

LCD TIMER LF4N

INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG NUX Co.,Ltd. product.
Please check whether the product you purchased is the exactly same as you ordered. Before using this product, please read instruction manual carefully.



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■ Safety Information

Please read safety information carefully before use and then use this product properly. Safety information described in this manual contains important contents related with safety. So please follow the instructions accordingly. Safety information is composed of DANGER, WARNING and CAUTION.



DANGER

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



WARNING

1. If there is a possibility of an accident caused by errors or malfunctions of this product, install external protection circuit to prevent the 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 : 250 V 0.5 A)
3. To prevent deflection or malfunction of this product, supply proper power voltage in accordance with the rating.
4. To prevent electric shock or malfunction of this product, do not supply the power until the wiring is completed.
5. Since this product is not designed to explosion-protective structure, do not use it at the places which have flammable or explosive gas.
6. Do not disassemble, modify, revise or repair this product. This may cause malfunction, electric shock or fire.
7. Attach or detach this product while the power is off. Otherwise, it may cause 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. Due to the danger of electric shock, use this product installed onto a panel while an electric current is applied.



CAUTION

1. The contents of this manual may be changed without prior notice.
2. Please check whether the product you purchased is the exactly same as you ordered.
3. Please check whether the product has no damage or abnormality during delivery.
4. Do not use this product with time setting "0"
5. Change setting time in condition of "Power OFF". If change setting time in condition of "Power On", reset should be done.
6. Do not use the product at the places which have 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. (Pollution level 1 or 2)
9. Do not polish this product by substances such as alcohol or benzene.
10. Do not use this product at any place with excessive induction trouble, 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 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.
15. If gauge cables are arranged too closely, the effect on noise may occur.
16. Do not connect anything to the unused terminals.
17. After checking polarity of terminal, connect wires to the right position.
18. When this product is connected to a panel, use a circuit breaker or switch approved by IEC947-1 or IEC947-3.
19. Install the circuit breaker or switch at near place for convenient use.
20. Write down on a label that the operation of circuit breaker or switch disconnects the power since the device is installed.
21. For the continuous and safe use of this product, the periodic maintenance is recommended.
22. Some parts of this product have limited life span, and others are changed by their usage.
23. The warranty period of this product including parts is one year if this product is properly used.
24. 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.

■ Model

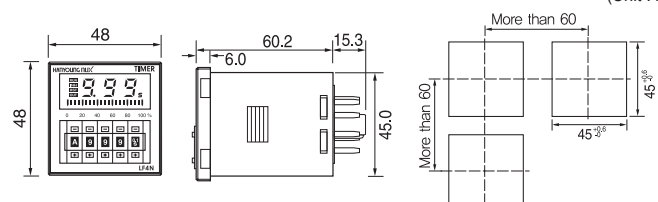
Model	LF4N-A	LF4N-B	LF4N-C	LF4N-D
Power voltage	24 - 240 V a.c / d.c 50 - 60 Hz			
Socket	8 Pin socket			11 Pin socket
Output	Time limit 1c	Time limit 1c Instantaneous 1c	Time limit 2c	Time limit 1c
Timing range	10 kinds of timing ranges			
Output operations	10 kinds	Fixing A mode		10 kinds
Input signal	RESET, START, INHIBIT	No Input		RESET, START, INHIBIT

