

COUNTER/TIMER FXS 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 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.

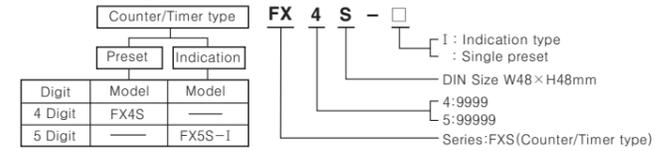
Warning

- 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.

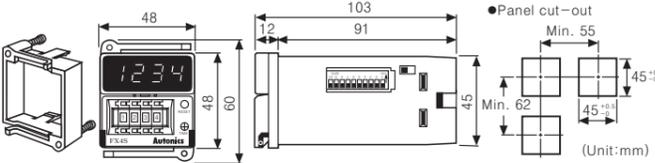
Caution

- 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.

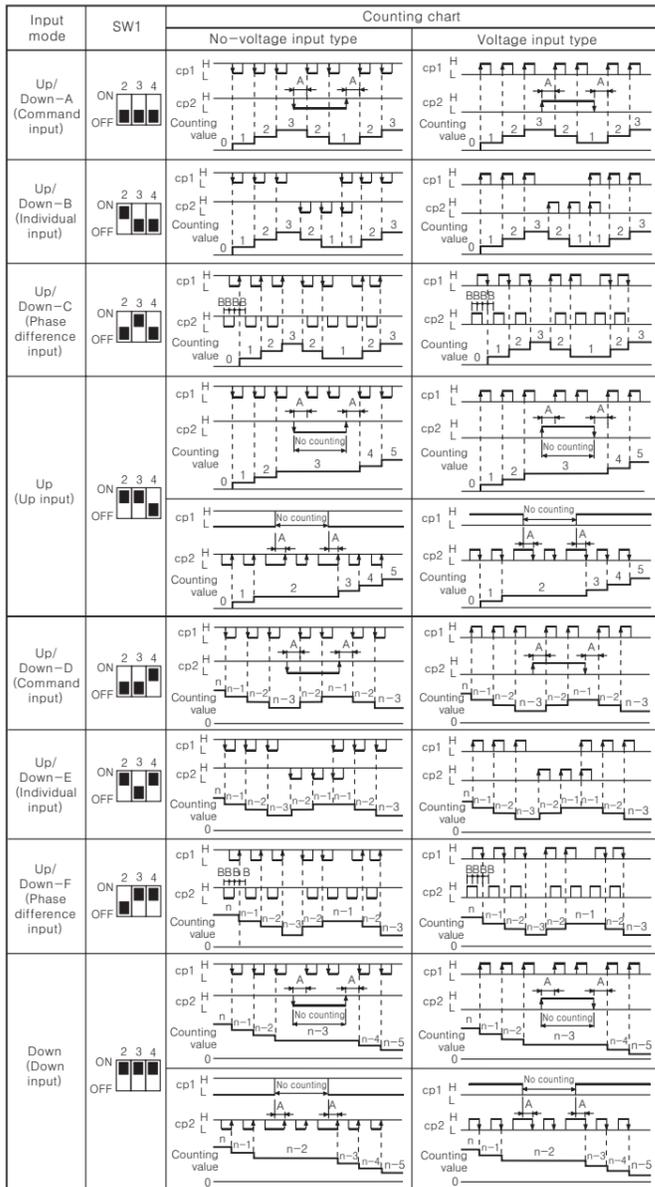
Ordering information



Dimensions



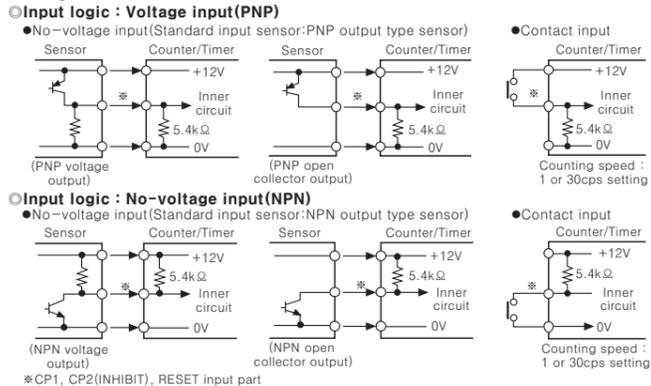
Input operation mode(Counter)



