

# Autonics

## STAR DELTA TIMER AT8SDN

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.

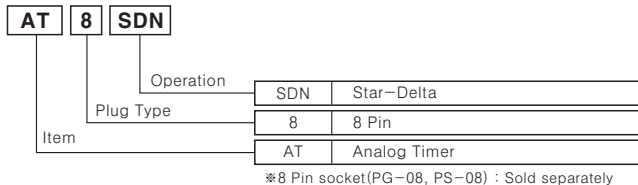
### Warning

- In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it is required to install fail-safe device, or contact us.**  
It may cause a fire, human injury or property loss.
- Install the unit on a panel.**  
It may give an electric shock.
- Do not connect, inspect or repair when power is on.**  
It may give an electric shock.
- Do not disassemble the case. Please contact us if it is required.**  
It may cause an electric shock or a fire.

### Caution

- This unit shall not be used outdoors.**  
It might shorten the life cycle of the product or give an electric shock.
- Please observe the rated specifications.**  
It might shorten the life cycle of the product and cause a fire.
- Do not use beyond of the rated switching capacity of Relay contact.**  
It may cause insulation failure, contact melt, contact failure, relay broken and fire etc.
- In cleaning unit, do not use water or an oil-based detergent and use dry towels.**  
It may cause an electric shock or a fire.
- Do not use this unit in place where there are flammable or explosive gas, humidity, direct ray of the light, radiant heat, vibration and impact etc.**  
It may cause a fire or an explosion.
- Do not inflow dust or wire dregs into the unit.**  
It may cause a fire or a malfunction.

### Ordering information



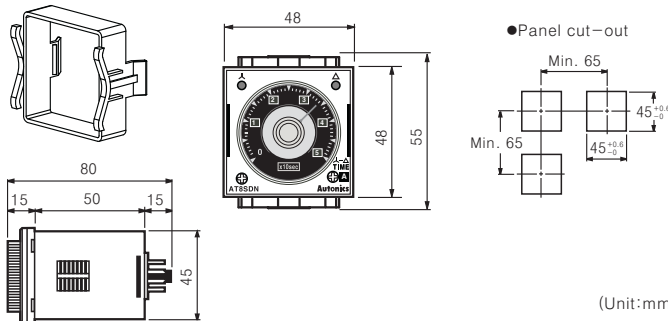
\*The above specifications are subject to change without notice.

### Specifications

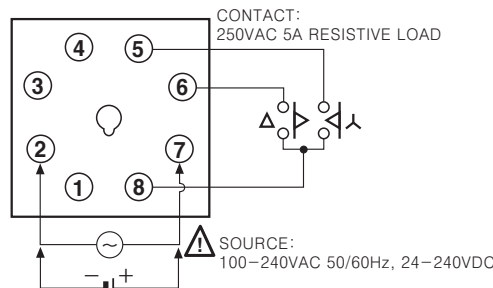
Model	AT8SDN		
Function	Star-Delta		
Control time setting range	0.5 sec ~ 100 sec		
Power supply	100-240VAC 50/60Hz, 24-240VDC (Universal)		
Allowable voltage range	90 ~ 110% of rated voltage		
Power consumption	100-240VAC : 3.2VA, 24-240VDC : 1.5W		
Return time	Max. 100ms		
Control output	Contact	Type	∧ Contact : SPST (1a), Δ 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%		
∧-Δ 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	
Environment	Ambient temperature	-10 ~ 55°C, Storage temperature: -25 ~ 65°C	
	Ambient humidity	35 ~ 85%RH, Storage humidity: 35 ~ 85%RH	
Unit weight	Approx. 90g		

\*Environment resistance is rated at no freezing or condensation.

### Dimensions



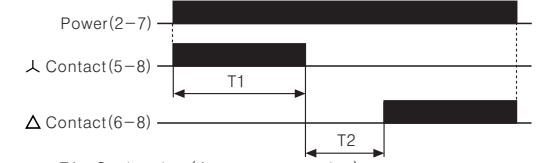
### Connections



### 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.



#### Time specification

##### T1 (Setting time)

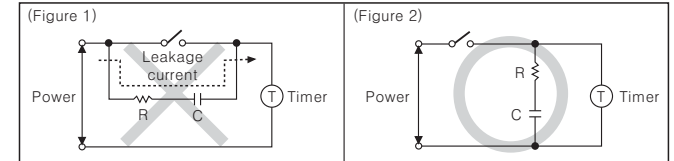
Time range	Time unit	Time setting range
0.5	× 10 sec	0.5 ~ 5 sec
1.0		1 ~ 10 sec
5		5 ~ 50 sec
10		10 ~ 100 sec

##### T2 (∧-∆ Switching time)

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

### Caution for using

- When apply the power, please apply rating power at the moment by switch, relay etc. Otherwise it might cause malfunction.
- When supply the power to the Timer, connection shown in Figure 1 might cause malfunction due to leakage current through R and C. Please connect R and C as shown in Figure 2 to prevent malfunction.



- It might cause malfunction if changing the setting time, time range or operation mode during operating unit. Please change the setting time, time range or operation mode after cut the power off.
- When performing dielectric voltage test or insulation resistance test while the unit is installed on control panel,
  - 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.

### Major products

- Proximity sensors
- Area sensors
- Door/Door side sensors
- Counters
- Rotary encoders
- Power controllers
- Panel meters
- Temperature controllers
- Tachometer/Pulse(Rate) meters
- Temperature/Humidity transducers
- Switching power supplies
- Stepping motors/drivers/motion controllers
- Field network devices
- Laser marking system (CO<sub>2</sub>, Nd:YAG)
- Laser welding/soldering system
- Photoelectric sensors
- Fiber optic sensors
- Pressure sensors
- Timers
- Display units
- Sensor controllers
- Graphic/Logic panels

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

**Satisfiable Partner For Factory Automation**

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