DIN W48×H48mm, Universal Voltage Multi-Function Timer

■ Features

- Realization of wide range of power supply
  :100-240VAC 50/60Hz, 24-240VDC universal,
  24VAC 50/60Hz, 24VDC universal, 12VDC
- Various output operation (6 kinds modes)
- Multi time range (16 kinds of time range)
- Wide control time (0.05sec to 100hour)
- Easy setting of time, time range, output operation mode
- Easy to check output status by indicator

⚠ **Please read "Safety Considerations" in operation manual before using.**

■ Ordering Information

AT 8 N – □

Power supply	No mark	100-240VAC 50/60Hz, 24-240VDC
	1	12VDC
	2	24VAC 50/60Hz, 24VDC
Time operation	N	Time limit DPDT (2c) or instantaneous SPDT (1c)+Time limit SPDT (1c) selectable by output operation mode
	DN	Time limit DPDT (2c)
	EN	Instantaneous SPDT (1c)+Time limit SPDT (1c)
Number of plug pins	8	8-pin plug type
	11	11-pin plug type
Item	AT	Analog Timer

※8-pin socket (PG-08, PS-08(N), PS-08) and 11-pin socket (PG-11, PS-11(N)) are sold separately.

■ Specifications

Model		AT8N-□	AT11DN-□	AT11EN-□
Function		**Multi Function Timer**		
Control time setting range※1		0.05sec to 100hour		
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. 4.3VA (100-240VAC～), Max. 2W (24-240VDC⎓) • Max. 4.5VA (24VAC～), Max. 2W (24VDC⎓) • Max. 1.5W (12VDC⎓)	• Max. 3.5VA (100-240VAC～), Max. 1.5W (24-240VDC⎓) • Max. 4VA (24VAC～), Max. 1.5W (24VDC⎓) • Max. 1W (12VDC⎓)	• Max. 4.3VA (100-240VAC～), Max. 2W (24-240VDC⎓) • Max. 4.5VA (24VAC～), Max. 2W (24VDC⎓) • Max. 1.5W (12VDC⎓)
Return time		Max. 100ms		
Timing operation		Power ON Start	Signal ON Start	
Min. input signal width		—	INHIBIT, START, RESET: Approx. 50ms	
Input		—	INHIBIT, START, RESET: [No-voltage input] - Short-circuit impedance: Max. 1kΩ, Residual voltage: Max. 0.5V, Open-circuit impedance: Min. 100kΩ	
Control output	Contact type	Time limit DPDT (2c) or Instantaneous SPDT (1c)+ Time limit SPDT (1c) selectable by output operation mode	Time limit DPDT (2c)	Instantaneous SPDT (1c)+ Time limit SPDT (1c)
	Contact capacity	250VAC～ 5A, 30VDC⎓ 5A resistive load	250VAC～ 5A, 24VDC⎓ 5A resistive load	250VAC～ 5A, 30VDC⎓ 5A resistive load
Relay life cycle	Mechanical	Min. 10,000,000 operations		
	Electrical	Min. 100,000 operations (250VAC 5A resistive load)		
Repeat error		Max. ±0.2% ±10ms		
SET error		Max. ±5% ±50ms		
Voltage error		Max. ±0.5%		
Temperature error		Max. ±2%		
Insulation resistance		Over 100MΩ (at 500VDC megger)		

※1: Refer to time specifications for control time setting range by model.

■ Specifications

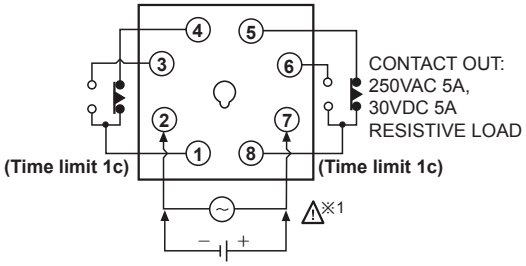
Model		AT8N-□	AT11DN-□	AT11EN-□
Dielectric strength		2,000VAC 50/60Hz for 1 minute		
Noise immunity	AT□□-1 AT□□-2	±500V the square wave noise (pulse width 1μs) by noise simulator		
	AT□□	±2kV the square wave noise (pulse width 1μs) by noise simulator		
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1min) in each X, Y, Z direction for 1hour		
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for 1min) in each X, Y, Z direction for 10min		
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		
Environ-ment	Ambient temperature	-10 to 55℃, storage: -25 to 65℃		
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH		
Approval		CE c UL us		
Accessory		Bracket		
Weight※2		Approx. 134.12g (approx. 86.71g)	Approx. 132.2g (approx. 85g)	Approx. 134.7g (approx. 87.5g)