■ Specification

Model	LF4N	
Power voltage	24 - 240 V a.c / d.c 50 - 60 Hz	
Display	LCD display	
Voltage regulation	±10 % from supply voltage	
Power consumption	LF4N-A, LF4N-D	1.5 W (240 V d.c), 4.4 VA (240 V a.c)
	LF4N-B, LF4N-C	2.2 W (240 V d.c), 7.2 VA (240 V a.c)
Resetting time	Max. 0.1 second	
Minimum Signal Time	LF4N-A, LF4N-D	Over 20 ms (START, INHIBIT, RESET)
Input condition	START Input	• Non voltage input
	INHIBIT Input	Impedance in a short circuit : Max. 2 kΩ
	RESET Input	Residual voltage in a short circuit : Max. 0.7 V d.c Impedance in open : Min. 100 kΩ
Repeatability of operating time	LF4N-A, LF4N-D	Max. ±0.01 % ±0.05 second (In case of Power-on start)
	LF4N-B, LF4N-C	Max. ±0.005 % ±0.03 second (In case of Signal-on start)
Control output	Contact relay : 250 V a.c 3 A (Load Resistance)	
Insulation Resistance	Min 100 MΩ (Based on 500 V d.c)	
Dielectric strength	2000 V a.c 50 / 60 Hz for 1 minute	
Impulse Voltage	± 2000 V Max.	
Vibration	Mechanical durability	10 - 55 Hz double amplitude 0.75 mm
	Malfunction durability	10 - 55 Hz double amplitude 0.5 mm
Shock	Mechanical durability	300 % (Less than 30 G)
	Malfunction durability	100 % (Less than 10 G)
Life expectancy	Mechanical	Over 1,000 million (Open & Short frequency : 180 / min)
	Electrical	Over 10 million (250 V a.c 3 A load Resistance)
Terminal type	Plug 8PIN, Plug 11PIN	
Operation ambient temperature	-10 ~ 55 °C (No condensation)	
Storage temperature	-20 ~ 65 °C (No condensation)	
Operation ambient humidity	35 ~ 85 % R.H.	
Weight	About 110 g (Include Fixing bracket)	

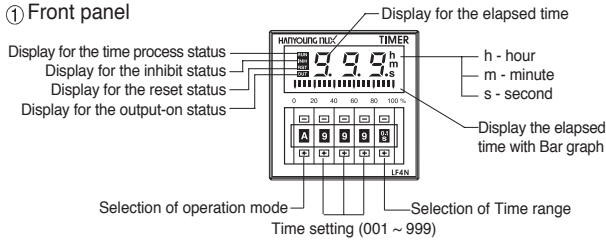
■ Dimensions and Panel Cutout

(Unit : mm)



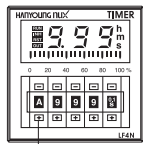
Identification of Each Part

① Front panel



② Selection of operation mode

To select operation mode, please push dip switch in the left side of front panel. LF4N has 10 kinds of operation modes and selected mode is displayed in front of panel as like A,B,C,D,E,F,G,H,I,J.



Display window of operation mode

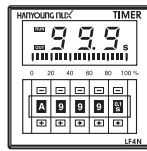
MODE	Function of operation
A	SIGNAL ON DELAY
B	FLICKER ON START
C	SIGNAL ON/OFF DELAY
D	SIGNAL OFF DELAY
E	INTERVAL
F	ONE-SHOT & FLICKER
G	INTEGRATION
H	INTERVAL DELAY
I	FLICKER ONE-SHOT
J	POWER ON START

③ Time setup

User can setup time by 3 dip switches in front of panel. (Time set-up : 001 ~ 999)



Dip switches for time setup (001 ~ 999)

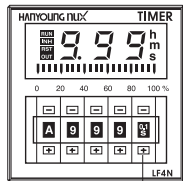


After 99.9 seconds

④ Selection of time unit

To select time unit, please push dip switch in the right side of front panel.

LF4N has 10 kinds of time units and selected time unit is displayed in front of panel as like 0.01s, 0.1s, s, 0.1m, m, 0.1h, h, 10h, S, M.



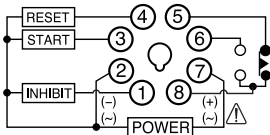
Display window for the time unit

Time unit	Time range
0.01 s	0.01 s ~ 9.99 s
0.1 s	0.1 s ~ 99.9 s
s	1 s ~ 999 s
0.1 m	0.1 m ~ 99.9 m
m	1 m ~ 999 m
0.1 h	0.1 h ~ 99.9 h
h	1 h ~ 999 h
10 h	10 h ~ 9990 h
S	0 m 01 s ~ 9 m 59 s
M	0 h 01 m ~ 9 h 59 m

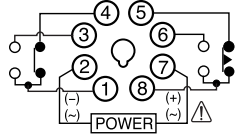
Connections

LF4N is free voltage LCD timer (24 - 240 V a.c / d.c) so please pay attention about polarity when you using DC voltage.

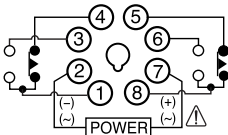
■ LF4N-A



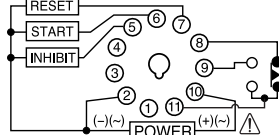
■ LF4N-B



■ LF4N-C



■ LF4N-D



Selection of Up / Down Mode

According to Up/Down mode, output operates with Up mode or Down mode.

