

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.

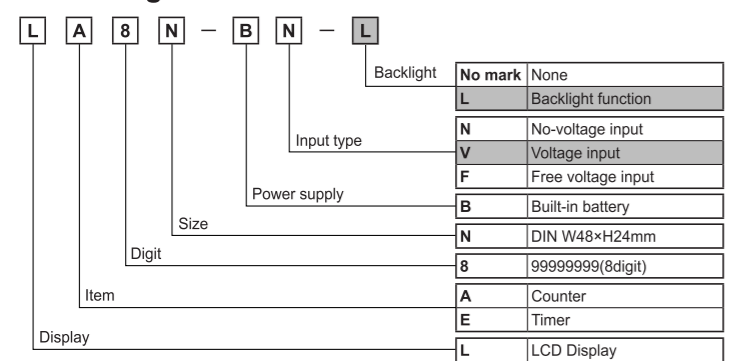
Warning

- 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.
- Do not disassemble or modify this unit. Please contact us if it is required.
It may cause electric shock or a fire.
- Lithium battery is used in this product, do not disassemble or burn up this unit.
It may cause explosion.

Caution

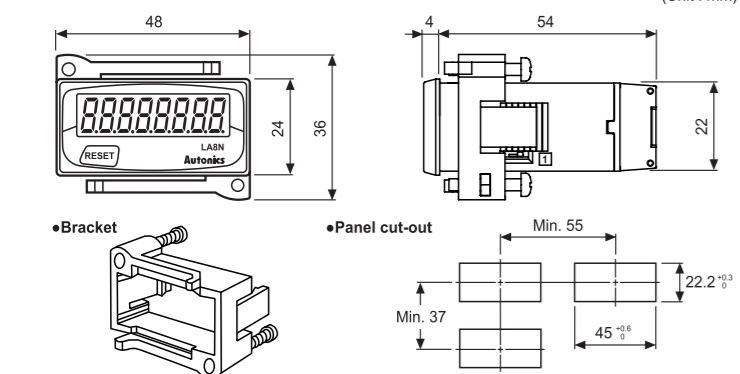
- This unit shall not be used outdoors.
It might shorten the life cycle of the product or cause electric shock.
- Please observe the rated specifications.
It might shorten the life cycle of the product and cause a fire.
- In cleaning the unit, do not use water or organic solvent. And use dry cloth.
It might cause a fire.
- 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.
- Do not inflow dust or wire dregs into the unit.
It may cause a fire or malfunction.

Ordering information



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

Dimensions



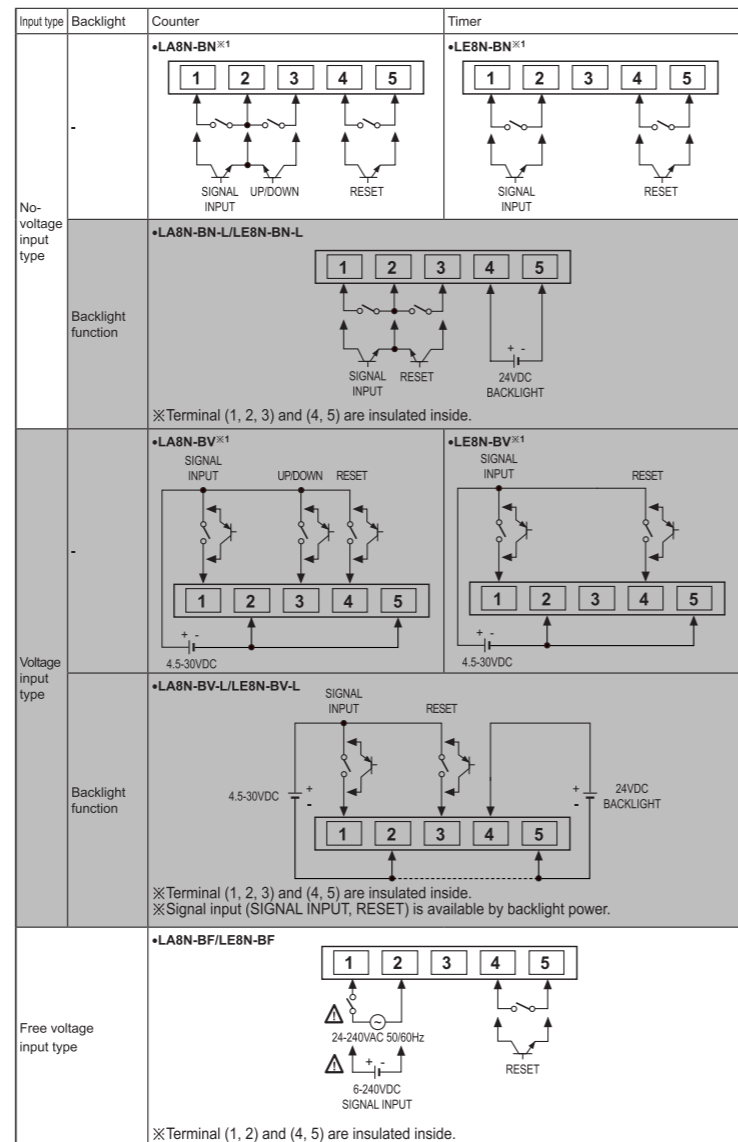
⚠ The above specifications are subject to change and some models may be discontinued without notice.

