

# Autonics

## STAR-DELTA TIMER

# AT8SDN

### INSTRUCTION MANUAL



Thank you very much for selecting Autonics products.  
For your safety, please read the following before using.

### ■ Safety Considerations

- ※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.

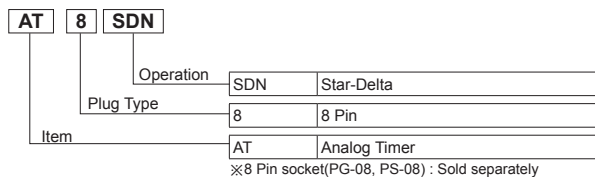
#### ▲ Warning

- 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 fire, personal injury, or economic loss.
- Install on a device panel to use.**  
Failure to follow this instruction may result in electric shock or fire.
- Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow this instruction may result in electric shock or fire.
- Check 'Connections' before wiring.**  
Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.**  
Failure to follow this instruction may result in electric shock or fire.

#### ▲ Caution

- Use the unit within the rated specifications.**  
Failure to follow this instruction may result in fire or product damage.
- Use dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow this instruction may result in electric shock or fire.
- Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**  
Failure to follow this instruction may result in fire or explosion.
- Keep metal chip, dust, and wire residue from flowing into the unit.**  
Failure to follow this instruction may result in fire or product damage.

### ■ Ordering Information



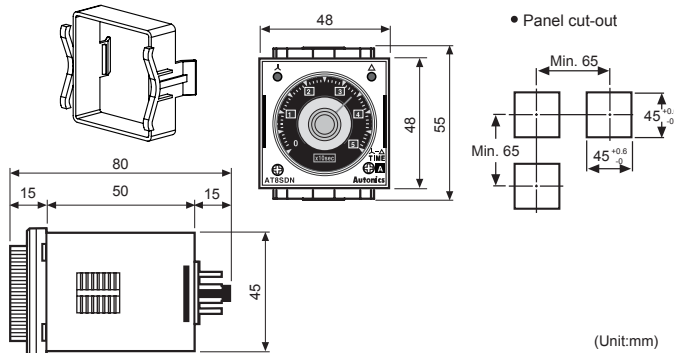
※The above specifications are subject to change and some models may be discontinued without notice.  
※Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

### ■ Specifications

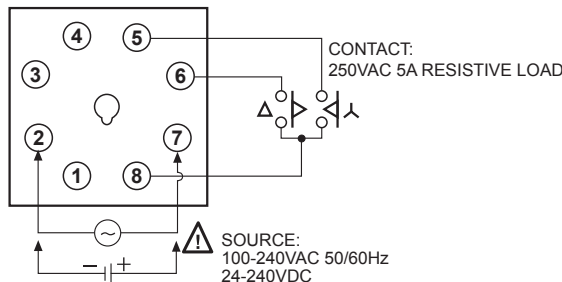
Model	AT8SDN	
Function	Star-Delta	
Control time setting range	0.5 sec ~ 100 sec	
Power supply	100-240VAC ~ 50/60Hz, 24-240VDC= (Universal)	
Allowable voltage range	90 ~ 110% of rated voltage	
Power consumption	100-240VAC ~ : 3.2VA, 24-240VDC= : 1.5W	
Return time	Max. 100ms	
Control output	Contact	Type
		Contact : SPST(1a), Contact : SPST(1a)
	Capacity	250VAC ~ 5A resistive load
Relay life cycle	Mechanical	Min. 10,000,000 times
	Electrical	Min. 100,000 times(250VAC 5A resistive load)
Repeat error	Max. ±0.2% ±10ms	
Setting error	Max. ±5% ±50ms	
Voltage error	Max. ±0.5%	
Temperature error	Max. ±2%	
Switching time error	Max. ±25%	
Insulation resistance	100MΩ(at 500VDC megger)	
Dielectric strength	2000VAC 50/60Hz for 1 minute	
Noise strength	Square-wave noise by noise simulator, apply ±2kV in power input terminals	
Vibration	Destruction	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hours
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes
Shock	Destruction	300m/s <sup>2</sup> (Approx. 30G) 3 times at X, Y, Z direction
	Malfunction	100m/s <sup>2</sup> (Approx. 10G) 3 times at X, Y, Z direction
Environ-ment	Ambient temperature	-10 ~ 55°C, Storage temperature: -25 ~ 65°C
	Ambient humidity	35 ~ 85%RH, Storage humidity: 35 ~ 85%RH
Approval	CE, c, RU, US	
Unit weight	Approx. 90g	

※Environment resistance is rated at no freezing or condensation.

### ■ Dimensions



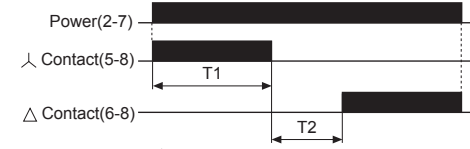
### ■ Connections



### ■ Operation and Time Specification

#### ● Operation

∧ contact will be ON as soon as power is supplied, ∩ contact will be OFF when T1 setting time is up then ∆ contact will be ON after T2 switching time is up.  
∆ contact will be OFF when cut off the power at the status of ∩ contact is ON.



T1 : Setting time(∧ contact operation)  
T2 : ∩-∆ Switching time(∩ and ∆ contact are OFF when power is ON.)

#### ● Time specification

##### • T1(Setting time)

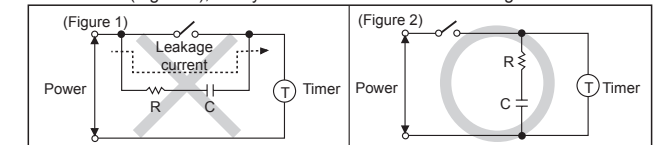
Time range	Time unit	Time setting range
0.5	×10 sec	0.5 ~ 5 sec
1.0		1 ~ 10 sec
5		5 ~ 50 sec
10		10 ~ 100 sec

##### • T2(∩-∆ Switching time)

Display	A	F	F1	C	D	I	Unit: sec
T2(∩-∆ Switching time)	0.05	0.1	0.2	0.3	0.4	0.5	

### ■ Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
- When supplying or turning off the power, use a switch or etc. to avoid chattering.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- In order to avoid leakage current flowing, connect resistance and condenser as (Figure 2).  
If connect as (Figure 1), it may cause malfunction due to leakage current.



- Keep away from high voltage lines or power lines to prevent inductive noise.  
In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.  
Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Change setting time(T1), Y-Δ switching time or etc. after turning off the power of the timer.
- This product may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000m
  - Pollution degree 2
  - Installation category II

### ■ 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

<http://www.autonics.com>

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