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

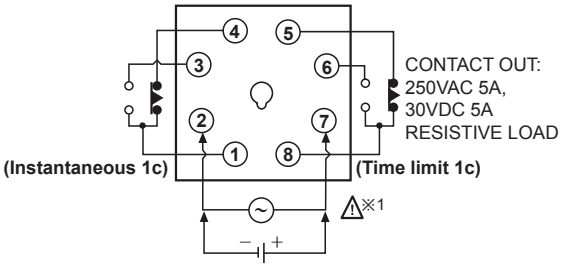
■ Connections

◎ AT8N

● When selecting [A], [F] output operation mode

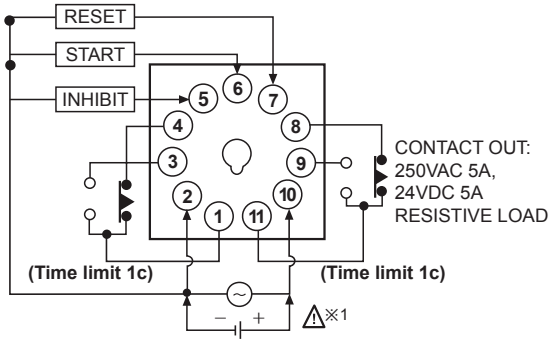


● When selecting [A1], [B], [F1], [I] output operation mode

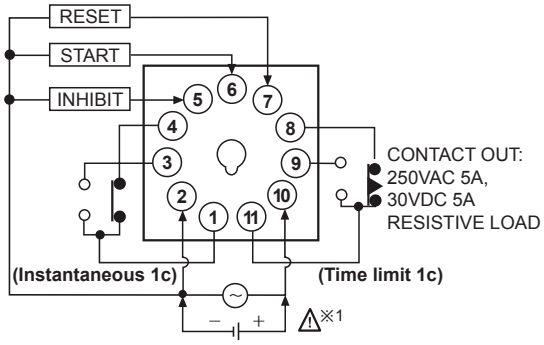


※1: AC/DC voltage: 100-240VAC 50/60Hz, 24-240VDC
: 24VAC 50/60Hz, 24VDC
DC voltage:12VDC

◎ AT11DN



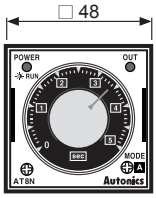
◎ AT11EN

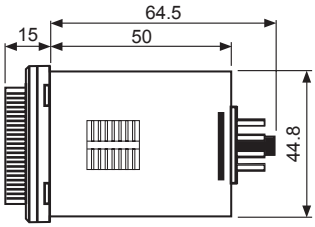


※1: AC/DC voltage: 100-240VAC 50/60Hz, 24-240VDC
: 24VAC 50/60Hz, 24VDC
DC voltage:12VDC

■ Dimensions

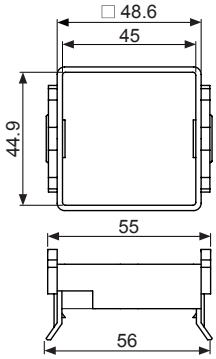
(unit: mm)

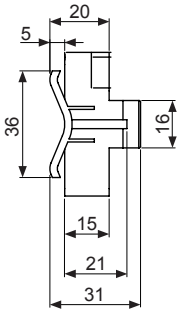




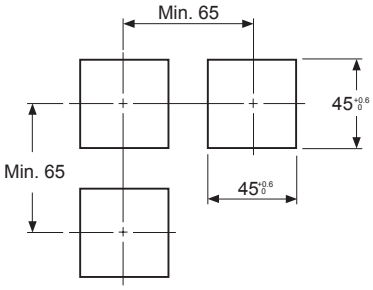
※8-pin socket (PG-08, PS-08(N), PS-08) and 11-pin socket (PG-11, PS-11(N)) are sold separately.
Refer to the '(G)Connectors/Connector Cables/Sensor Distribution Boxes/Sockets'.

