Autonics

ANALOG TIMER

ATS11 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

1. **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.
2. **The unit must be installed on a device panel before use.**
   Failure to follow this instruction may result in electric shock.
3. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in electric shock.
4. **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

1. **Do not use the unit outdoors.**
   Failure to follow this instruction may result in shortening the life cycle of the unit, or electric shock.
2. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in shortening the life cycle of the unit, or fire.
3. **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.
4. **Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.**
   Failure to follow this instruction may result in electric shock or fire.
5. **Do not use the unit where flammable or explosive gas, humidity, direct sunlight, radiant heat, vibration, or impact may be present.**
   Failure to follow this instruction may result in fire or explosion.
6. **Keep dust and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.

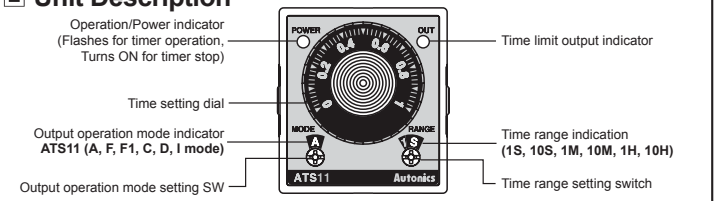
■ Ordering Information

ATS 11 - 4 1 D

※Sockets (PG-11, PS-11(N)) are sold separately.

Output	D	Time limit 2c
	E	Instantaneous 1c + Time limit 1c
Time range	1	Time range 1 (0.1 to 1)
	3	Time range 3 (0.3 to 3)
Power supply	1	12VDC
	2	24VAC 50/60Hz, 24VDC
	4	100-240VAC 50/60Hz, 24-240VDC
Number of plug pins	11	11-pin plug type
Item	ATS	Small Analog Timer

■ Unit Description



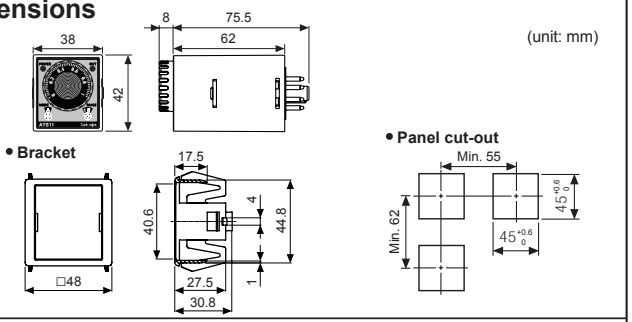
■ Time Specifications

Model	Time range	Time unit	Time setting range	Model	Time range	Time unit	Time setting range
ATS11-□1□	1S	SEC	0.1 to 1 sec.	ATS11-□3□	1S	SEC	0.3 to 3 sec.
	10S		1 to 10 sec.		10S		3 to 30 sec.
	1M	MIN	0.1 to 1 min.		1M	MIN	0.3 to 3 min.
	10M		1 to 10 min.		10M		3 to 30 min.
	1H	HOUR	0.1 to 1 hour		1H	HOUR	0.3 to 3 hour
	10H		1 to 10 hour		10H		3 to 30 hour

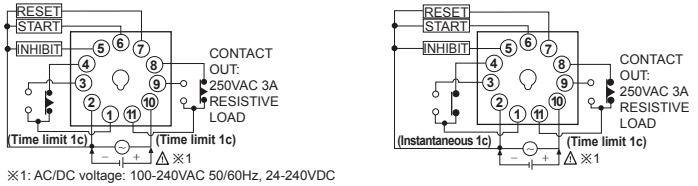
※**The above specifications are subject to change and some models may be discontinued without notice.**

■ Dimensions

(unit: mm)



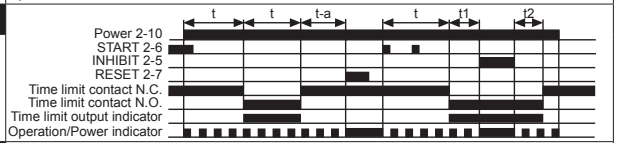
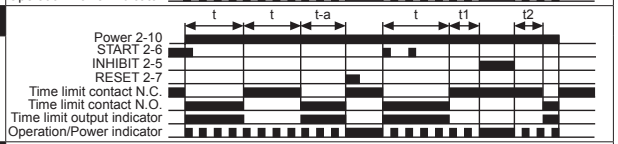
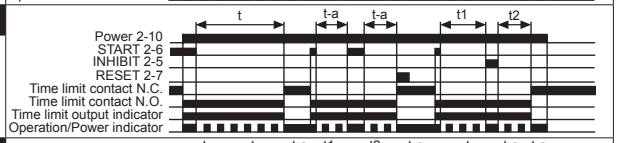
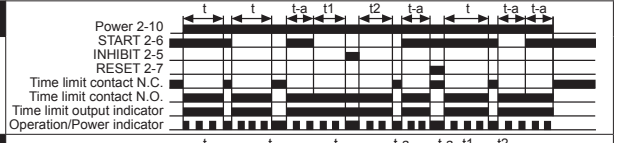
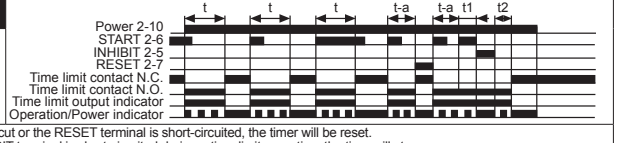
■ Connections



※1: AC/DC voltage: 100-240VAC 50/60Hz, 24-240VDC
: 24VAC 50/60Hz, 24VDC
DC voltage: 12VDC

■ Output Operation Mode

[t: Setting time, t=t1+t2, t>t-a]

Mode	Time chart
A Signal ON Delay	
F Flicker (OFF Start)	
F1 Flicker 1 (ON Start)	
C Signal OFF Delay	
D Signal ON/OFF Delay	
I Interval	

※If power is cut or the RESET terminal is short-circuited, the timer will be reset.
※If the INHIBIT terminal is short-circuited during a time limit operation, the time will stop.
※In case of F, F1 output operation mode, setting time should be over 100ms.
If not, it may cause abnormal output operation due to under 100ms of setting time.