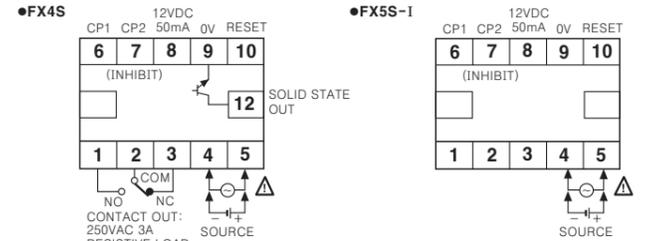
Specifications

Series	FXS	
Digit	4	5
Model	Single preset: FX4S	—
Model	Double preset: —	—
Model	Indication type: —	FX5S-I
Power supply	AC power: 100-240VAC 50/60Hz	
Power supply	AC/DC power: 12-24VAC 50/60Hz, 12-24VDC	
Allowable voltage range	90 to 110% of rated voltage	
Power consumption	AC power: Indication type: Approx. 4.7VA, Single preset: Approx. 5.7VA(240VAC 50/60Hz)	
Power consumption	AC/DC power: Indication type: Approx. 4.5VA, Single preset: Approx. 5.6VA(24VAC 50/60Hz)	
Power consumption	Indication type: Approx. 2.8W, Single preset: Approx. 3W(24VDC)	
Max. counting speed of CP1, CP2	1cps/30cps/2kcps/5kcps selectable by DIP switch	
Min. input signal width	INHIBIT input, RESET input: Approx. 20ms	
Input method	CP1, CP2 input (INHIBIT): Input logic is selectable [Voltage input] Input impedance is 5.4kΩ, "H" level: 5-30VDC, "L" level: 0-2VDC	
Input method	RESET input: [No-voltage input] Short-circuit impedance: Max. 1kΩ, Residual voltage: Max. 2VDC, Open-circuit impedance: Min. 100kΩ	
One-shot output time	0.05-5sec.	
Control output	Con-tact: Type: SPDT(1c)	
Control output	Solid-Type: Capacity: 250VAC 3A resistive load	
Control output	state: Capacity: NPN open collector	
Control output	state: Capacity: 30VDC Max. 100mA Max.	
Memory retention	10 years (EEPROM)	
External sensor power	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	35-85%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	
Noise immunity	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	
Vibration	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	
Shock	Malfunction: 100m/s ² (Approx. 10G) 3 times at X, Y, Z direction	
Relay life cycle	Mechanical: Min. 10,000,000 times	
Unit weight	Electrical: Min. 100,000 times (250VAC 3A resistive load)	
Unit weight	Approx. 153g	
Approval	Autonics (100-240VAC 50/60Hz)	

