Autonics

COUNTER/TIMER LA8N/LE8N SERIES

INSTRUCTION MANUAL



Thank you for choosing our Autonics product. Please read the following safety considerations before use.

Safety Considerations

XPlease observe all safety considerations for safe and proper product operation to avoid hazards

※▲ symbol represents caution due to special circumstances in which hazards may occur.

▲ Warning Failure to follow these instructions may result in serious injury or death.

▲ Caution Failure to follow these instructions may result in personal injury or product damage.

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment) ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
- Failure to follow this instruction may result in fire, personal injury, or economic loss
- Install on a device panel to use.
 Failure to follow this instruction may result in fire
- 3. Do not connect, repair, or inspect the unit while connected to a power source.
- Failure to follow this instruction may result in fire.

 4. Check 'Connections' before wiring.
- Failure to follow this instruction may result in fire.

- Failure to follow this instruction may result in line.

 5. Do not disassemble or modify the unit.

 Failure to follow this instruction may result in fire.

 6. Since Lithium battery is embedded in the product, do not disassemble or burn the unit. Failure to follow this instruction may result in fire.

⚠ Caution

- When connecting the power/sensor input and relay output, use AWG 20 (0.50mm²) cable or over, and tighten the terminal screw with a tightening torque of 0.74 to 0.90N·m. Failure to follow this instruction may result in fire or malfunction due to contact failure.

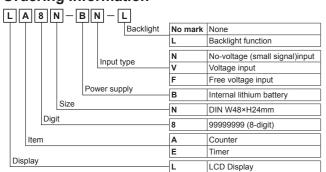
 2. Use the unit within the rated specifications.

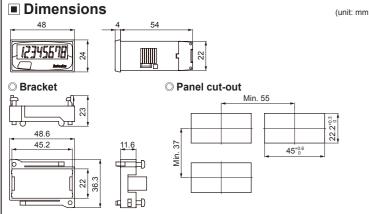
 Failure to follow this instruction may result in fire or product damage.
- 3. Use dry cloth to clean the unit, and do not use water or organic solvent.
- Failure to follow this instruction may result in fire.

 4. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present. Failure to follow this instruction may result in fire or explosion.

 S. Keep metal chip, dust, and wire residue from flowing into the unit. Failure to follow this instruction may result in fire or product damage.

Ordering Information





%The above specifications are subject to change and some models may be discontinued without notice.

&Be sure to follow cautions written in the instruction manual and the technical descriptions
(catalog, homepage).

