Autonics

LA8N/LE8N SERIES

M A N U A L

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 resulted if instructions are not followed.

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

※The following is an explanation of the symbols used in the operation manual.
⚠ Caution: Injury or danger may occurred under special conditions.

⚠ Warning

1. **In case of using this unit with machinery(Nuclear power control, medical equipment vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), 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 give an electric shock and cause a fire.
3. **Do not disassemble or burn up because lithium battery is used for memory protection.**
   It may cause an explosion.

⚠ Caution

1. **This unit shall not be used outdoors.**
   It might shorten the life cycle of the product or give an 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 an organic solvents.**
   It might cause a fire.
4. **Do not use this unit in place 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.

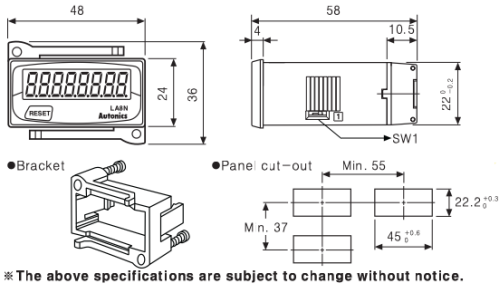
▣ Ordering information

L A 8 N – B N

Input type	N	No-voltage input
	F	Universal voltage input
Power supply	B	Internal lithium battery
Size	N	DIN Size W48×H24mm
Digit	8	99999999(8 Digit)
Item	A	Counter
	E	Hour Meter
Display	L	LCD Display

▣ Dimensions

(Unit : mm)



※**The above specifications are subject to change without notice.**

▣ Specifications

Model	LA8N Series(COUNTER)		LE8N Series(HOUR METER)	
	LA8N-BN	LA8N-BF	LE8N-BN	LE8N-BF
Digit	8 Digit			
Display	LCD Zero Blanking method(Character height size: 8.7mm)			
Operation method	Count up mode			
Power supply	Built-in battery(Replaceable)			
Input method	No-voltage input	Universal voltage input	No-voltage input	Universal voltage input
Counting speed	1cps / 30cps / 1kcps	20cps	———	
Count input (Counter) / Start input (Hour meter)	· Residual voltage: Max. 0.5VDC · Short-circuit impedance: Max. 10kΩ · Open-circuit impedance: Min. 750kΩ	High: 24-240VAC / 6-240VDC Low: 0-2VAC / 0-2.4VDC	· Residual voltage: Max. 0.5VDC · Short-circuit impedance: Max. 10kΩ · Open-circuit impedance: Min. 750kΩ	High: 24-240VAC / 6-240VDC Low: 0-2VAC / 0-2.4VDC
RESET signal	No-voltage input			
Min. Reset signal width	Min. 20ms			
Battery life cycle	Approx. 7 years at 20℃		Approx. 10 years at 20℃	
Setting time (TS1)	———		(※1)9999.59.59(h.m.s) / 99999.59.9(h.m) / 999999.59(h.m)	
Setting time (TS2)	———		(※1)9999H59.9(h.m) / 99999H59(h.m) / 999999H.9(h)	
Time / Temperature error	———		±0.01% ±50ms	
External switch	SW1(※2), SW2(※3)	SW1(※2)	SW1(※2), SW2(※4)	
Dielectric strength	2000VAC 60Hz for 1 minute			
	Between all terminals and case	· Between all universal voltage and signal input · Between all terminals and case	Between all terminals and case	· Between all universal voltage and signal input · Between all terminals and case
Vibration Mechanical	0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1 hour			
Vibration Malfunction	0.3mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 10 minutes			
Shock Mechanical	300m/s² (Approx. 30G) 3 times at X, Y, Z direction			
Shock Malfunction	100m/s² (Approx. 10G) 3 times at X, Y, Z direction			
Environment Ambient temperature	-10 ~ 55℃, Storage: -25 ~ 65℃			
Environment Ambient humidity	35 ~ 85%RH, Storage: 35 ~ 85%RH			
Protection	IP66(When using waterproof rubber for front panel)			
Accessories	———	Terminal protection cover (Finger Protector)	———	Terminal protection cover (Finger Protector)
Approval	CE, cULus			
Unit weight	Approx. 58g			

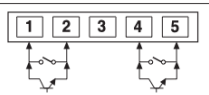
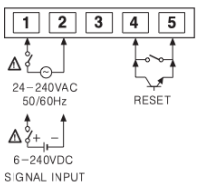
※ **1**: Select TS1, TS2 using inner jump pin(JP1).
※ **2**: SW1 is a switch Enable/Disable the front RESET.
※ **3**: SW2 is a switch setting counting speed.
※ **4**: SW2 is a switch setting time specifications.
※ Condition for use in Environment is no freezing or condensation.

▣ Factory Default

Series / Item	LA8N	LE8N
SW1	Disable the front panel RESET key (Terminal block direction)	Disable the front panel RESET key (Terminal block direction)
SW2	Configure 1kcps (Terminal block direction)	999999.59(h.m) (Terminal block direction)
JP1	———	Configure TS1

※SW2 is not available in LA8N-BF. (Fixed as 20cps)

▣ Input connection

Item / Input method	COUNTER / HOUR METER
No-voltage input type	
Universal voltage input type	

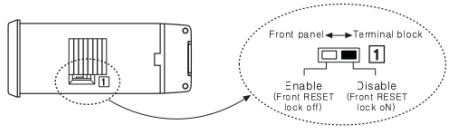
※Please use reliable contacts enough to flow 5㎂ of current.

