LE8N Series

DIN W48×H24mm, Indication Only, LCD Timer (Hour Meter)

▣ Features

- Upgraded features
  Voltage input and backlight model, time specifications
- No additional power due to internal battery
- Signal input method: No-voltage input, voltage input, free voltage input
- Screw terminal type (attaching terminal cover)
- LCD display
- IP66 protection structure

⚠ **Please read "Caution for your safety" in operation manual before using.**

CE c🅄🅄us

▣ Ordering Information

LE	8	N	-	B	N	-	L

Backlight	No mark	None
	L	Backlight function
Input type	N	No-voltage (Small signal) input
	V	Voltage input
	F	Free voltage input
Power supply	B	Internal lithium battery
Size	N	DIN W48×H24mm
Digit	8	99999999 (8 digit)
Item	LE	LCD Timer

▣ Specifications

Model	LE8N-BN	LE8N-BN-L	LE8N-BV	LE8N-BV-L	LE8N-BF
Digit	8 digit (0 to 99999999)				
Digit size	W3.4 × H8.7mm				
Display method	LCD Zero Blanking type (character height size: 8.7mm)				
Operation method	Count up				
Power supply	Built-in battery				
Battery life cycle	Approx. over 10 years at 20℃				
Backlight power supply	—	24VDC±10%	—	24VDC±10%	—
Input method	No-voltage input		Voltage input		Free voltage input
Count input (Counter)	Residual voltage: Max. 0.5VDC Short-circuit impedance: Max. 10kΩ Open-circuit impedance: Min. 750kΩ		"H" level voltage: 4.5-30VDC "L" level voltage: 0-2VDC		"H" level voltage: 24-240VAC/6-240VDC "L" level voltage: 0-2VAC/0-2.4VDC
RESET input	No-voltage input		Voltage input		No-voltage input
Min. signal width	SIGNAL INPUT, RESET input: Min. 20ms				
Time specification (TS1)	999 9.5 9.59 (h.m.s), 9999 9.5 9.9 (h.m), 99999 9.59 (h.m)				
Time specification (TS2)	999 9.23.59 (d.h.m), 9999d23.9 (d.h), 99999999 (s)				
Time specification (TS3)	9999h5 9.9 (h.m), 99999h59 (h.m), 99999 9.9h (h)				
Time error	±0.01% (time error, temperature error)				
External set switch	SW1[※1], SW2[※2], SW3[※3]				
Insulation resistance	Min. 100MΩ (at 500VDC megger)				
Dielectric strength[※4]	2,000VAC 60Hz for 1minute				
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 1 hour			
	Malfunction	0.3mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 10 min.			
Shock	Mechanical	300m/s^2 (approx. 30G) in each X, Y, Z direction for 3 times			
	Malfunction	100m/s^2 (approx. 10G) in each X, Y, Z direction for 3 times			
Environment	Ambient temperature	-10 to 55℃, storage: -25 to 65℃			
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH			
Protection structure	IP66 (using waterproof rubber for front panel)				
Accessory	Mounting bracket, Rubber waterproof ring				
Approval	CE c🅄🅄us				
Weight[※5]	Approx. 96g (approx. 50g)				

※1: SW1 is the front panel RESET key enable/disable set switch.　　※2: SW2 is the time range set switch.
※3: SW3 is available to select time specification TS1, TS2, or TS3.
※4: No-voltage input, voltage input: between terminals and the case / Free voltage input: between the free voltage input terminal and the RESET input terminal, between terminals and the case
※5: The weight includes packaging. The weight in parentheses is for unit only.
※Environment resistance is rated at no freezing or condensation.

