

W 48 × H 48 mm Star-Delta Analog Timers



AT8SDN Series PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Wide range of power supply
: 100 - 240 VAC ~ 50 / 60 Hz, 24 - 240 VDC = universal
- Wide range of setting time and switching time
 - T1 (setting time): Selectable 0.5 to 100 sec
 - T2 (switching time): Selectable 0.05, 0.1, 0.2, 0.3, 0.4, 0.5 sec
- Simple setting time, switching time operation
- Easy to check output status by LED display
- Application: Starting large capacity motors

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

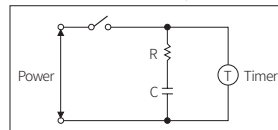
- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel to use.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- 05. Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 06. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 02. Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
- 03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.

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 like below. Otherwise, it may cause malfunction.



- After turning off the power, change the time range, etc.
- 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.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation category II

Product Components

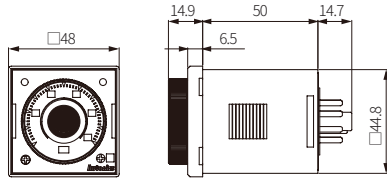
- Product (+ bracket)
- Instruction manual

Sold Separately

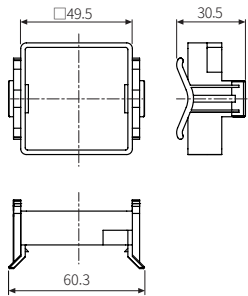
- 8-pin socket: PG-08, PS-08(N)

Dimensions

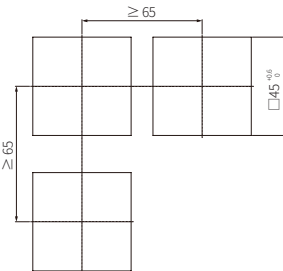
- Unit: mm, For the detailed drawings, follow the Autonics website.



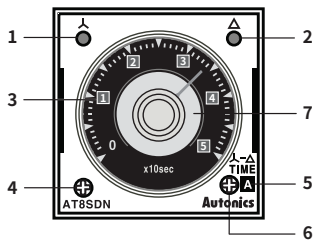
Bracket



Panel cut-out



Unit Descriptions



No.	Name
1	Y operation indicator
2	Δ operation indicator
3	Time range display part
4	Time range setting switch
5	Y - Δ switching time display part
6	Y - Δ switching time setting switch
7	Dial for the time setting

Y - Δ Switching Time

Display part	Time unit	Switching time
A	SEC	0.05
F		0.1
F1		0.2
C		0.3
D		0.4
I		0.5

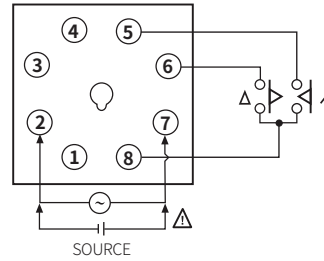
Time Range

Display part	Unit	Range
0.5	10SEC	0.5 to 5
1		1 to 10
5		5 to 50
10		10 to 100

Connections

⚠ Caution

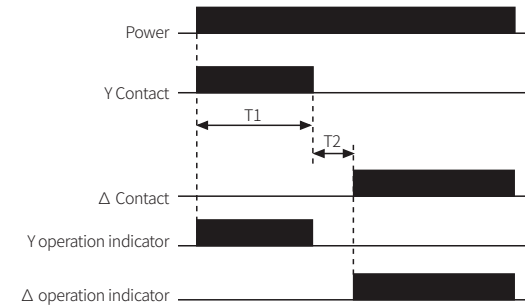
: Refer to the 'specifications' for checking the power supply and control output.



Operation Timing Chart

When power is applied, Y Contact will be ON simultaneously. And when reaching to T1, Y Contact will be OFF and after T2 is passed, Δ Contact will be ON. If the power is OFF under the status that Δ Contact is ON, the contact will be OFF.

- T1: Y contact operation time,
- T2: Y - Δ switching time (power: ON → Y, Δ contacts OFF simultaneously)



Specifications	
Model	AT8SDN
Function	Star-Delta Timer
Return time	≤ 100 ms
Time operation	Power ON Start
Control output	Relay
Contact type	Y Contact: Time limit SPST (1a), Δ Contact: Time limit SPST (1a)
Contact capacity	250 VAC~ 5 A, 30 VDC= 5 A resistive load
Error	Repeat: ≤ ± 0.2% ± 10 ms Voltage: ≤ ± 0.5% Temp.: ≤ ± 2% Y setting time: ≤ ± 5% ± 50 ms Y-Δ switching time: ≤ ± 25%
Approval	CE  ENEC
Weight	≈ 90 g
Power supply	100 - 240 VAC~ ± 10% 50 / 60 Hz, 24 - 240 VDC= ± 10%
Power consumption	AC: ≤ 3.2 VA, DC: ≤ 1.5 W
Insulation resistive	≥ 100 MΩ (500 VDC= megger)
Dielectric strength	2,000 VAC~ at 50 / 60 Hz for 1 min
Noise immunity	± 2 kV square-wave noise by noise simulator (pulse width 1 μs)
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 1 hour
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times
Relay life cycle	Mechanical: ≥ 10,000,000 operations Electrical: ≥ 100,000 operations (250 VAC~ 5 A resistive load)
Ambient temperature	-10 to 55 °C, storage: -25 to 65 °C (no freezing or condensation)
Ambient humidity	35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)