

# Autonics 8-PIN PLUG TYPE TIMER FSE SERIES

## INSTRUCTION MANUAL



Thank you for choosing our Autonics product.  
Please read the following safety considerations before use.

### Safety Considerations

- Please observe all safety considerations for safe and proper product operation to avoid hazards.
- Safety considerations are categorized as follows.
  - Warning** Failure to follow these instructions may result in serious injury or death.
  - Caution** Failure to follow these instructions may result in personal injury or product damage.
- The symbols used on the product and instruction manual represent the following
  - symbol represents caution due to special circumstances in which hazards may occur.

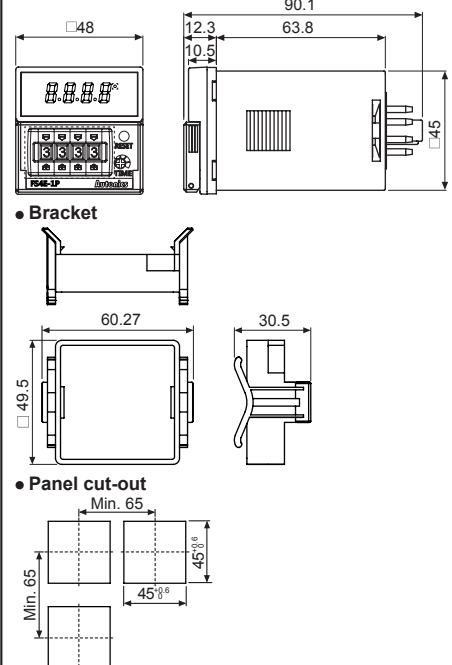
### Warning

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.) Failure to follow this instruction may result in personal injury, fire, or economic loss.
- The unit must be installed on a device panel before use.** Failure to follow this instruction may result in electric shock.
- Do not connect, repair, or inspect the unit while connected to a power source.** Failure to follow this instruction may result in electric shock.
- Do not disassemble or modify the unit. Please contact us if necessary.** Failure to follow this instruction may result in electric shock or fire.

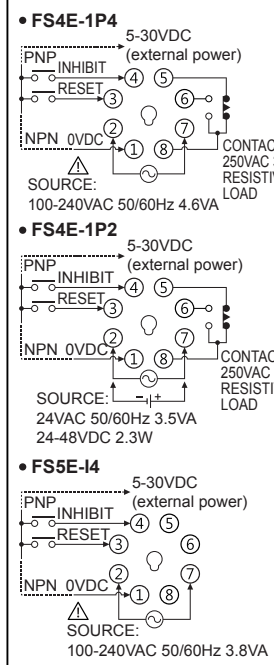
### Caution

- Do not use the unit outdoors.** Failure to follow this instruction may result in shortening the life cycle of the unit, or electric shock.
  - When connecting the power input or relay output cables, make sure to use AWG 20 (0.50mm<sup>2</sup>) cables and make sure to tighten the terminal screw bolt above 0.74 to 0.90N·m.** Failure to follow this instruction may result in fire due to contact failure.
  - Use the unit within the rated specifications.** Failure to follow this instruction may result in shortening the life cycle of the unit, or fire.
  - Do not use loads beyond the rated switching capacity of the relay contact.** Failure to follow this instruction may result in insulation failure, contact melt, contact failure, relay broken, or fire.
  - Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.** Failure to follow these instructions may result in electric shock or fire.
  - Do not use the unit where flammable or explosive gas, humidity, direct sunlight, radiant heat, vibration, and impact may be present.** Failure to follow this instruction may result in fire or explosion.
  - Keep dust and wire residue from flowing into the unit.** Failure to follow this instruction may result in fire or product damage.
- ※ The above specifications are subject to change and some models may be discontinued without notice.

### Dimensions



### Connections



### Model

Model	Display digit	Size	Output	Power supply
FS4E-1P2	9999 (4-digit)	DIN W48xH48mm	1-stage setting	24VAC 50/60Hz, 24-48VDC
FS4E-1P4	99999 (5-digit)			100-240VAC 50/60Hz
FS5E-14	99999 (5-digit)		Indicator	100-240VAC 50/60Hz

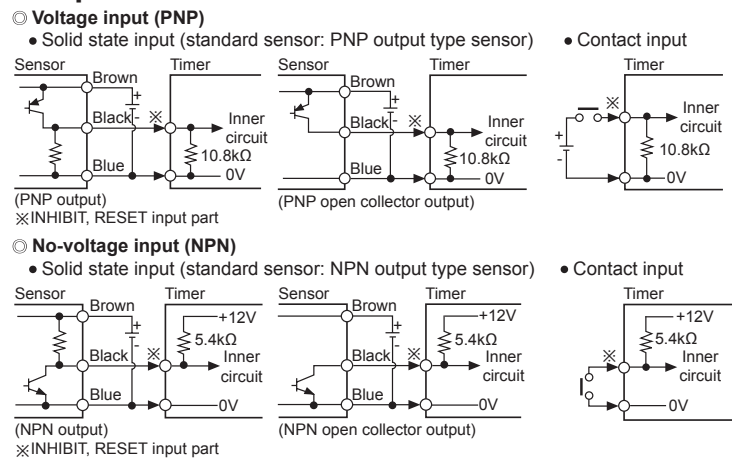
※ Sockets (PG-08, PS-08(N)) are sold separately.