● **Bracket**

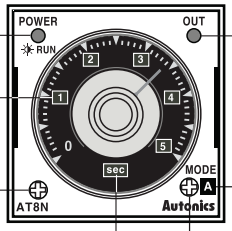




● **Panel cut-out**



■ Unit Description



Operation/Power indicator
(Flashes for timer operation,
Turns ON for timer stop)

Time range indication

Time range setting switch

Time unit indication
(SEC, MIN, HOUR, 10H mode**)**

Time limit output indicatior

Output operation mode display part
AT8N
(**A, A1, B, F, F1, I** mode)
AT11DN/AT11EN
(**A, F, F1, C, D, I** mode)

Output operation mode setting switch

■ Time Specifications

Time range	Time unit	Time setting range	Time range	Time unit	Time setting range
0.5	**SEC**	0.05 to 0.5sec	0.5	**HOUR**	0.05 to 0.5hour
1		0.1 to 1sec	1		0.1 to 1hour
5		0.5 to 5sec	5		0.5 to 5hour
10		1 to 10sec	10		1 to 10hour
0.5	**MIN**	0.05 to 0.5min	0.5	**10H**	0.5 to 5hour
1		0.1 to 1min	1		1 to 10hour
5		0.5 to 5min	5		5 to 50hour
10		1 to 10min	10		10 to 100hour

■ Output Operation Mode

● **AT8N**

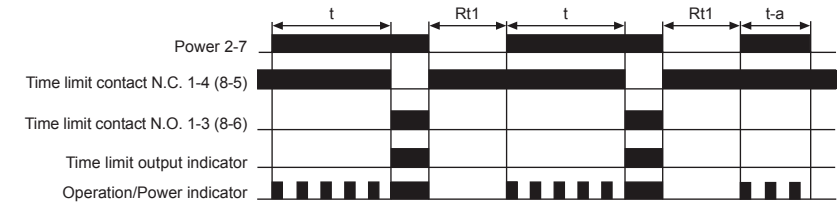
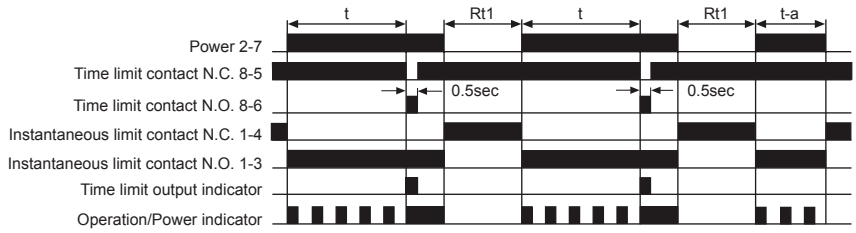
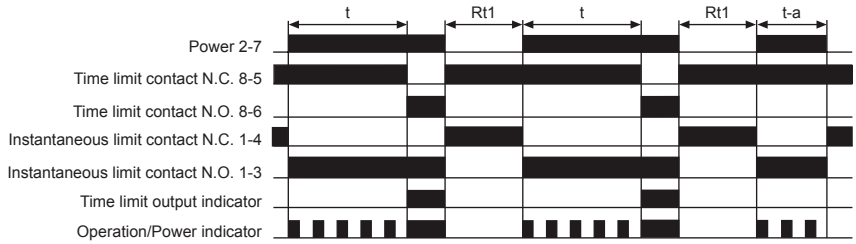
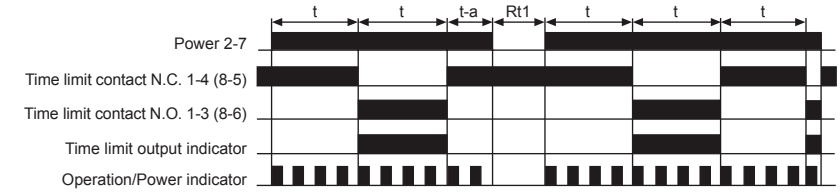
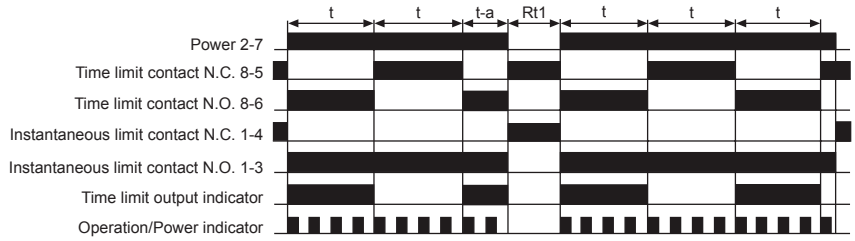
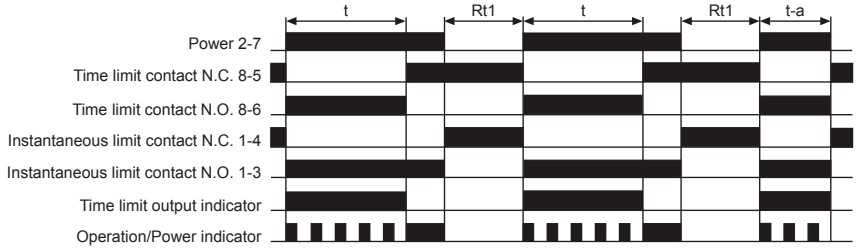
Display	Output operation mode
A	Power ON Delay
A1	Power ON Delay1 (One-Shot output)
B	Power ON Delay2
F	Flicker (OFF Start)
F1	Flicker1 (ON Start)
I	Interval

