

Autonics COUNTER/TIMER LA8N/LE8N SERIES

MANUAL



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow;

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.

Caution: Injury or danger may occur under special conditions.

Warning

1. In case of using this unit with machinery(Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.

It may cause a fire, human injury or damage to property.

2. Do not disassemble or modify this unit. Please contact us if it is required.

It may cause electric shock or a fire.

3. Lithium battery is used in this product, do not disassemble or burn up this unit.

It may cause explosion.

Caution

1. This unit shall not be used outdoors.

It might shorten the life cycle of the product or cause electric shock.

2. Please observe the rated specifications.

It might shorten the life cycle of the product and cause a fire.

3. In cleaning the unit, do not use water or organic solvent. And use dry cloth.

It might cause a fire.

4. Do not use this unit where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration and impact etc.

It may cause a fire or explosion.

5. Do not inflow dust or wire dregs into the unit.

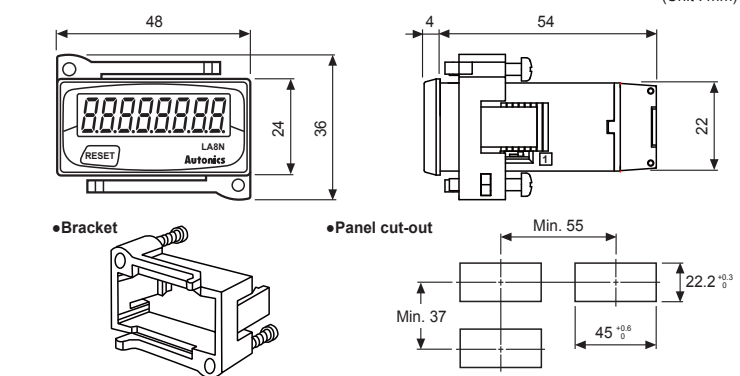
It may cause a fire or malfunction.

Ordering information

L	A	8	N	-	B	N	-	L	Backlight	No mark	None
									Input type	L	Backlight function
									Power supply	N	No-voltage input
									Size	V	Voltage input
									Item	F	Free voltage input
									Display	B	Built-in battery
										N	DIN W48×H24mm
										8	99999999(8digit)
										A	Counter
										E	Timer
										L	LCD Display

※Upgraded or added functions are seen in the shaded part of ordering information.

Dimensions



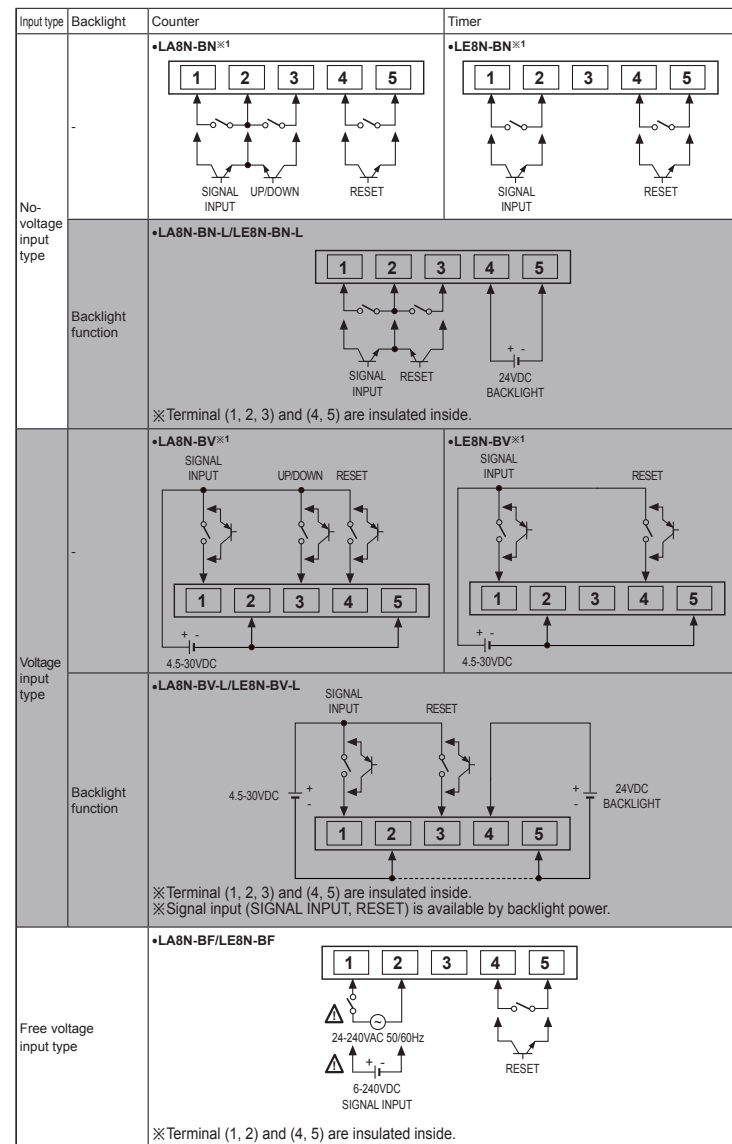
※The above specifications are subject to change without notice.

