

COUNTER F/L SERIES



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.

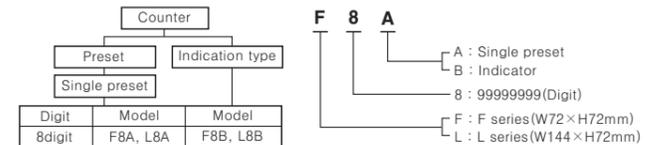
Warning

- In case of using this unit with machineries (Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information required. It may result in serious damage, fire or human injury.
- This unit must be mounted on Panel. It may give an electric shock.
- Do not connect terminals when it is power on. It may give an electric shock.
- Do not disassemble and modify this unit, when it requires. If needs, please contact us. It may give an electric shock and cause a fire.

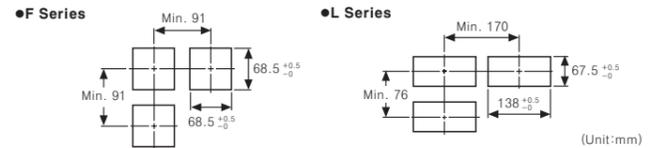
Caution

- This unit shall not be used outdoors. It might shorten the life cycle of the product or give an electric shock.
- When wire connection, No.20AWG(0.50mm²) should be used and screw bolt on terminal block with 0.74N·m to 0.90N·m strength. It may result in malfunction or fire due to contact failure.
- Please observe specification rating. It might shorten the life cycle of the product and cause a fire.
- Do not use the load beyond rated switching capacity of Relay contact. It may cause insulation failure, contact melt, contact failure, relay broken, fire etc.
- In cleaning the unit, do not use water or an organic solvents. It might cause an electric shock or fire that will result in damage to the product.
- Do not use this unit at place where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration, impact etc. It may cause explosion.
- Do not inflow dust or wire dregs into inside of this unit. It may cause a fire or mechanical trouble.

Ordering information



Panel cut-out



Input operation mode

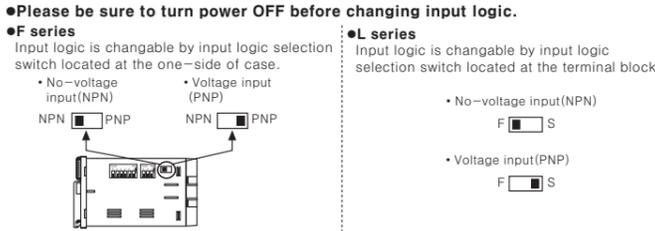
Input mode	SW1	Counting chart	
		Voltage input type	No-voltage input type
Up/Down-A (Command input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up/Down-B (Individual input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up/Down-C (Phase difference input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up (Up input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up/Down-D (Command input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up/Down-E (Individual input)	ON/OFF	[Timing diagram]	[Timing diagram]
Up/Down-F (Phase difference input)	ON/OFF	[Timing diagram]	[Timing diagram]
Down (Down input)	ON/OFF	[Timing diagram]	[Timing diagram]

*A: Over Min. signal width, B: Over 1/2 of Min. signal width.
Counting miss by one(±1) is occurred if the signal width of A or B is less than min. signal width.
*The above specification are changeable without notice anytime.