▣ Enable/Disable front reset key

◎**SW1, SW2**

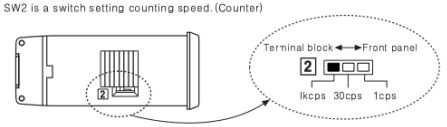
● 1 SW1

– SW1 is a switch Enable/Disable the front RESET.(Counter, Hour meter)

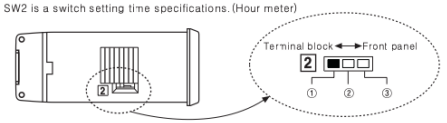


● 2 SW2

– SW2 is a switch setting counting speed.(Counter)



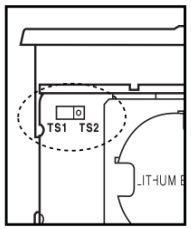
– SW2 is a switch setting time specifications.(Hour meter)

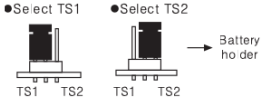


※ Refer to "Timer (_E8N) timer range setting" for more details of ①, ②, and ③.

※Please supply RESET signal(Front or external reset terminal) after change time range during the operation.

◎ **Time specification(TS1,TS2) and time range(LE8N Series).**

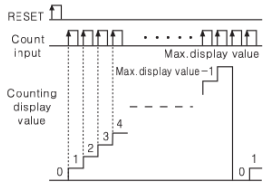




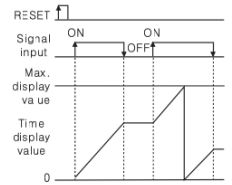
	TS1	TS2
①	9999.59.59(h.m.s)	9999H59.9(h.m)
②	99999.59.9(h.m)	99999H59(h.m)
③	999999.59(h.m)	999999H.9(h)

◎ **Operation**

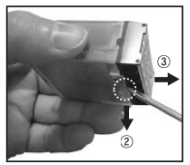
●Counter operation mode

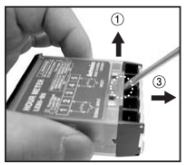


●Hour meter operation mode



▣ Case detachment





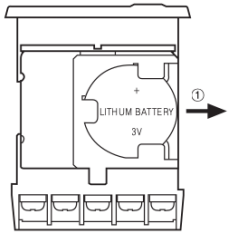
※Hold up Lock part toward ①, ② of the product with the tool and pull toward ③, the case is detached.

⚠ Please be careful of the injury caused by tools.

▣ Battery replacement

1. Detach the case.
2. Push the battery and detach toward ①.
3. Insert new battery with correct alignment of polarity pushing toward opposite of ①.

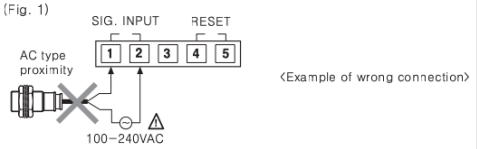
※Battery is sold separately.
※Do not burn up or disassemble the lithium battery.



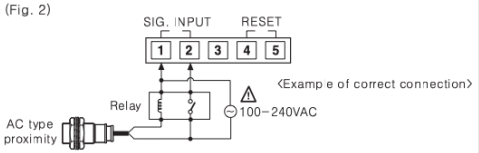
▣ Caution for using

1. Do not dispose the unit where flammables or danger of explosion exists.
2. Please observe the instruction below when changing counting speed and time range.
   Supply RESET input signals (via Front or Terminal Block) after changing counting speed or time range in the middle of operation. It may cause malfunction if not following the instruction.
3. Proper application environment (Avoid following environments to use.)
   ①A place where ambient temperature is less than −10℃ or over 55℃.
   ②A place where ambient humidity is less than 35%RH or over 85%RH.
   ③A place where there is flammable or corrosive gas, dust, oil, vibration and impact.
   ④A place where there are organic solvents including methyl alcohol, benzene, thinner or strong alkalis including ammonia, caustic soda.
4. 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.
   ①Do not charge, short, disassemble, shock, heating and throw in a fire.
   ②Do not put a battery as reverse.
   ③Do not use other type of battery together.
   ④Do not solder on a battery directly.
   ⑤Insulate a battery to dispose with tape.
   ⑥Do not store where there is direct ray of sun, high temperature and humidity.
5. In case of universal voltage signal type model, 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.
   sensor, please connect relay as (Fig. 2) and use it.

(Fig. 1)



(Fig. 2)



6. Installation environment
   ①It shall be used indoor ②Altitude Max. 2,000m
   ③Pollution Degree 2 ④Installation Category II

※**It may cause malfunction if above instructions are not followed.**

▣ Major products

- Proximity sensors
- Photoelectric sensors
- Area sensors
- Fiber optic sensors
- Door/Door side sensors
- Pressure sensors
- Counters
- Timers
- Rotary encoders
- Display units
- Power controllers
- Sensor controllers
- Panel meters
- 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(CO_2, Nd:YAG)
- Laser welding/soldering system

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