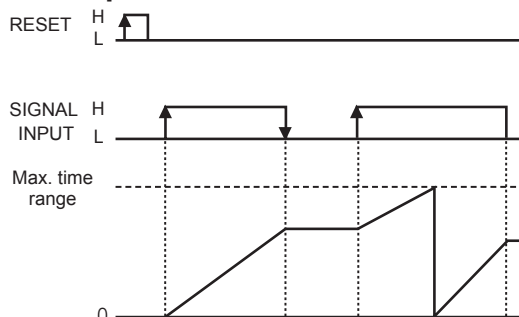**Autonics**

LCD Timer

(A)
Photoelectric
Sensors

(B)
Fiber
Optic
Sensors

(C)
Door/Area
Sensors

(D)
Proximity
Sensors

(E)
Pressure
Sensors

(F)
Rotary
Encoders

(G)
Connectors/
Sockets

(H)
Temperature
Controllers

(I)
SSRs / Power
Controllers

(J)
Counters

(K)
Timers

(L)
Panel
Meters

(M)
Tacho /
Speed / Pulse
Meters

(N)
Display
Units

(O)
Sensor
Controllers

(P)
Switching
Mode Power
Supplies

(Q)
Stepper Motors
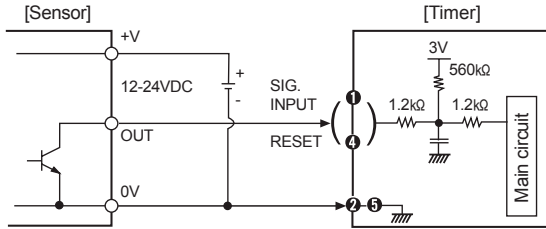& Drivers
& Controllers

(R)
Graphic/
Logic
Panels

(S)
Field
Network
Devices

(T)
Software

◨ Connections

Input type	No-backlight	Backlight function
No-voltage input type	● LE8N-BN[※1] SIGNAL INPUT / RESET	● LE8N-BN-L[※2] SIGNAL INPUT / RESET / 24VDC BACKLIGHT
Voltage input type	● LE8N-BV[※1] SIGNAL INPUT / UP/DOWN RESET / 4.5-30VDC	● LE8N-BV-L[※2] SIGNAL INPUT / RESET / 4.5-30VDC / 24VDC BACKLIGHT ※Backlight power is available as signal input (SIGNAL INPUT, RESET).
Free voltage input type	● LE8N-BF ⚠ 24-240VAC 50/60Hz / ⚠ 6-240VDC SIGNAL INPUT / RESET ※Terminal (1, 2) and (4, 5) are insulated inside.	—

※1: Terminal 2 and 5 are connected inside. (Non-isolated)   ※2: Terminal (1, 2, 3) and (4, 5) are insulated inside.
※Use reliable contacts enough to flow 5µA current.

◨ Dimensions

(unit: mm)

● **Bracket**

48 / 4 / 54 / 24 / 36 / 22

● **Panel cut-out**

Min. 55 / Min. 37 / $22.2^{+0.3}_{0}$ / $45^{+0.6}_{0}$

◨ Time Operation

RESET   H L

SIGNAL INPUT   H L

Max. time range

0

LE8N Series

■ Input Connections

◎ No-voltage input (standard sensor: NPN open collector output type)

● **Solid-state input**

[Sensor] [Timer]

+V

12-24VDC

SIG. INPUT ❶

RESET ❹
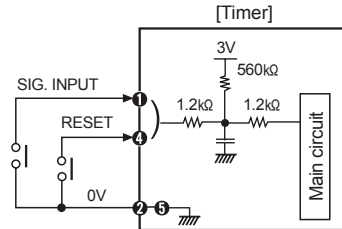
OUT

0V

3V
560kΩ
1.2kΩ 1.2kΩ

Main circuit

❷ ❺

※When power is applied to terminal No ❶ and ❹, input terminal circuit can be broken and a malfunction can occur. (NPN output, PNP output, PNP open collector output type sensor cannot be used.)

※❷ and ❺ are connected inside.

※For backlight function model, the input terminals are ❶, ❸ and the GND terminal is ❷ .

