

**Autonics**

**DIGITAL TIMER  
FSE 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 "Caution for your safety" to avoid accidents or damages as using it correctly.

\*The meaning of 'Warning' and 'Caution' is as follows:

**Warning** In case a serious injury or dead may be occurred.

**Caution** In case a little injury or a damage of this unit may be occurred.

\*The meaning of the mark on the product and manual is as follows:

**Warning** is a caution mark for danger in special condition.

**Warning**

1. **Please use it with double safety devices when it is used at the equipments which may cause damages to human life or assets (Ex: Nuclear power control, Medical equipment, Vehicle, Train, Air plane, Combustion apparatus, Entertainment or Safety device etc.)** It may cause a fire, human life or assets.

2. **This unit must be mounted on Panel.**

It may give an electric shock.

3. **Do not repair or checkup when power on.**

It may give an electric shock.

4. **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**

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 specification rating.**

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

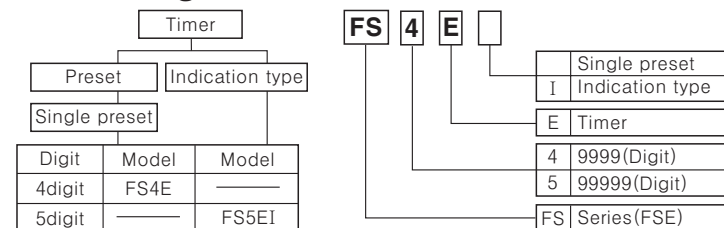
3. **Do not use the load beyond rated switching capacity of Relay contact.**

It may cause insulation failure, contact melt, contact failure, relay broken, a fire etc.

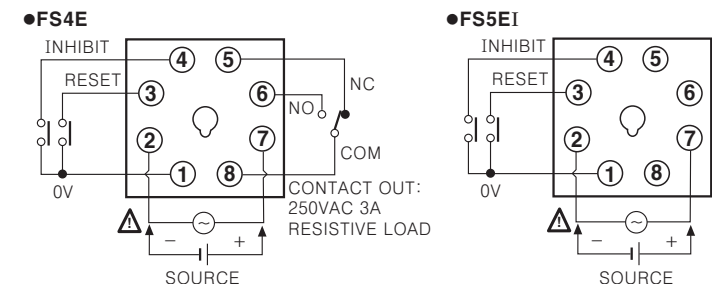
4. **In cleaning the unit, do not use water or an organic solvents.**

It might cause an electric shock or fire that will result in damage to the product.

**Ordering information**



**Connections**

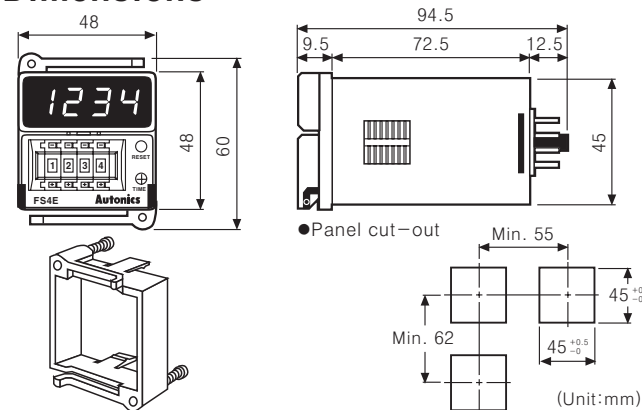


\*The above specification are changeable without notice anytime.