Specifications

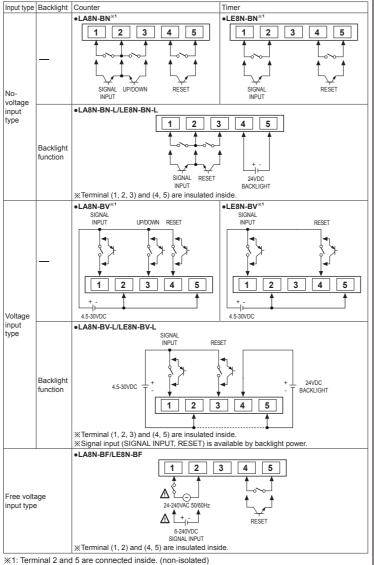
Model	LA8N Series (Counter)					LE8N Series (Timer)					
	LA8N-BN	LA8N-BN-L	LA8N-BV	LA8N-BV-L	LA8N-BF	LE8N-BN	LE8N-BN-L	LE8N-BV	LE8N-BV-L	LE8N-BF	
Digit	8-digit (count up, count down, count up/down:-9999999 to 99999999 / count up: 0 to 99999999)					8-digit (0 to 99999999)					
Digit size	W3.4×H8.7mm										
Display method	LCD Zero Blanking type (character height size: 8.7mm)										
Operation method	count up, count down, count up/down	Count up	count up, count down, count up/down	Count up	Count up	Count up					
Power supply	Built-in battery										
Battery life cycle	Approx. over 7 years at 20°C					Approx. over 10 years at 20°C					
Backlight power supply	· —	24VDC= ±10%		24VDC= ±10%			24VDC= ±10%		24VDC= ±10%	_	
Input method	No-voltage input		Voltage input		Free voltage input	No-voltage input		Voltage input		Free voltage input	
Count input (Counter) Start input (Timer)	Residual voltage: max. 0.5VDC::: Short-circuit impedance: max. 10kΩ Open-circuit impedance: min. 750kΩ		[H]: 4.5-30VDC== [L]: 0.2VDC		[H]: 24-240VAC~/ 6-240VDC== [L]: 0-2VAC/ 0-2.4VDC	Residual voltage: max. 0.5VDC== Short-circuit impedance: max. 10kΩ Open-circuit impedance: min. 750kΩ		[H]: 4.5-30VDC== [L]: 0.2VDC		[H]: 24-240VAC~/ 6-240VDC== [L]: 0-2VAC/ 0-2.4VDC	
RESET input	No-voltage input		Voltage input N		No-voltage input	No-voltage input		Voltage input		No-voltage input	
Min. input signal width	UP/DOWN, RESET input : approx. 20ms	RESET input : approx. 20ms	UP/DOWN, RESET input : approx. 20ms	RESET input : approx. 20ms	RESET input : approx. 20ms	SIGNAL INPUT, RESET input: approx. 20ms			pro remage impair		
Max. counting speed	1cps / 30cps / 1kcps 20cps					_					
Time specification (TS1)	-					99995959 (h.m.s), 99999599 (h.m), 99999959 (h.m)					
Time specification (TS2)	_					99992359 (d.h.m), 99994239 (d.h), 99999999 (s)					
Time specification (TS3)	_					9999h599 (h.m), 99999h59 (h.m), 9999999h (h)					
Time error	_				±0.01% (Time error, Temperature error)						
External set switch	SW1 ^{×1} , SW2 ^{×2} , SW3 ^{×3} SW1 ^{×1} , SW3 ^{×3}					SW1 ^{×1} , SW2 ^{×4} , SW3 ^{×5}					
Insulation resistance	Over 100M Ω (at 500VDC megger)										
Dielectric strength ^{×6}	2,000VAC 60Hz for 1minute										
Vibra- Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour										
tion Malfunction	0.3mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minutes										
Shock Mechanical	300m/s² (approx. 30G) in each X, Y, Z direction for 3 times										
Malfunction	100m/s² (approx. 10G) in each X, Y, Z direction for 3 times										
Enviro- Ambient temp.	-10 to 55°C, storage	-10 to 55°C, storage: -25 to 65°C									

- nment Ambient humi. 35 to 85%RH, storage: 35 to 85%RH
- Protection structure IP66 (when using waterproof rubber for front panel, IEC standard) Accessory ng bracket, rubber waterproof ring
- (£ 2**91**)_{US}
- ight^{x7} Approx. 96g (approx. 50g): SW1 is the front panel RESET key enable/disable set switch.
 - X2: SW2 is the max. counting speed set switch. ※3: SW3 is the decimal point set switch *5: SW3 is available to select time specification TS1. TS2. or TS3.

XUse reliable contacts enough to flow 3VDC 5µA current

- X4: SW2 is the time range set switch.
 X5: SW3 is available to select time specification TS1, TS2, or TS3.
 X6: No-voltage input; between all terminals and the case / Free voltage input; between the free voltage input terminal and the RESET input terminal, between all terminals and the case.
- X7: The weight includes packaging. The weight in parenthesis is for unit only. *Environment resistance is rated at no freezing or condensation.