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		UP/DOWN, RESET input: Min. 20ms		SIGNAL INPUT, RESET input: Min. 20ms	
Min. signal width	-		-		20cps	-		-		20cps	
Max. counting speed	1cps / 30cps / 1kcps		-		20cps	-		-		20cps	
Time specification(TS1)	-					99995959(h.m.s), 9999599(h.m), 9999959(h.m)					
Time specification(TS2)	-					99992359(d.h.m), 9999d239(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, SW2*4, SW3*5					
Insulation resistance	Min. 100MΩ(at 500VDC megger)										
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									
	Malfunction	0.3mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 10 minutes									
Shock	Mechanical	300m/s²(Approx. 30G) 3 times at X, Y, Z direction									
	Malfunction	100m/s²(Approx. 10G) 3 times at X, Y, Z direction									
Environment	Ambient temperature	-10 to 55°C, Storage: -25 to 65°C									
	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)										

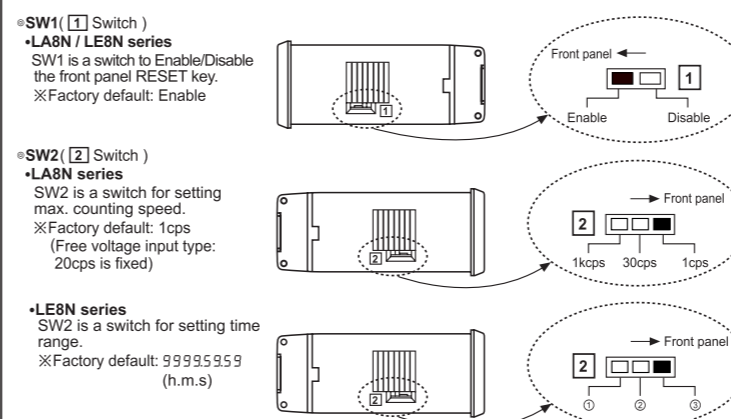
⚠1: SW1 is the front panel RESET key enable/disable set switch. ⚠2: SW2 is the max. counting speed set switch. ⚠3: SW3 is the decimal point set switch.
⚠4: SW2 is the time range set switch. ⚠5: SW3 is available to select time specification TS1, TS2, or TS3.
⚠6: No-voltage input, voltage input: between 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