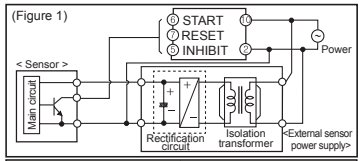
■ Specifications

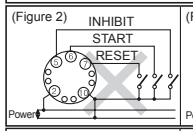
Model		ATS11-□1D	ATS11-□3D	ATS11-□1E	ATS11-□3E
Function		Multi Function Timer			
Control time setting range※1		0.1 sec. to 10 hour	0.3 sec. to 30 hour	0.1 sec. to 10 hour	0.3 sec. to 30 hour
Power supply		•100-240VAC 50/60Hz, 24-240VDC universal		•24VAC 50/60Hz, 24VDC universal	• 12VDC
Allowable voltage range		90 to 110% of rated voltage			
Power consumption		•Max. 3.5VA (100-240VAC) , Max. 1.5W (24-240VDC) •Max. 4VA (24VAC), Max. 1.5W (24VDC) •Max. 1W (12VDC)		•Max. 4.2VA (100-240VAC) , Max. 2W (24-240VDC) •Max. 4.5VA (24VAC), Max. 2W (24VDC) •Max. 1.5W (12VDC)	
Return time		Max. 100ms			
Min. input signal width		Start, Inhibit, Reset: Min. 50ms			
Input		Start, Inhibit, Reset: [No-voltage input] - Short-circuit impedance: Max. 1kΩ, Residual voltage: Max. 0.5V, Open-circuit impedance: Max. 100kΩ			
Time operation		Signal ON Start			
Control output	Contact type	Time limit DPDT (2c)		Instantaneous SPDT (1c)+Time limit SPDT (1c)	
	Contact capacity	250VAC 3A resistive load			
Relay life cycle	Mechanical	Min. 10,000,000 operations			
	Electrical	Min. 100,000 operations (250VAC 3A resistive load)			
Repeat error		Max. ±0.2% ±10ms			
Setting error		Max. ±5% ±50ms			
Voltage error		Max. ±0.5%			
Temperature error		Max. ±2%			
Insulation resistance		100MΩ (at 500VDC megger)			
Dielectric stength		2,000VAC 50/60Hz for 1 minute			
Noise resistance		±2kV the square wave noise (pulse width 1μs) by noise simulator			
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 1 hour			
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 10 min.			
Shock	Mechanical	300m/s² (approx. 30G) in each X, Y, Z direction 3 times			
	Malfunction	100m/s² (approx. 10G) in each X, Y, Z direction 3 times			
Environment	Ambient temp.	-10 to 55°C, Storage: -25 to 65°C			
	Ambient humid.	35 to 85%RH, Storage: 35 to 85%RH			
Approval		CE cULus			
Accessory		Bracket			
Weight※2		Approx. 95g (approx. 70g)			

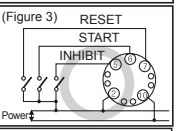
※1: Refer to time specifications for control time setting range by model.
※2: The weight includes packaging. The weight in parentheses is for unit only.
※Environment resistance is rated at no freezing or condensation.

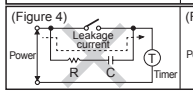
■ Cautions During Use

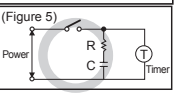
1. Please connect DC power input after checking polarity of power.
2. In case of 12VDC, 24VAC, 24VDC model, isolated and limited voltage/current or Class 2 sources should be provided for power supply.
3. When applying the power to the timer, please apply the rated power at the moment by switch, relay, etc. Otherwise it might cause malfunction.
4. Power circuit of ATS11 timer does not use trans. Use isolation transformer which secondary part is not grounded as (Figure 1) to cut off peripheral current flow for supplied power to external input devices.
5. As (Figure 2), if using terminal ⑩ as common terminal of input signal, it may cause damage to inner circuit of ATS11 timer. Use ② terminal as common terminal referring to (Figure 3).
6. When supply the power to the timer, connection shown in Figure 4 might cause malfunction due to leakage current through R and C. Please connect R and C as shown in (Figure 5) to prevent malfunction.
7. In order to apply input signals (START, RESET, INHIBIT), short-circuit the terminal no. ②-⑤, ②-⑥ or ②-⑦. It may cause internal circuit damage by wrong connections.
8. Do not wire START, RESET, INHIBIT signal input line with power line, high voltage line in parallel.
9. It might cause malfunction if changing the setting time, time range or operation mode during unit operating unit. Please change the setting time, time range or operation mode after cut the power off.
10. Do not use this unit at below places.
    ①Place where there are severe vibration or impact.
    ②Place where strong alkalis or acids are used.
    ③Place where there are direct ray of the sun.
    ④Place where strong magnetic field or electric noise are generated.
11. Installation environment
    ①It shall be used indoor ②Altitude Max. 2000m ③Pollution Degree 2 ④Installation 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_2, 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

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