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	8digit(Count up, down: 9999999 to 99999999 / Count up mode: 0 to 99999999)					8digit(0 to 99999999)				
Digit size	W3.4 × H8.7mm									
Display method	LCD Zero Blanking type(Character height size: 8.7mm)									
Operation method	Count up, down mode		Count up mode		Count up mode	Count up mode		Count up mode		Count up mode
Power supply	Built-in battery									
Battery life cycle	Approx. over 7 years at 20°C					Approx. 10 years at 20°C				
Backlight power supply	-		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)	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	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
Start input(Timer)	No-voltage input		Voltage input		No-voltage input	No-voltage input		Voltage input		No-voltage input
RESET input	UP/DOWN, RESET input: Min. 20ms		RESET input: Min. 20ms		UP/DOWN, RESET input: Min. 20ms	RESET input: Min. 20ms		RESET input: Min. 20ms		SIGNAL INPUT, RESET input: Min.20ms
Min. signal width	-		-		RESET input: Min. 20ms	-		-		-
Max. counting speed	1cps / 30cps / 1kcps		-		20cps	-		-		-
Time specification(TS1)	-		-		99995959(h.m.s), 99995959(h.m), 99999599(h.m)	-		-		-
Time specification(TS2)	-		-		99992359(d.h.m), 9999239(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	-		-		-
Insulation resistance	Min. 100MΩ(at 500VDC megger)					SW1*1, SW2*2, SW3*3				
Dielectric strength*6	2,000VAC 60Hz for 1minute									
Vibration	Mechanical 0.75mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 1 hour									
Shock	Mechanical 300m/s²(Approx. 30G) 3 times at X, Y, Z direction									
Shock	Mechanical 100m/s²(Approx. 10G) 3 times at X, Y, Z direction									
Environment	Ambient temperature -10 to 55°C, Storage: -25 to 65°C									
Environment	Ambient humidity 35 to 85%RH, Storage: 35 to 85%RH									
Protection	IP66(When using waterproof rubber for front panel)									
Accessory	Mounting bracket, Rubber waterproof ring									
Approval	CE, RoHS									
Unit weight*7	Approx. 96g(Approx. 50g)									

※1: SW1 is the front panel RESET key enable/disable set switch. ※2: SW2 is the max. counting speed set switch. ※3: SW3 is the decimal point set switch.
 ※4: SW2 is the time range set switch. ※5: SW3 is available to select time specification TS1, TS2, or TS3.
 ※6: 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
 ※7: This weight is with packaging and the weight in parentheses is only unit weight.

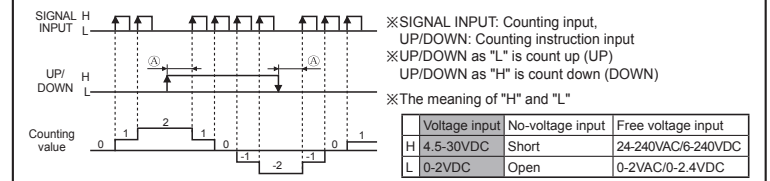
Connections



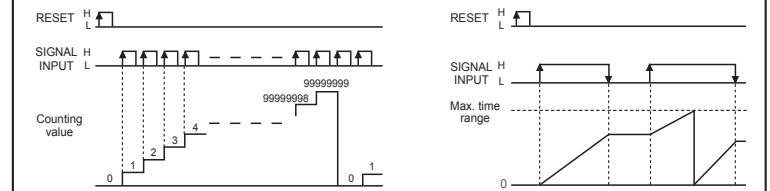
※1: Terminal 2 and 5 are connected inside. (Non-isolated)
 ※Use reliable contacts enough to flow 5μA current.