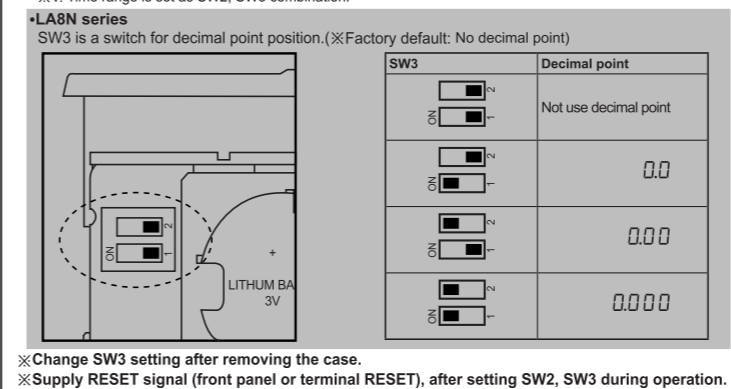
⚠1: Terminal 2 and 5 are connected inside. (Non-insulated)
⚠Use reliable contacts enough to flow 5μA current.

Set switch



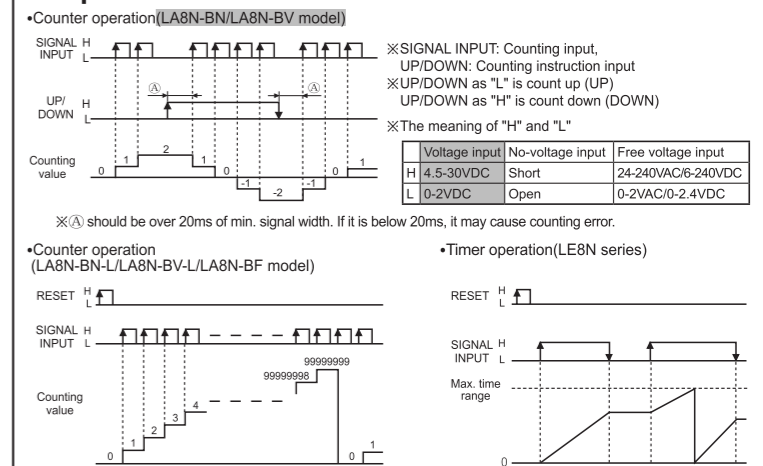
⚠Refer to "<Time range>" table of SW3 for ①, ②, ③ descriptions.

<Time range>*1		
TS1	TS2	TS3
① hour min. 99999959	sec. 99999999	hour 9999999h
② hour min. 999999599	day hour 9999d239	hour min. 99999h59
③ hour min. sec. 999995959	day hour min. 9999d2359	hour min. 9999h599

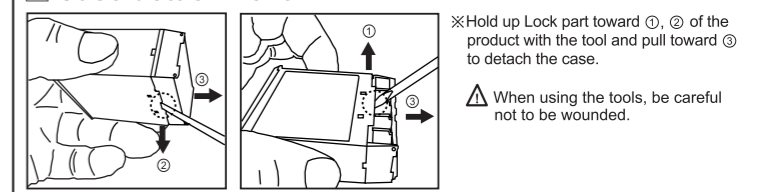


⚠ Change SW3 setting after removing the case.
⚠ Supply RESET signal (front panel or terminal RESET), after setting SW2, SW3 during operation.

Operation



Case detachment

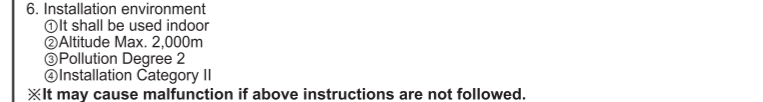


Battery replacement

- Detach the case.
- Push the battery and detach it toward ①.
- Insert a new battery with correct alignment of polarity pushing it toward opposite of ①.

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.)
① A place where ambient temperature is less than -10°C or over 55°C.
② A place where ambient humidity is less than 35%RH or over 85%RH.
③ A place where there is flammable or corrosive gas, dust, oil, vibration and impact.
④ 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.
① Do not charge, short, disassemble, shock, heating and throw in a fire.
② Do not reverse the polarity.
③ Do not use other type of battery together.
④ Do not solder on a battery directly.
⑤ Insulate a battery to dispose with tape.
⑥ 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.



Major products

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

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