Connections



Set Switch

SW1(1 Switch) •LA8N / LE8N Series

SW1 is a switch to Enable/ Disable the front panel RESET *Factory default: Enable

SW2(2 Switch) •LA8N Series SW2 is a switch for setting

max. counting speed. ※Factory default: 1cps (Free voltage input type 20cps is fixed)

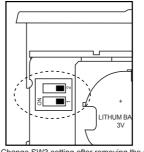
•LE8N Series SW2 is a switch for setting time

※Factory default: 9999.59.59 (h.m.s)

∋ SW3

LA8N Series

SW3 for ①, ②, ③ descriptions SW3 is a switch for decimal point position.(Xfactory default: no decimal point)



lot use decimal point S S 0.0 8 **-**0.00 8 ■ 0.000 Z .

ront panel

2

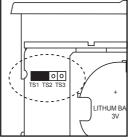
2

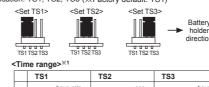
cps 30cps

→ Front pane

Power OFF \rightarrow change settings \rightarrow power ON \rightarrow press RESET key or input signal (min. 20ms)

•LE8N Series SW3 is a switch for setting time sepcification. TS1, TS2, TS3 (※Factory default: TS1)



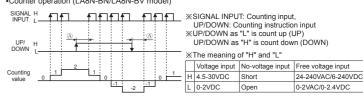


99999959 99999999 999999.9h hour min. 99999h59 hour min. 999999.59.9 day hour 9999d23.9 99995959 9999.23.59 9999h599

X1: Time range is set as SW2, SW3 combination

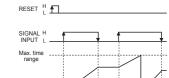
Operation

•Counter operation (LA8N-BN/LA8N-BV model)



*A should be over 20ms of min. signal width. If it is below 20ms, it may cause counting error.





•Timer operation (LE8N Series)

Case Detachment



 Hold up Lock part toward ①, ② of the product with the tool and pull toward ③ to detach the case.

 Mhen using the tools, be careful not to be wounded

Battery Replacement

1.Detach the ca 2.Push the battery and detach it toward ①. Insert a new battery with correct alignment of polarity

pushing it toward opposite of ①.

Since lithium battery is embedded in the product, follow instructions below for safety.

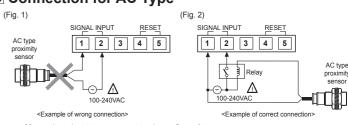
①Do not charge, short, disassemble, subject it to shock, heat ②Check the polarity.③Use CR2477 battery.

Do not solder on a battery directly

SInsulate a battery with tape to dispose ®Do not store this unit in the place with the direct sunlight

*The battery is sold separately. Please replace a battery by yourself. X Do not burn up or disassemble the lithium batter

Connection for AC Type



In case of free voltage input type, connect a relay as figure 2. In case connecting AC proximity sensors instead of a relay as figure 1, it may cause malfunction due to leakage current of the sensor.

Caution during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents. 2. In case of contact input, set count speed to low speed mode (1cps, 20cps, 30cps) to operate.

If set to high speed mode (1kcps), counting error occurs due to chattering.

3. Keep away from high voltage lines or power lines to prevent inductive noise In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.

Do not use near the equipment which generates strong magnetic force or high frequency noise.

4. This product may be used in the following environments

①Indoors (in the environment condition rated in 'Specifications')

②Altitude max 2 000m ③Pollution degree 2

(a) Installation category II

■ Major Products

■ Photoelectric Sensors ■ Fiber Optic Sensors

■ Temperature Controllers ■ Temperature/Humidity Transducers

Counters

■ Timers

■ Door Sensors
■ Door Side Sensors

■ Area Sensors ■ Proximity Sensors

■ Panel Meters ■ Tachometers/Pulse(Rate)Meters ■ Pressure Sensors Rotary Encoders

■ Display Units■ Sensor Controllers ■ Connectors/Sockets

Field Network Devices

■ Switching Mode Power Supplies
■ Control Switches/Lamps/Buzzers

■ I/O Terminal Blocks & Cables

■ Stepper Motors/Drivers/Motion Controller ■ Graphic/Logic Panels

■ Laser Marking System(Fiber, CO₂, Nd: YAG)
■ Laser Welding/Cutting System

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