

**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.

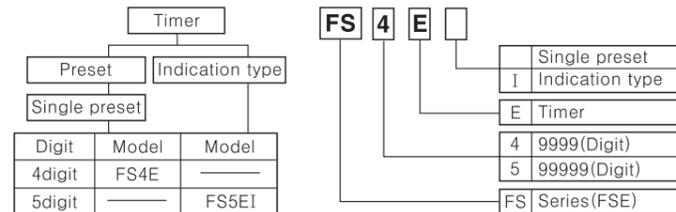
2. Please observe specification rating.

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

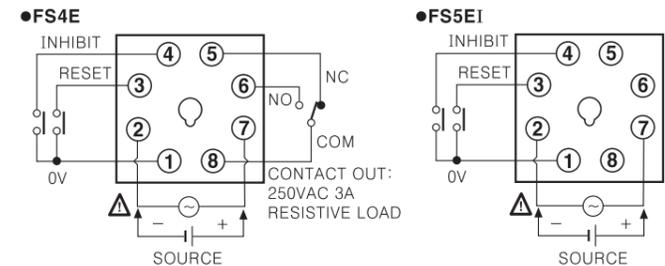
3. Do not use the load beyond rated switching capacity of Relay contact. It may cause insulation failure, contact melt, contact failure, relay broken, a fire etc.

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**

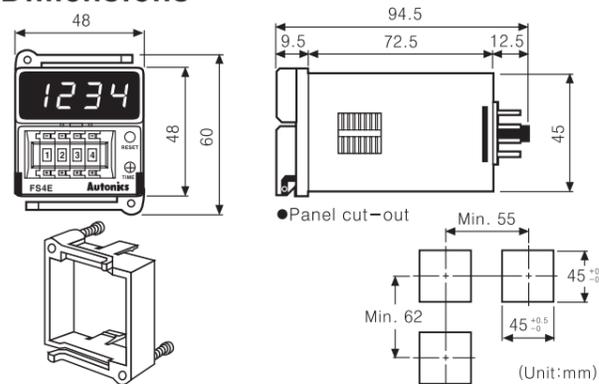


\* The above specifications are subject to change and some models may be discontinued without notice.

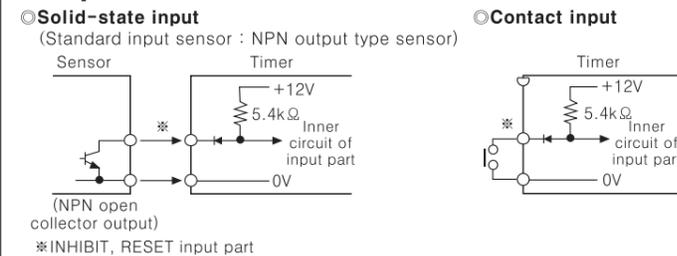
**Specifications**

|                         |               |  |              |
|-------------------------|---------------|--|--------------|
| 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<br>• Impedance at short-circuit: Max. 470Ω<br>• Residual voltage at short-circuit: Max. 1VDC<br>• Impedance at open: Min. 100kΩ |              |
|                         | INHIBIT input | —  |              |
| One-shot output time    |               | 0.05 to 5sec.  |              |
| Control output          | Contact       | 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 |