● **AT11DN/AT11EN**

Display	Output operation mode
A	Signal ON Delay
F	Flicker (OFF Start)
F1	Flicker1 (ON Start)
C	Signal OFF Delay
D	Signal ON/OFF Delay
I	Interval

■ Output Operation Mode (AT8N)

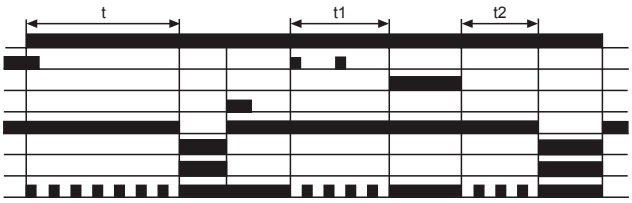
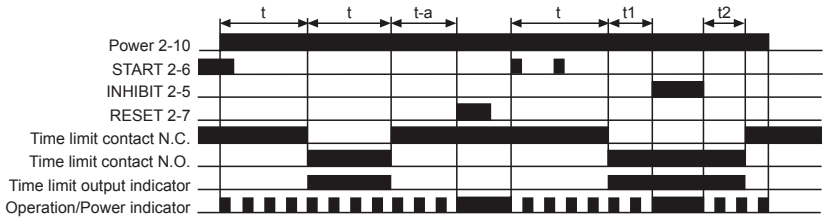
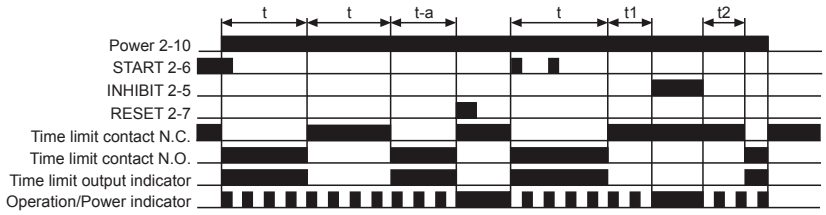
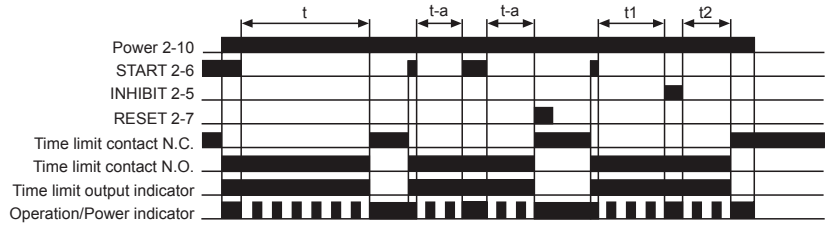
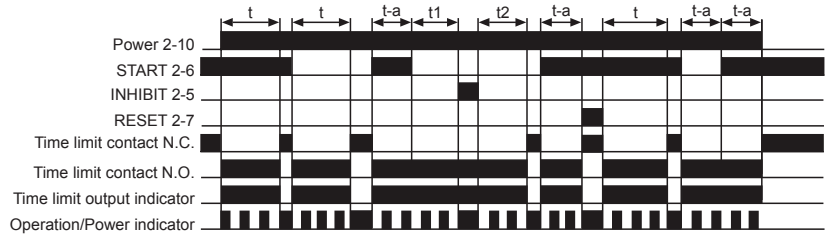
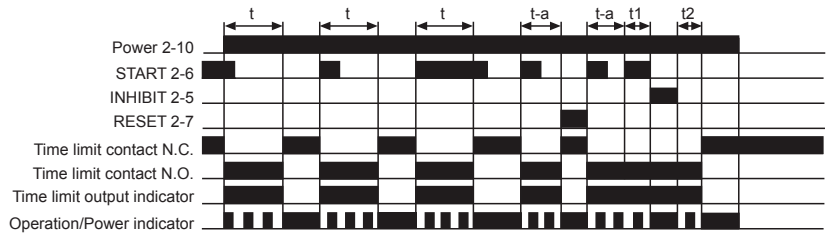
[t: Setting time, t > t-a, Rt: Return time, Rt1>Rt]