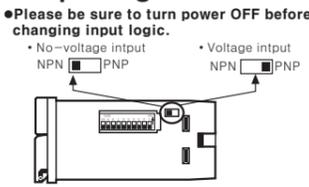
Input connection



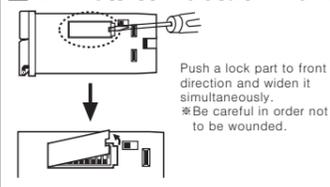
Connections



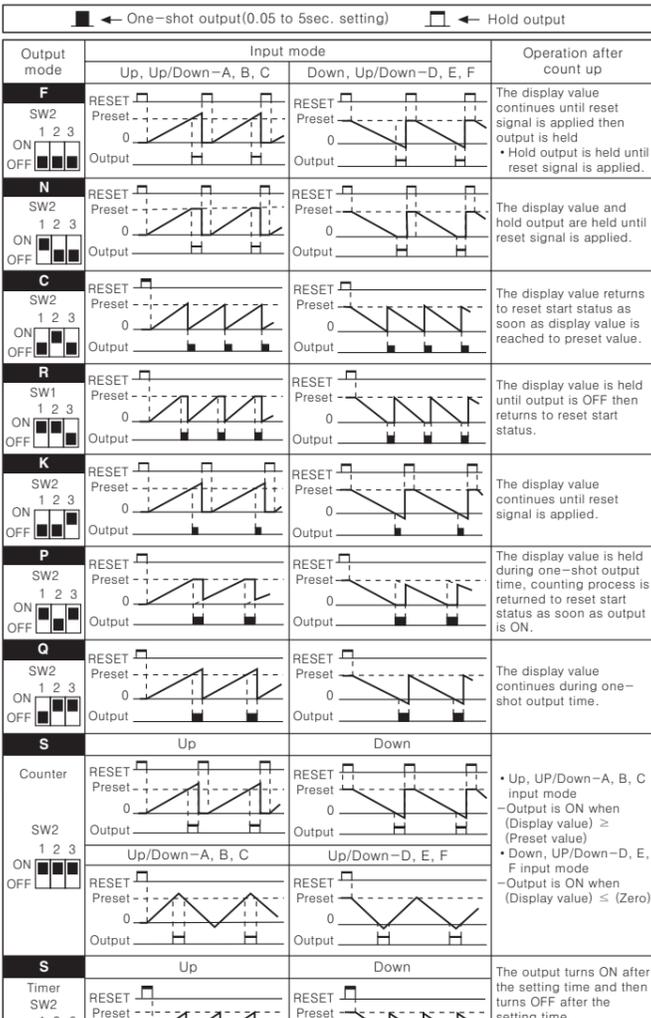
Input logic selection



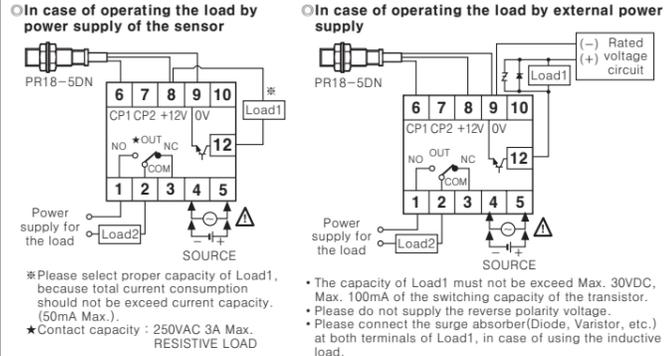
DIP switch detachment



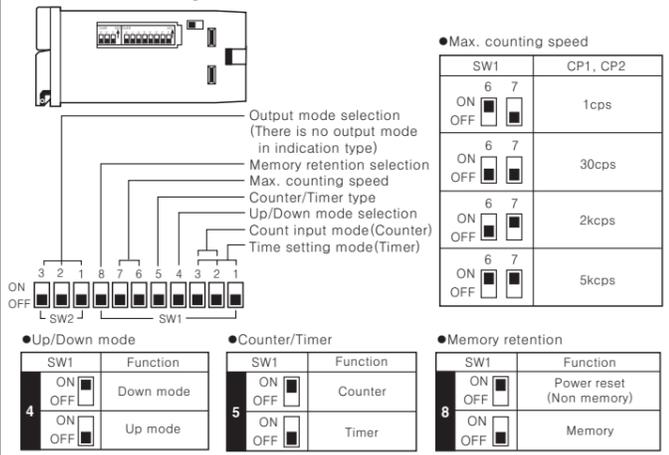
Output operation mode



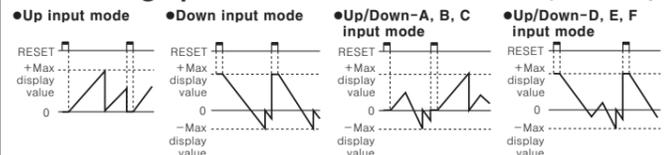
Input & output connection



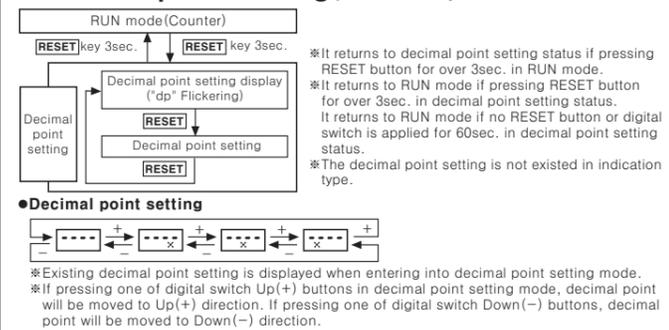
Selection by DIP switches



Counting operation of indication model (FX5S-I)



Decimal point setting (Counter)



Input operation mode (Timer)

SW1	4Digit	5Digit	SW1	4Digit	5Digit
ON	99.99sec	9999.9sec	ON	999.9min	9999.9min
OFF	999.9sec	99999sec	ON	99hour 59min	9hour 59min 59sec
ON	9999sec	9min 59.99sec	ON	999.9hour	999hour 59min
OFF	99min 59sec	99min 59.9sec	ON	9999hour	9999.9hour

Caution for using

- DIP switch setting
Please be sure to turn power OFF before changing Counter/Timer DIP switches setting. If DIP switches setting is changed in power OFF, Counter/Timer must be reset by manual reset or external reset after power ON.
 - INHIBIT (When using as Timer)
 - Please apply INHIBIT signal when stopping the time processing in a while.
 - The time continues when taking off INHIBIT signal.
 - Min. signal width of CP1, CP2 input
*Please make duty ratio (ON/OFF) 1:1.
 - Max. counting speed
This is respond speed per 1sec. when the duty ratio (ON/OFF) of input signal is 1:1. If duty ratio is not 1:1, the respond speed will be getting slow against input signal and also the width between ON and OFF should be over min. signal width. And also one of ON width and OFF width is under min. signal width, this product may not response.
 - 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.
 - *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)

Autonics Corporation
http://www.autonics.com

Satisfiable Partner For Factory Automation

HEADQUARTERS
41-5, Tongdang-ri, Ulsang-eup, Yangsan-si, Gyeongsang, 626-847, Korea

OVERSEAS SALES :
Bldg. 402 3rd Fl., Bucheon Techno Park, 193, Yakhde-dong, Wonmi-gu, Bucheon-si, Gyeonggi-do, 420-734, Korea
TEL: 82-32-610-2730 / FAX: 82-32-329-0728
E-mail: sales@autonics.com

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