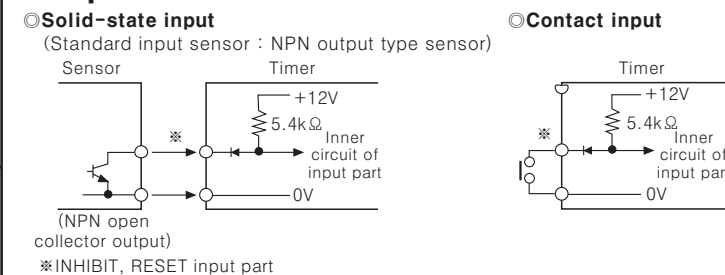
**Specifications**

Model	FS4E	FS5EI
Digit	4	5
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. 3.5VA, Single preset: Approx. 4.5VA (240VAC 50/60Hz)
	AC/DC power	Indication: Approx. 3.4VA, Single preset: Approx. 4.3VA (24VAC 50/60Hz) Indication: Approx. 2.2W, Single preset: Approx. 2.5W (24VDC)
Return time	Min. 500ms	
Min. input signal width	RESET input	Approx. 20ms
	INHIBIT input	
Input method	RESET input	No-voltage input • Impedance at short-circuit: Max. 470Ω • Residual voltage at short-circuit: Max. 1VDC • Impedance at open: Min. 100kΩ
	INHIBIT input	
One-shot output time	0.05 to 5sec.	
Control output	Contact	Type
		Time-limit: SPDT (1c)
		Capacity
		250VAC 3A resistive load
Memory retention	10 years (EEPROM)	
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	
Repeat error		
Set error		
Voltage error	±0.01% ±0.05sec	
Temperature error		
Insulation resistance	Min. 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 <sup>2</sup> (30G) 3 times at X, Y, Z direction
	Malfunction	100m/s <sup>2</sup> (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	Approx. 130g	Approx. 120g