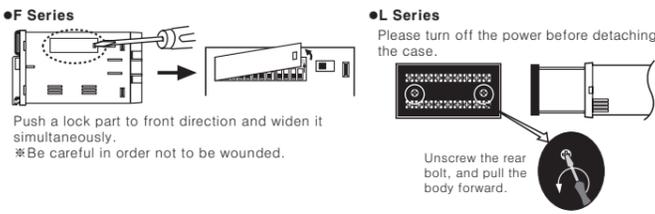
Specifications

Series	F	L
Digit	8	8
Model	Single preset: F8A Indication type: F8B	L8A L8B
Power supply	AC power: 100-240VAC 50/60Hz AC/DC power: 12-24VAC 50/60Hz, 12-24VDC	
Allowable voltage range	90 to 110% of rated voltage	
Power consumption	AC power: Indication: Approx. 5.4VA, Single preset: Approx. 6.1VA (240VAC 50/60Hz) AC/DC power: Indication: Approx. 5.5VA, Single preset: Approx. 6.3VA (24VAC 50/60Hz) Indication: Approx. 2.6W, Single preset: Approx. 3.1W (24VDC)	
Max. counting speed for CP1, CP2	1cps/30cps/2kcps/5kcps selectable by DIP switch	
Min. input signal width	RESET input: Min. 20ms	
Input method	CP1, CP2 input: Input logic is selectable [Voltage input] Input impedance is 5.4kΩ, "H" level: 5-30VDC, "L" level: 0-2VDC RESET input: [No-voltage input] Short-circuit impedance: Max. 1kΩ, Residual voltage: Max. 2VDC, Open-circuit impedance: Min. 100kΩ	
Control output	Con-tact: Type: Single preset type: SPDT(1c) Capacity: 250VAC 3A resistive load Solid-state: Type: Single preset type: NPN open collector Rating: 30VDC Max. 100mA Max.	
Memory retention	10 years (EEPROM)	
External power supply	12VDC ±10% 50mA Max.	
Ambient temperature	-10 to 55°C (at non-freezing status)	
Storage temperature	-25 to 65°C (at non-freezing status)	
Ambient humidity	35 to 85%RH	
Insulation resistance	100MΩ (at 500VDC)	
Dielectric strength	2000VAC 50/60Hz for 1 minute	
Noise immunity	AC power: ±2kV the square wave noise (pulse width: 1μs) by the noise simulator AC/DC power: ±500V the square wave noise (pulse width: 1μs) by the noise simulator	
Vibration	Mechanical: 0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hour Malfunction: 0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes	
Shock	Mechanical: 300m/s ² (Approx. 30G) 3 times at X, Y, Z direction Malfunction: 100m/s ² (Approx. 10G) 3 times at X, Y, Z direction	
Relay life cycle	Mechanical: Min. 10,000,000 times Electrical: Min. 100,000 times (250VAC 3A resistive load)	
Weight	F8A: Approx. 287g, F8B: Approx. 253g L8A: Approx. 500g, L8B: Approx. 446g	