① Open case.

② Select Up / Down mode by jumper switch.



Up Mode (Initial mode)

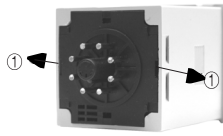


Down Mode

※ Up / Down jumper is in the PCB.

Case Open

Please turn off power when you open case.



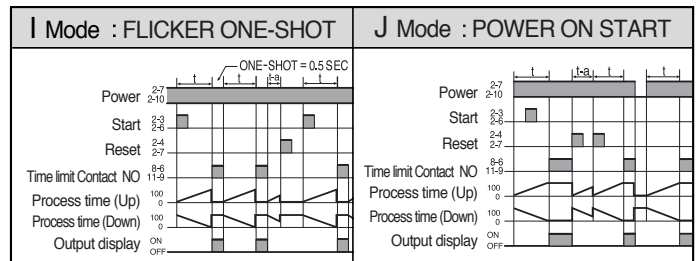
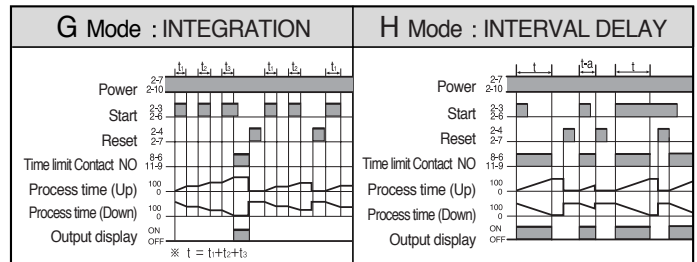
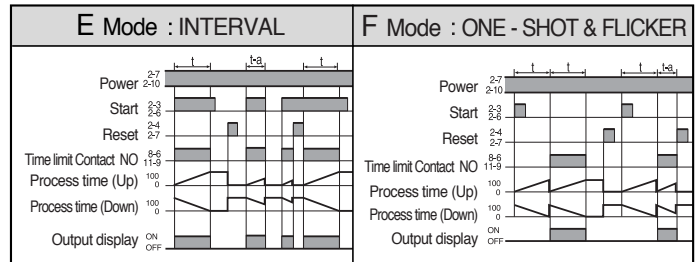
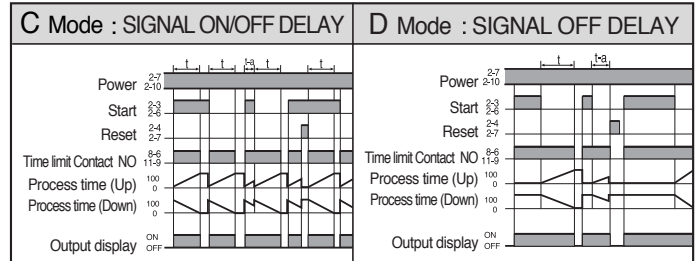
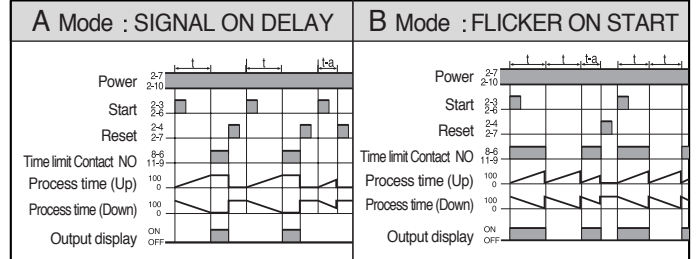
① Please widen the lock of product with driver or tweezers.



② Push it toward the front panel

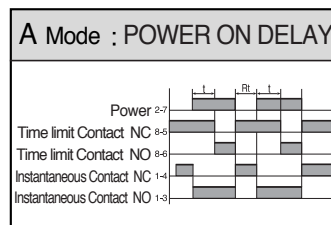
Operation Mode

① LF4N-A, LF4N-D

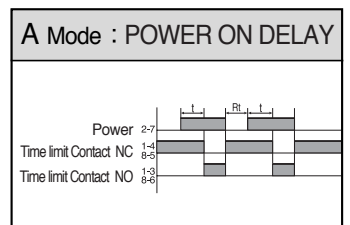


※ t : Set Time, t - a : Within set time

② LF4N-B



③ LF4N-C



※ t : Set Time, Rt : Resetting time (Over 100 ms)