● **Contact input**

[Timer]

SIG. INPUT ❶

RESET ❹

0V

3V
560kΩ
1.2kΩ 1.2kΩ

Main circuit

❷ ❺

※Please use reliable contacts enough to flow 3VDC 5μA of current.

◎ Voltage input (standard sensor: PNP open collector output type)
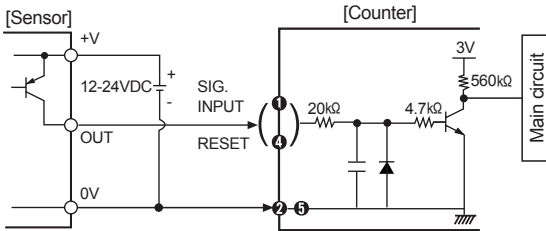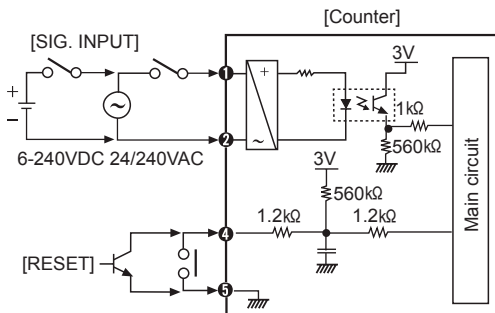
● **Solid-state input**

[Sensor] [Counter]

+V

12-24VDC

SIG. INPUT ❶

RESET ❹

OUT

0V

3V
560kΩ
20kΩ 4.7kΩ

Main circuit

❷ ❺

※For backlight function model, the input terminals are ❶, ❸ and the GND terminal is ❷ .

● **Contact input**

[Counter]

SIG. INPUT ❶

RESET ❹

4.5-30VDC

3V
560kΩ
20kΩ 4.7kΩ

Main circuit

❷ ❺
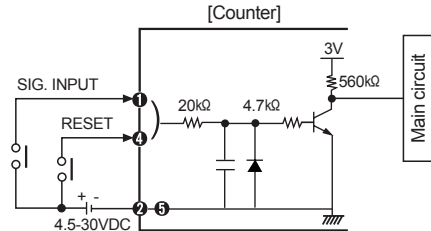
※Please use reliable contacts enough to flow 3VDC 5μA of current.

◎ Free voltage input

[Counter]

[SIG. INPUT] ❶

❷

6-240VDC 24/240VAC

[RESET] ❹

❺

3V
1kΩ
560kΩ
3V
560kΩ
1.2kΩ 1.2kΩ

Main circuit

※AC type proximity sensor cannot be used as the source of count input signals.

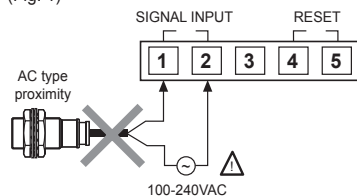※Input terminal (❶, ❷)and reset terminal (❹, ❺) are insulated inside.

※It is not possible to reset with AC power or DC power.

※When relay contact is used as the source of RESET signal, please use reliable contacts enough to flow 3VDC 5μA of current.

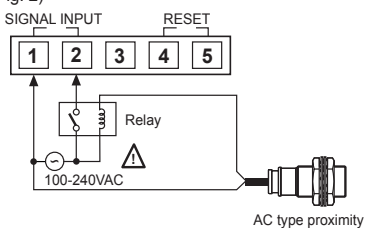### ◎ Input from AC type proximity sensor

In case of free voltage input type, do not connect AC proximity sensors instead of a switch as shown in the figure 1. It may cause malfunction due to sensor's leakage current. Connect a relay as shown in the figure 2.
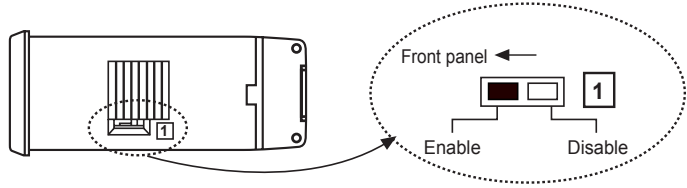
(Fig. 1)