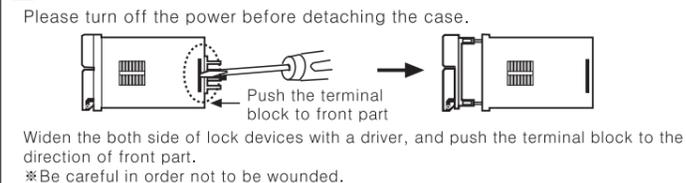
**Dimensions**



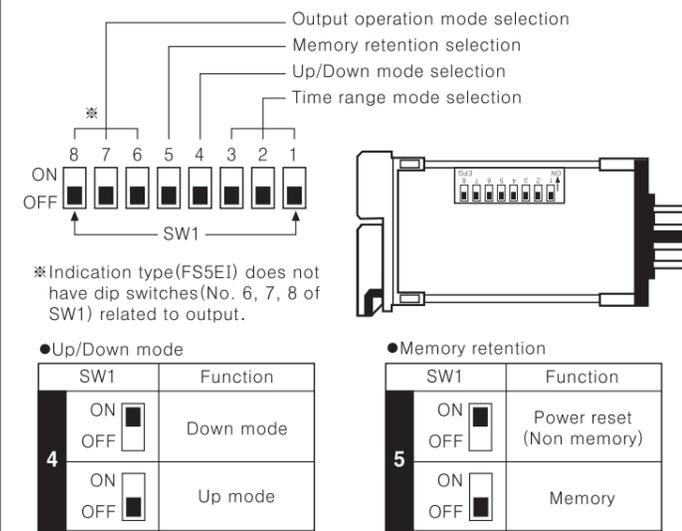
**Input connections**



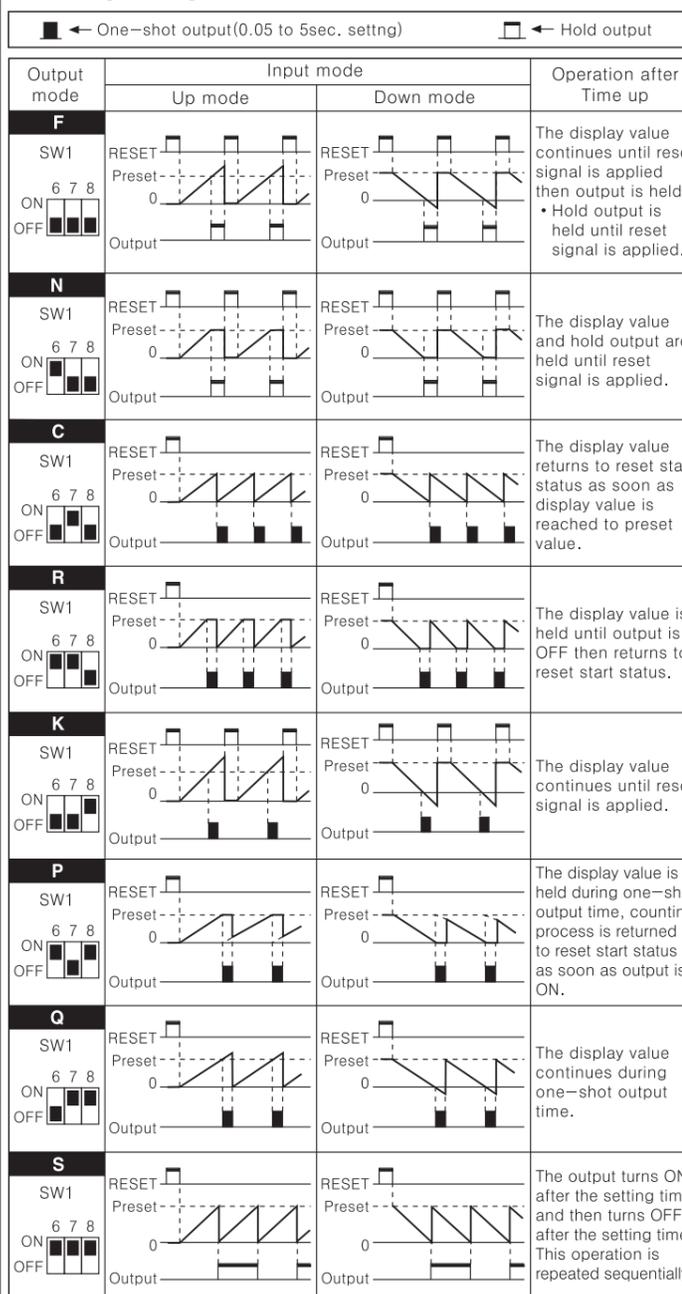
**Case detachment**



**Selection by DIP switches**



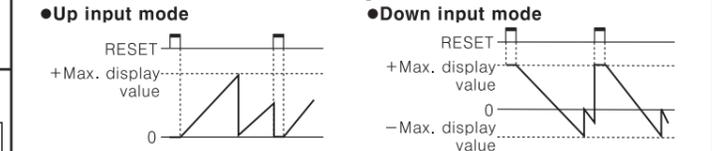
**Output operation mode(DIP switch)**



**Time range mode**

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

**Indication model operation(FS5EI)**

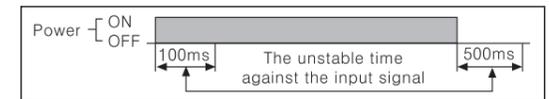


**Caution for using**

- 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.  
④Place where there are severe vibration or impact.  
⑤Place where strong alkalis or acids are used.  
⑥Place where there are direct ray of the sun  
⑦Place 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**

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO<sub>2</sub>, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate) meters
- Display units
- Sensor controllers

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

**Satisfiable Partner For Factory Automation**

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