Operation

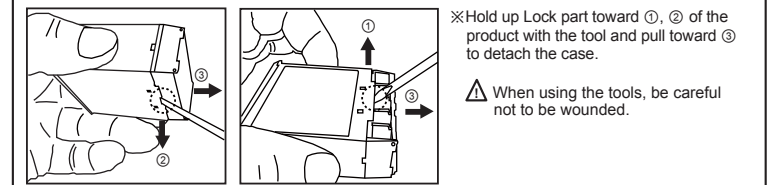
•Counter operation(LA8N-BN/LA8N-BV model)



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

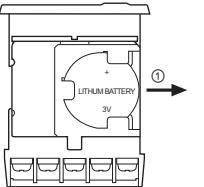


Case detachment



Battery replacement

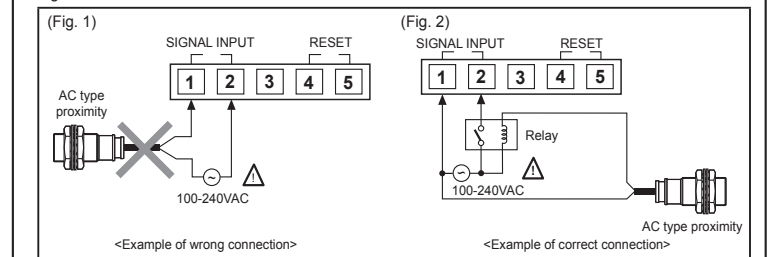
- Detach the case.
- Push the battery and detach it toward ⊙.
- Insert a new battery with correct alignment of polarity pushing it toward opposite of ⊙.



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

Caution for using

- Do not dispose the unit where flammables or danger of explosion exists due to built-in lithium battery.
- Please observe the instruction below when changing max. counting speed or time range. Supply RESET input signals(Front panel or Terminal Block) after changing counting speed or time range in the middle of operation. It may cause malfunction if not following the instruction.
- Proper application environment(Avoid following environments to use.)
 - ⊙A place where ambient temperature is less than -10°C or over 55°C.
 - ⊙A place where ambient humidity is less than 35%RH or over 85%RH.
 - ⊙A place where there is flammable or corrosive gas, dust, oil, vibration and impact.
 - ⊙A place where there are organic solvents including methyl alcohol, benzene, thinner or strong alkalis including ammonia, caustic soda.
- The battery includes combustible materials including lithium organic solvent. Please observe the instruction below for safe battery handling. It may cause a fire, heat generation, leakage or explosion if not following the instruction.
 - ⊙Do not charge, short, disassemble, shock, heating and throw in a fire.
 - ⊙Do not reverse the polarity.
 - ⊙Do not use other type of battery together.
 - ⊙Do not solder on a battery directly.
 - ⊙Insulate a battery to dispose with tape.
 - ⊙Do not store this unit where there is direct ray of sun, high temperature and humidity.
- 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.



- Installation environment
 - ⊙It shall be used indoor
 - ⊙Altitude Max. 2,000m
 - ⊙Pollution Degree 2
 - ⊙Installation Category II
- ※It may cause malfunction if above instructions are not followed.

Major products

- Proximity sensors
- Area sensors
- Display units
- Rotary encoders
- Power controllers
- Photoelectric sensors
- Door/Door side sensors
- Graphic/Logic panels
- Temperature controllers
- Tachometer/Pulse(Rate) meters
- Temperature/Humidity transducers
- Switching power supplies
- Stepping motors/drivers/motion controllers
- Field network devices
- Laser marking system(CO₂, Nd:YAG)
- Laser welding/soldering system
- Counters
- Timers
- Panel meters
- Pressure sensors
- Fiber optic sensors
- Sensor controllers

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