Mode	Time chart
A **Power ON Delay**	
A1 **Power ON Delay1** **(One-Shot output)**	 ※One- Shot output is 0.5sec fixed.
B **Power ON Delay2**	
F **Flicker** **(OFF Start)**	
F1 **Flicker1** **(ON Start)**	
I **Interval**	

※In case of F, F1 output operation mode, setting time should be over 100ms.
If not, it may cause abnornal output operation due to under 100ms of setting time.

■ Output Operation Mode (AT11DN/AT11EN)

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

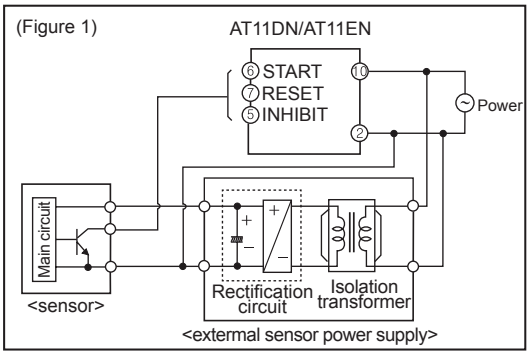
Mode	Time chart
A **Signal ON Delay**	
F **Flicker (OFF Start)**	
F1 **Flicker1 (ON Start)**	
C **Signal OFF Delay**	
D **Signal ON/OFF Delay**	
I **Interval**	

※If power is cut or the RESET terminal is short-circuited, the titmer 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.

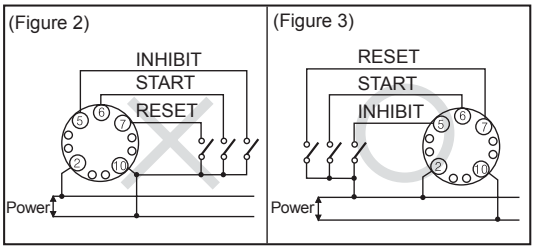
■ Proper Usage

◎ Input connection (AT11DN/AT11EN)

- Power circuit of AT11DN/EN 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 deivces.



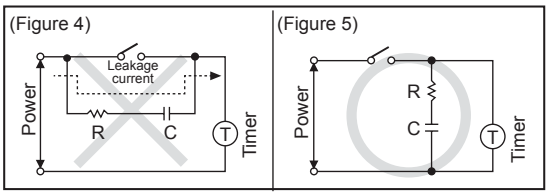
- As (Figure 2), if using terminal ⑩ as common terminal of input signal, it may cause damage to inner circuit of AT11DN/EN timer. Use terminal ② as common terminal referring to (Figure 3).



- In order to apply input signals (INHIBIT, START, RESET), short-circuit the terminal no. ②-⑤, ②-⑥ or ②-⑦. It may cause internal circuit damage by wrong connections.
- Do not wire INHIBIT, START, RESET signal input line with power line, high voltage line in parallel.

◎ Common

- Please connect DC power input after checking polarity of power.
- 12VDC, 24VDC, 24VAC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- When applying the power to the timer, please apply the rated power at the moment by switch, relay, etc. Otherwise it might cause malfunction.
- 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.



- 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.
- 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
  - Indoors
  - Altitude max. 2,000m
  - Pollution degree 2
  - Installation category II