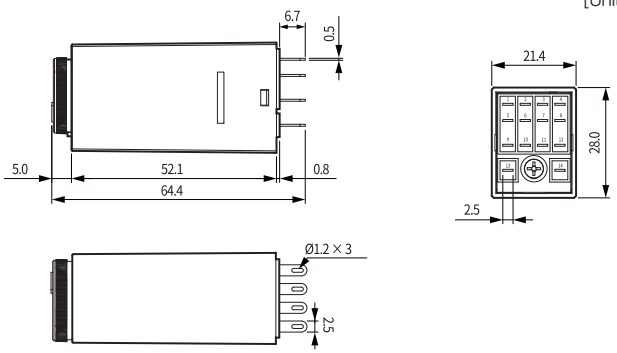
Model	Code			Description	
T21 –	□	– □	□	Timing Relay	
Time Range	1			1 sec, 10 sec, 1 min, 10 min	Select by DIP switch
	3			3 sec, 30 sec, 3 min, 30 min	
	6			6 sec, 60 sec, 6 min, 60 min	
	3H			3 hrs, 6 hrs, 12 hrs, 24 hrs	
Contact		4		4a4b	
Power supply voltage			A10	100 – 120 V a.c.	
			A20	200 – 230 V a.c.	
			D24	24 V d.c.	

Specification

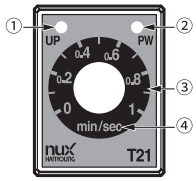
Model	AC	T21 – 1 / 3 / 6 / 3H – 4A10
	AC	T21 – 1 / 3 / 6 / 3H – 4A20
	DC	T21 – 1 / 3 / 6 / 3H – 4D24
Power supply voltage	AC	100 – 120 V a.c. 50/60 Hz
	AC	200 – 230 V a.c. 50/60 Hz
	DC	24 V d.c.
Power consumption	AC	3.1 VA max (230 V a.c 60 Hz)
	DC	1.5 W max (24 V d.c)
Reset time		100 ms max
Time Range	1	0.1 sec ~ 10 min
	3	0.3 sec ~ 30 min
	6	0.6 sec ~ 60 min
	3H	0.3 hrs ~ 24 hrs
Time tolerance		repetition tolerance : ±1 % max. (ratio of maximum scale) setting tolerance : ±10 % max. (ratio of maximum scale)
Control output	Output mode	Power on delay, Interval, Flicker OFF Start, Flicker ON Start
	Contact construction	4a4b
	Capacity	250 V a.c 3A Resistive load
Life expectancy		Mechanical : 10 million operations min. Electrical : 200,000 operations min
Insulation resistance		100 MΩ min (at 500 V d.c, Between current-carrying terminals and exposed noncurrent-carrying metal parts.)
Dielectric strength		2000 V a.c 50/60 Hz 1 minute (Between current-carrying terminals and exposed noncurrent-carrying metal parts.)
Noise immunity		±2 kV (Between power terminal, pulse width ±1 μs, square wave noise by noise simulator)
Vibration resistance		10 – 55 Hz (For 1 min), Double amplitude 0.75mm, X,Y,Z each direction for 1 hour
Shock resistance		300 ㎨ X, Y, Z each direction for 3 times
Ambient temperature		–10 ~ 50 ℃ (Without condensation)
Storage temperature		–25 ~ 65 ℃ (Without condensation)
Ambient humidity		35 ~ 85 % RH
Weight		Approx. 42 g

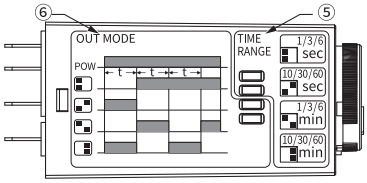
Appearance

[Unit : mm]



Part name and function

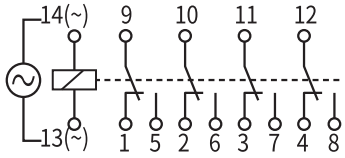




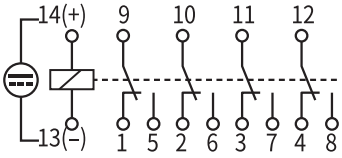
	Name	Function
①	Output ON indicator lamp (UP)	After setting time, light ON (Red) at the same time with output operation
②	Power indicator lamp (PW)	Light ON after power ON (Green)
③	Time setting knob	Set timer operation time, Setting time can be changed during operation of timer.
④	Time unit	Time unit of setting time (min/sec, hrs).
⑤	Time range setting (TIME RANGE)	Depend on suffix code, Select time range by DIP switches on the side
⑥	Operating mode setting (OUT MODE)	Select output mode by DIP switches on the side