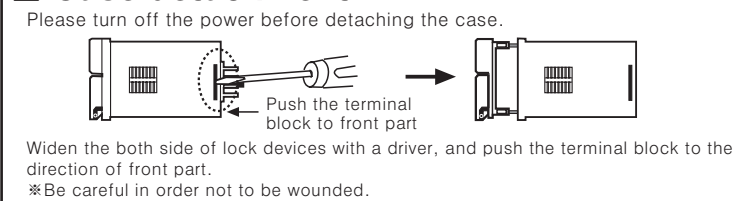
**Dimensions**



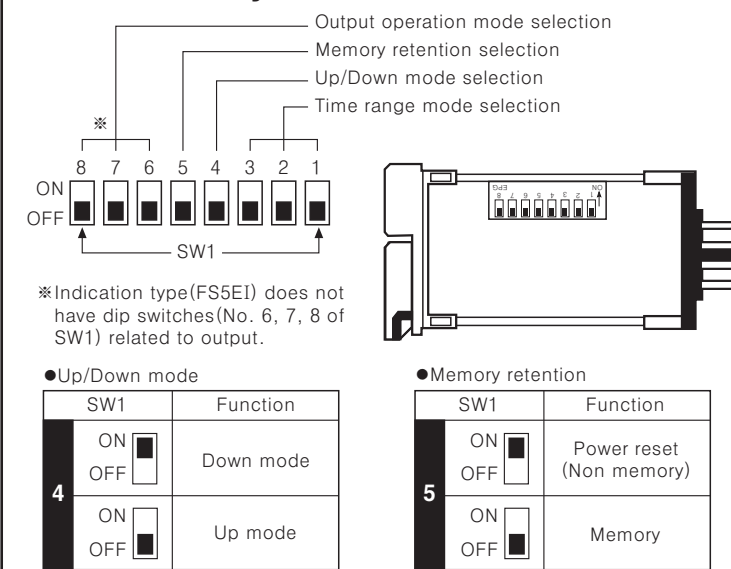
**Input connections**



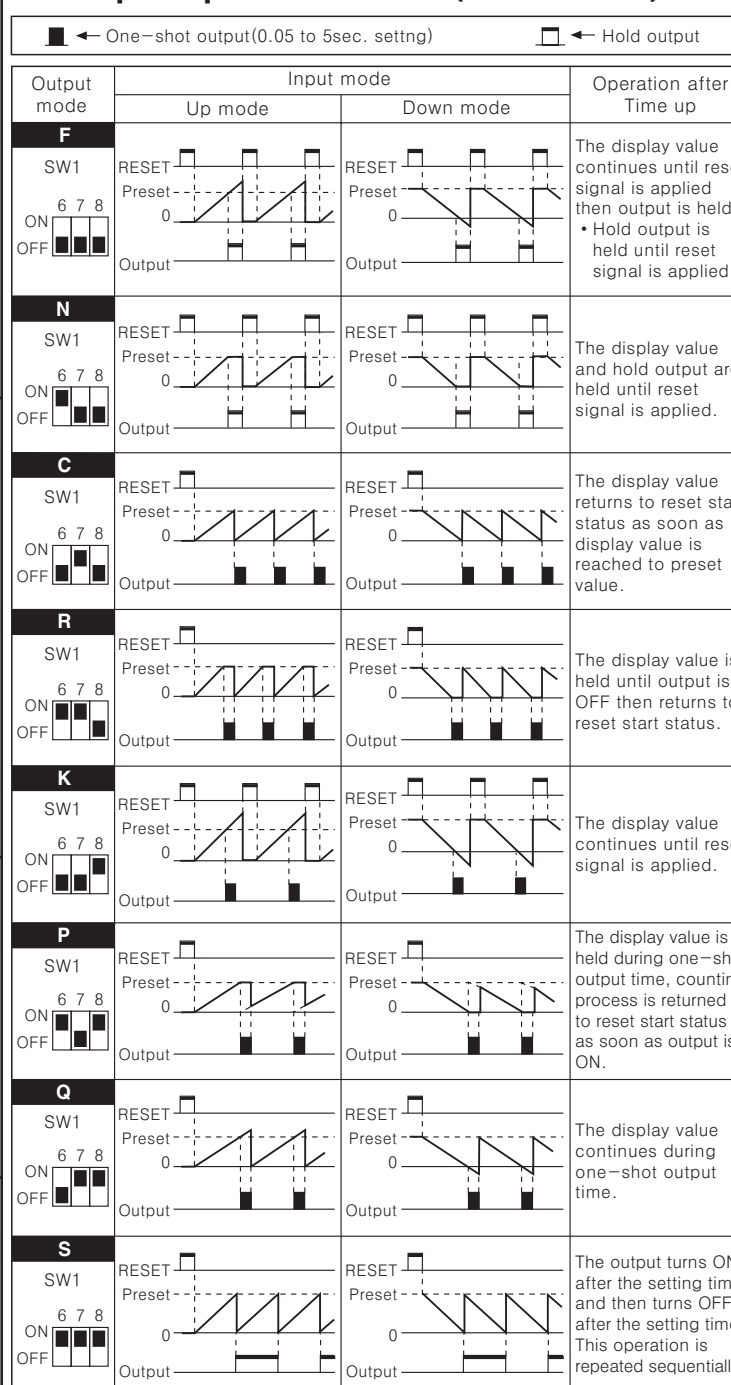
**Case detachment**



**Selection by DIP switches**



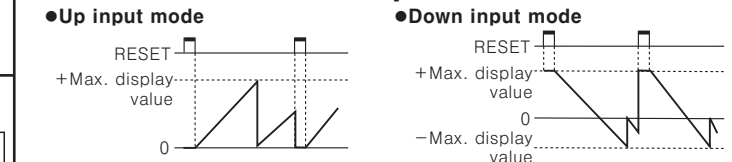
**Output operation mode (DIP switch)**



**Time range mode**

SW1	FS4E	FS5EI	SW1	FS4E	FS5EI
<b>A</b>			<b>E</b>		
ON 1 2 3	99.99sec	9999.9sec	ON 1 2 3	999.9min	9999.9min
OFF			OFF		
<b>B</b>			<b>F</b>		
ON 1 2 3	999.9sec	99999sec	ON 1 2 3	99hour	9hour
OFF			OFF	59min	59min
<b>C</b>			<b>G</b>		
ON 1 2 3	9999sec	9min	ON 1 2 3	999.9hour	999hour
OFF		59.99sec	OFF		59min
<b>D</b>			<b>H</b>		
ON 1 2 3	99min	99min	ON 1 2 3	9999hour	9999.9hour
OFF	59sec	59.9sec	OFF		

**Indication model operation (FS5EI)**

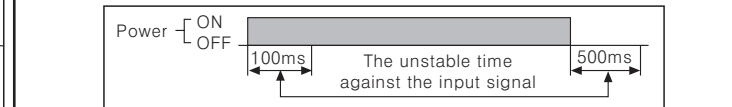


**Caution for using**

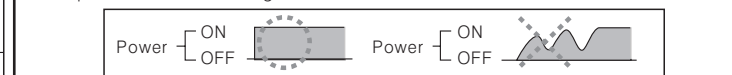
- DIP switch setting  
Please be sure to turn power OFF before changing Timer DIP switches setting. If DIP switches setting is changed in power OFF, Timer must be reset by manual reset or external reset after power ON.
- Error

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

- Power  
①The 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  
①Shorten the cable distance between the sensor and this product.  
②Shielded wire for input signal needed to be long.  
③Please wire input signal line separated from power line.
- When test dielectric voltage and insulation resistance of the control panel with this unit installed.  
①Please isolate this unit from the circuit of control panel.  
②Please make all terminals of this unit short-circuited.
- Do not use this unit at below places.  
①Place where there are severe vibration or impact.  
②Place where strong alkalis or acids are used.  
③Place where there are direct ray of the sun  
④Place where strong magnetic field or electric noise are generated.
- Installation environment  
①It shall be used indoor  
②Altitude Max. 2000m  
③Pollution Degree 2  
④Installation 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 (CO<sub>2</sub>, Nd:YAG)

**Autonics Corporation**  
http://www.autonics.com

**Satisfiable Partner For Factory Automation**

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