### Specifications

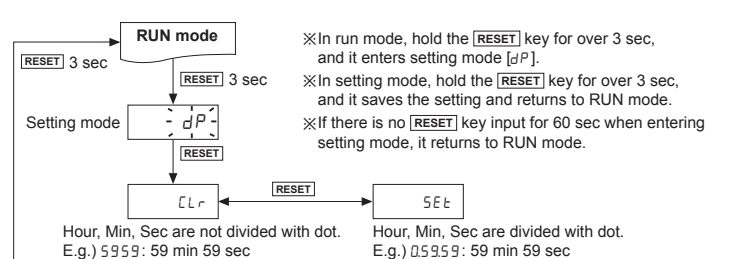
Model	FS4E-1P2	FS4E-1P4	FS5E-14
1-stage setting	Indicator	Indicator	Indicator
Display digit	4-digit	5-digit	5-digit
Character size (W×H)	3.8×7.6mm	4×8mm	4×8mm
Power supply	24VAC~50/60Hz, 24-48VDC	100-240VAC~50/60Hz	—
Permissible voltage range	90 to 110% of rated voltage		
Power consumption	Max. 3.5VA (24VAC~50/60Hz), Max. 2.3W (24-48VDC)	Max. 4.6VA (100-240VAC~50/60Hz)	Max. 3.8VA (100-240VAC~50/60Hz)
Return time	Max. 500ms		
Time operation	Power ON Start		
Min. signal width	RESET, INHIBIT: approx. 20ms		
Input method	Selectable voltage input (PNP) method or no-voltage input (NPN) method [Voltage input (PNP) method]-input impedance: max. 10.8kΩ, [H]: 5-30VDC~, [L]: 0-2VDC [No-voltage input (NPN) method]-short-circuit impedance: max. 470Ω, short-circuit residual voltage: max. 1VDC, open-circuit impedance: min. 100kΩ		
One-shot output time	0.05 to 5 sec		
Control output	Contact Type	Time-limit SPDT (1c)	
Relay	Capacity	250VAC~3A resistive load	
life cycle	Mechanical	Min. 10,000,000 operations	
Electrical	Min. 100,000 operations (250VAC 3A resistive load)		
Memory retention	Approx. 10 years (non-volatile memory)		
Repeat error	—		
Set error	Max. ±0.01% ±0.05 sec		
Voltage error	—		
Temp. error	—		
Insulation resistance	Over 100MΩ (at 500VDC megger)		
Dielectric strength	2,000VAC 50/60Hz for 1 min (between all terminals and case)		
Noise immunity	AC voltage	±2kV the square wave noise (pulse width 1μs) by noise simulator	
AC/DC voltage	±500V the square wave noise (pulse width 1μs) by noise simulator		
Vibration	Mechanical	0.75mm amplitude at frequency 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour	
Malfunction	0.5mm amplitude at frequency 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minutes		
Shock	Mechanical	300m/s <sup>2</sup> (approx. 30G) in each X, Y, Z direction for 3 times	
Malfunction	100m/s <sup>2</sup> (approx. 10G) in each X, Y, Z direction for 3 times		
Environment	Ambient temp.	-10 to 55°C, storage: -25 to 65°C	
Ambient humi.	35 to 85%RH, storage: 35 to 85%RH		
Protection structure	IP20 (front part, IEC standard)		
Approval	CE, RoHS		
Weight*1	Approx. 130g (approx. 90g)		Approx. 120g (approx. 80g)

※1: The weight includes packaging. The weight in parenthesis is for unit only.  
※ Environment resistance is rated at no freezing or condensation.