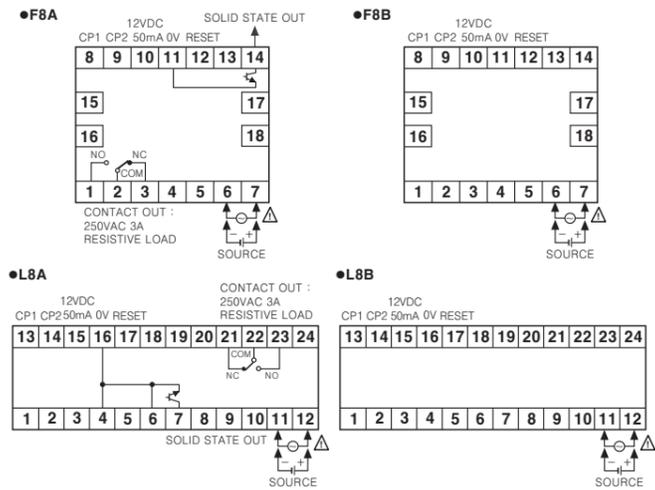
Input logic selection



Case & DIP switch detachment



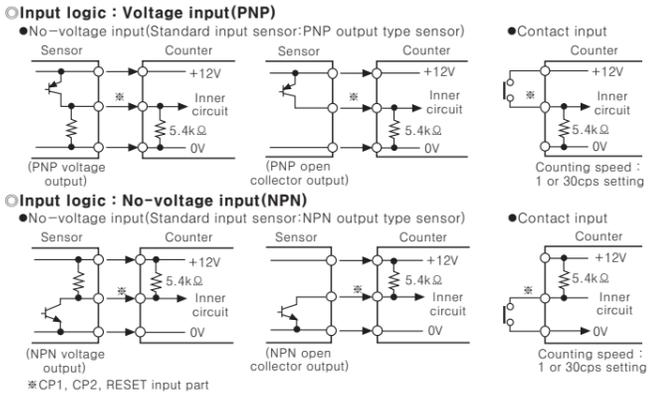
Connections



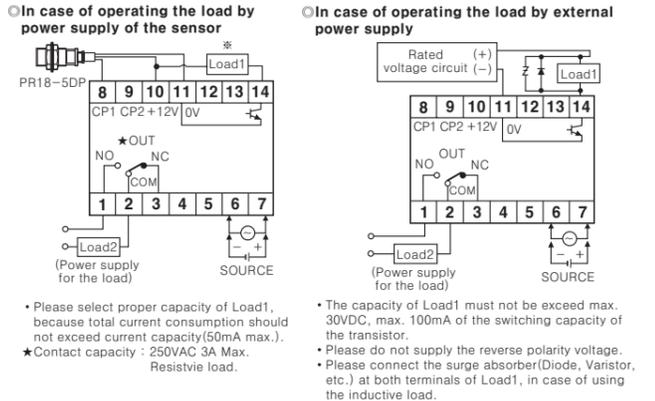
Output operation mode

Output mode	Input mode		Operation after Count up
	Up, Up/Down-A, B, C	Down, Up/Down-D, E, F	
F	[Timing diagram]	[Timing diagram]	The display value continues until reset signal is applied and the output will be held.
N	[Timing diagram]	[Timing diagram]	The display value and hold output are held until reset signal is applied.
C	[Timing diagram]	[Timing diagram]	The display value returns to reset start status as soon as display value is reached to preset value.
R	[Timing diagram]	[Timing diagram]	The display value is held until output is OFF then returns to reset start status.
K	[Timing diagram]	[Timing diagram]	The display value continues until reset signal is applied.
P	[Timing diagram]	[Timing diagram]	The display value is held during one-shot output time, counting process is returned to reset start status as soon as output is ON.
Q	[Timing diagram]	[Timing diagram]	The display value continues during one-shot output time.
S	[Timing diagram]	[Timing diagram]	Up, Up/Down-A, B, C input mode - Output is ON when (Display value) ≥ (Preset value) Down, Up/Down-D, E, F input mode - Output is ON when (Display value) ≤ (Zero)

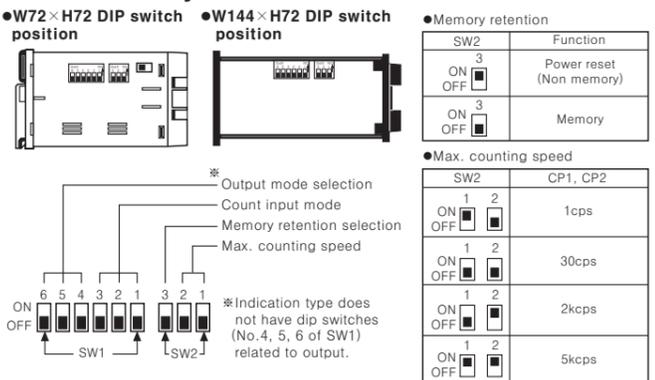
Input connection



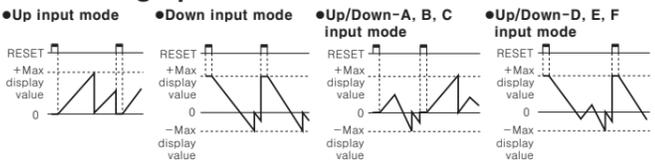
Input-Output connection



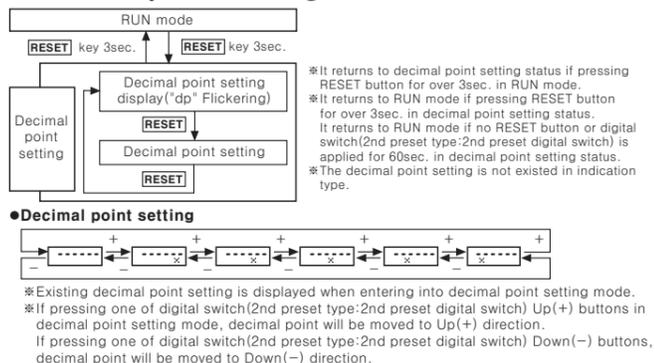
Selection by DIP switches



Counting operation of indication model



Decimal point setting



Caution for using

- DIP switch setting: Please be sure to turn power OFF before changing Counter DIP switches setting. If DIP switches setting is changed in power OFF, Counter must be reset by manual reset or external reset after power ON.
 - Error:

Error display	Error contents	Return method
Err0	Zero setting value status	Change setting value which is not zero

 - *Output is OFF when error is displayed.
 - *If 1st preset value is changed to zero("0"), 1st output keeps OFF status.
 - *No Error display is appeared in indication type.
 - Power:
 - The inner circuit voltage starts to rise up for the first 100ms after power on, the input may not work at this time. And also the inner circuit voltage drops down for the last 500ms after power off, the input may not work at this time.
 - Please use the power within rating power and apply or cut the power at once to prevent from chattering.
 - Input signal line:
 - Shorten the cable distance between the sensor and this product.
 - Please shielded wire for input signal needed to be long.
 - Please wire input signal line separated from power line.
 - When test dielectric voltage and insulation resistance of the control panel with this unit installed.
 - Please isolate this unit from the circuit of control panel.
 - Please make all terminals of this unit short-circuited.
 - Do not use this unit at below places.
 - Place where there are severe vibration or impact.
 - Place where strong alkalis or acids are used.
 - Place where there are direct ray of the sun.
 - Place where strong magnetic field or electric noise are generated.
 - Installation environment:
 - It shall be used indoor
 - Altitude Max. 2000m
 - Pollution Degree 2
 - Installation Category II.
- *It may cause malfunction if above instructions are not followed.

Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM (CO₂, Nd:YAG)

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http://www.autonics.com

Satisfiable Partner For Factory Automation

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