Connection diagram

■ T21 – 1/3/6/3H – 4A10
■ T21 – 1/3/6/3H – 4A20



■ T21 – 1/3/6/3H – 4D24

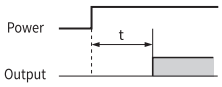
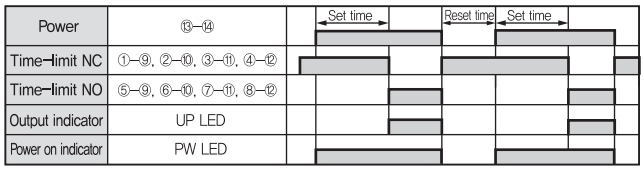
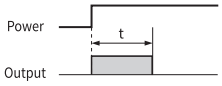
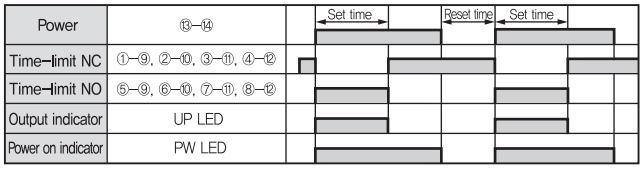
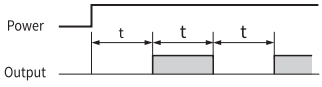
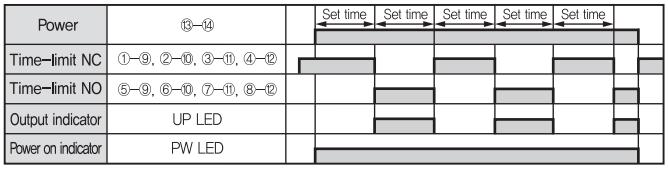
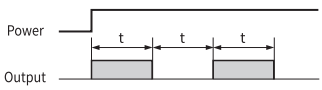
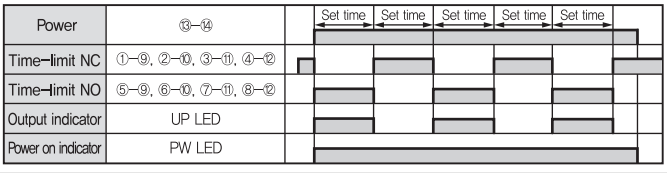


Time Range

Model	Time Range	Time setting Range	Setting
T21–1–4A10 T21–1–4A20 T21–1–4D24	1 sec	0.1 ~ 1 sec	Factory set
	10 sec	1 ~ 10 sec	
	1 min	0.1 ~ 1 min	
	10 min	1 ~ 10 min	
T21–3–4A10 T21–3–4A20 T21–3–4D24	3 sec	0.3 ~ 3 sec	Factory set
	30 sec	3 ~ 30 sec	
	3 min	0.3 ~ 3 min	
	30 min	3 ~ 30 min	
T21–6–4A10 T21–6–4A20 T21–6–4D24	6 sec	0.6 ~ 6 sec	Factory set
	60 sec	6 ~ 60 sec	
	6 min	0.6 ~ 6 min	
	60 min	6 ~ 60 min	
T21–3H–4A10 T21–3H–4A20 T21–3H–4D24	3 hrs	0.3 ~ 3 hrs	Factory set
	6 hrs	0.6 ~ 6 hrs	
	12 hrs	1.2 ~ 12 hrs	
	24 hrs	2.4 ~ 24 hrs	

※ Please turn off power to change Time range

Operation

Output Mode	Operation Description	Timing Chart	Setting
ON–Delay  ※ t : Set time	When the power is ON, the output will be ON after setting time.		Factory set
Interval  ※ t : Set time	When the power is ON, the output is ON and it will be OFF after setting time.		
Flicker OFF–start  ※ t : Set time	When the power is ON, the output is OFF and it repeatedly outputs OFF and ON with the setting time interval.		
Flicker ON–start  ※ t : Set time	When the power is ON, the output is ON and it repeatedly outputs ON and OFF with the setting time interval.		

※ Select output mode by 2 switches at the bottom of the four switches.