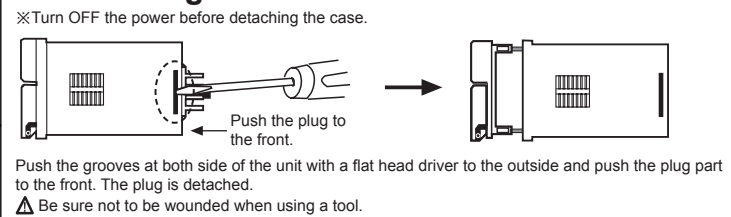
### Input Connection



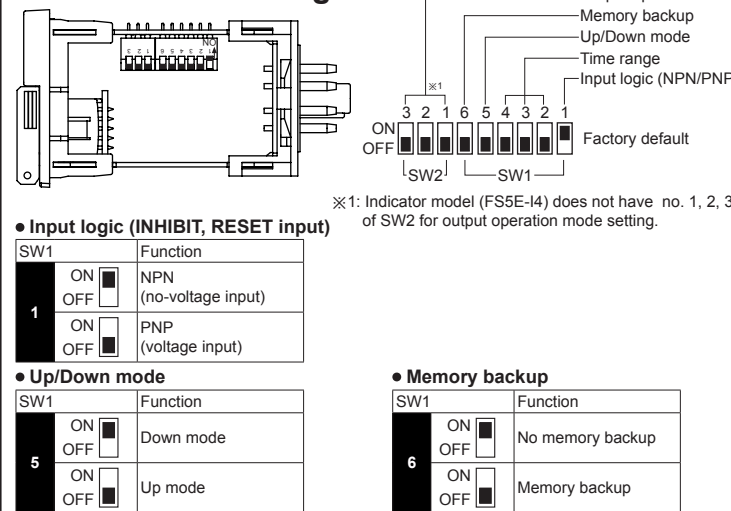
### Dot for Hour. Min. Second



### Detaching Case



### DIP Switch Setting



### Output Operation Mode

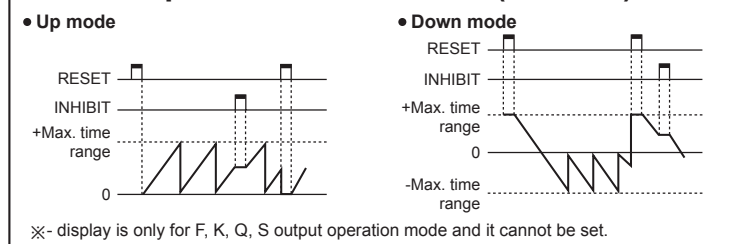
Output mode (SW2)	ON OFF	Up mode	Down mode	Operation
F	ON OFF	Setting: 0	Setting: 0	After time-up, the display value increases or decreases until reset signal input is applied and self-holding output is maintained.
N	ON OFF	Setting: 0	Setting: 0	After time-up, the display value and self-holding output are maintained until reset signal input is applied.
C	ON OFF	Setting: 0	Setting: 0	When time-up, the display value is reset and it operates simultaneously.
R	ON OFF	Setting: 0	Setting: 0	After time-up, the display value is reset after one-shot output time and it operates simultaneously.
K	ON OFF	Setting: 0	Setting: 0	After time-up, the display value increases or decreases until reset signal input is applied.
P	ON OFF	Setting: 0	Setting: 0	After time-up, the display value is maintained while output is ON. The value is internally reset and it operates simultaneously.
Q	ON OFF	Setting: 0	Setting: 0	After time-up, the display value increases or decreases during one-shot output time.
S	ON OFF	Setting: 0	Setting: 0	Output turns OFF → ON → OFF repeatedly (flicker).

※ Set one-shot output time by front TIME volume switch.

### Time Range

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

### Time Operation for Indicator (FS5E-14)



### Cautions During Use

- DIP switch setting**  
Turn OFF the power before setting the DIP switch to the Timer. After DIP switch setting when cutting off the power, press the front RESET key or supplying the external reset.
- Error**  
Display Error: Setting value is 0. Troubleshooting: Change the setting value anything but 0.  
※ If error occurs, the output turns OFF.  
※ Indicator model does not have error display function.
- Power**  
① In case of 24VAC, 24-48VDC model, power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.  
② The inner circuit voltage rises within 100ms after supplying the power to the unit. The input may be unavailable at this period. Be sure that the inner circuit voltage drops within 500ms after turning OFF the power.  
③ Use the unit within the rated power supply. When supplying or cutting the power, use a switch not to occur chattering.

- Input signal line**  
① Shorten the cable from the sensor to the unit.  
② Use shield cable when input cable is longer.  
③ Wire the input signal line separately from power line.
  - Testing dielectric voltage or insulation resistance when the unit is installed at control panel**  
① Isolate the unit from the circuit of control panel.  
② Short all terminals of the unit.
  - Do not use the unit in the following environments.**  
① Environments with high vibration or shock.  
② Environments with strong alkali or strong acid materials  
③ Environments with exposure to direct sunlight  
④ Near machinery which produces strong magnetic force or electric noise
  - This product may be used in the following environments.**  
① Indoor  
② Altitude max. 2,000m  
③ Pollution degree 2  
④ Installation category II
- ※ Failure to follow these instructions may result in product damage.

### Major 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., Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometers/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

**Autonics Corporation**  
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