SIGNAL INPUT RESET

| 1 | 2 | 3 | 4 | 5 |

AC type proximity

100-240VAC

<Example of wrong connection>

(Fig. 2)

SIGNAL INPUT RESET

| 1 | 2 | 3 | 4 | 5 |

Relay

100-240VAC

AC type proximity

<Example of correct connection>

Autonics

LCD Timer

■ Set Switch

◎ SW1 (① switch)

SW1 is a switch to Enable/Disable the
front panel RESET key.
※Factory default: Enable

Front panel ←

Enable   Disable

◎ SW2 (② switch)

SW2 is a switch for setting time range.
※Factory default: 999 9.5 9.59 (h.m.s)

→ Front panel

① ② ③
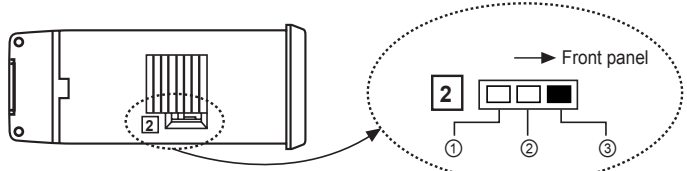
※Refer to "**<Time range>**" table of
SW3 for ①, ②, ③ descriptions.

◎ SW3 setting

SW3 is a switch for setting time sepcification. TS1, TS2, TS3 (※Factory default: TS1)

LITHUM BA
3V
TS1 TS2 TS3
+

<Set TS1>   <Set TS2>   <Set TS3>
TS1 TS2 TS3   TS1 TS2 TS3   TS1 TS2 TS3

→ Battery
holder
direction
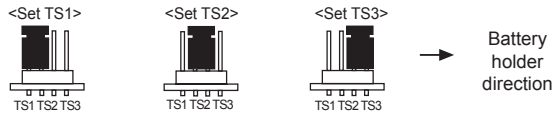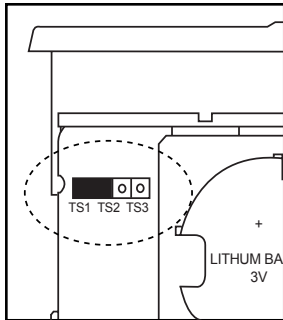
<Time range>[1]

	TS1	TS2	TS3
①	hour min. 99999 9.59	sec. 99999999	hour 99999 9.9 h
②	hour min. 9999 9.5 9.9	day hour 9999 d 23.9	hour min. 99999 h 59
③	hour min. sec. 999 9.5 9.59	day hour min. 999 9.23.59	hour min. 9999 h 5 9.9

※1: Time range is set as SW2, SW3 combination.

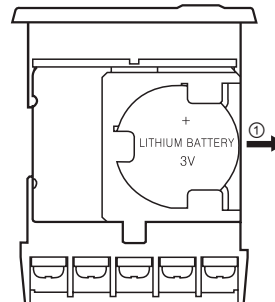## ■ Case Detachment And Battery Replacement

● Case detachment

③
②

①
③
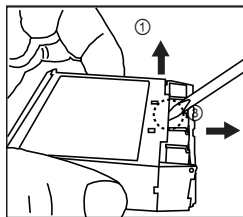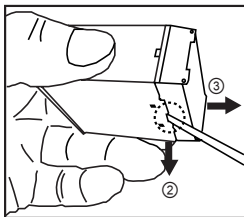
※Hold up Lock part toward ①, ② of the product with the
tool and pull toward ③ to detach the case.
⚠When using the tools, be careful not to be wounded.

● Battery replacement

+
LITHIUM BATTERY
3V
①

1. Detach the case.
2. Push the battery and detach it toward ①.
3. Insert a new battery with correct alignment of polarity
   pushing it toward opposite of ①.
※The battery is sold separately. Please replace a battery
   by yourself.
※Do not burn up or disassemble the lithium battery.