ATN Series

DIN size W48×H48mm, Solid State, Multi-function Timer

■Features

- ●New model interchangeable with AT series
- ●Various output operation by adding the modes
  (6kinds of operation modes and 26kinds of timing range)
- ●Power supply : 100−240VAC 50/60Hz / 24−240VDC
  12VDC(Option)
- ●16 programmable timing range(0.05sec ~ 100hour)
- ●Easy programming from front panel
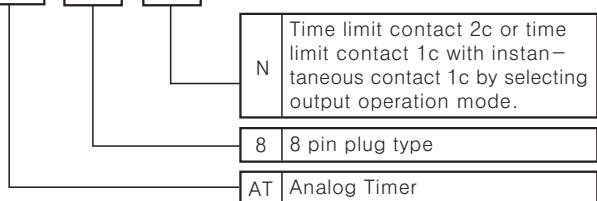- ●LED indicators for timing and output status

⚠ **Please read "Caution for your safety" in operation manual before using.**
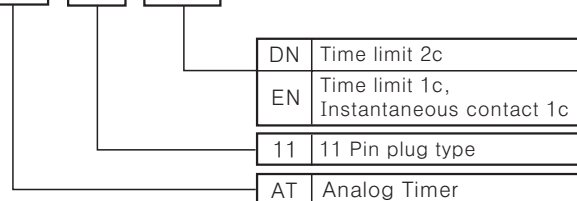
■Ordering information

| AT | 8 | N |

N	Time limit contact 2c or time limit contact 1c with instan−taneous contact 1c by selecting output operation mode.
8	8 pin plug type
AT	Analog Timer

※Socket required : PG−08, PS−08

| AT | 11 | DN |

DN	Time limit 2c
EN	Time limit 1c, Instantaneous contact 1c
11	11 Pin plug type
AT	Analog Timer

※Socket required : PG−11, PS−11

■Specifications

Model		AT8N	AT11DN	AT11EN
Function		**MULTI TIMER**		
Control time setting range		0.05sec~100hour(Max. time)		
Power supply		100−240VAC 50/60Hz / 24−240VDC, 12VDC(Option)		
Allowable voltage range		90 ~ 110% of rated voltage□		
Power consumption		Approx. 4.5VA(240VDC 60Hz) Approx. 1.5W (240VDC) Approx. 0.6W (12VDC)	Approx. 4.5VA(240VDC 60Hz) Approx. 1.3W (240VDC) Approx. 0.9W (12VDC)	Approx. 4.5VA(240VDC 60Hz) Approx. 1.5W (240VDC) Approx. 0.6W (12VDC)
Return time□		Max. 100ms		
Min.input signal width	START input	———	Min. 50ms	
	RESET input			
	INHIBIT input			
Input	START input	———	[No−voltage input] Short−circuit impedance : Max. 1kΩ Residual voltage : Max. 0.5V Open−circuit impedance : Min. 100kΩ	
	RESET input			
	INHIBIT input			
Control output□	Contact type	Time limit contact DPDT(2c), Time limit contact DPDT(1c)+ Instaneous contact DPDT(1c) by selecting output operation mode	Time limit DPDT(2c)	Time limit SPDT(1c), Instantaneous contact SPDT(1c)
	Contact capacity	NO : 250VAC 3A resistive load NC : 250VAC 2A resistive load	250VAC 3A resistive load	NO : 250VAC 3A resistive load NC : 250VAC 2A resistive load
Relay life cycle	Mechanical	Min. 10,000,000 operations		
	Electrical	Min. 100,000 operations(Rated contact capacity)		
Repeat error		Max. ±0.3%		
Setting error		Max. ±5% ±0.05sec		
Voltage error		Max. ±0.5%		
Temperature error		Max. ±2%		
Insulation resistance		Min. 100MΩ (at 500VDC)		
Dielectric stength		2000VAC 50/60Hz for 1 minute		
Noise strength		±2kV the square wave noise(pulse width:1μs) by the noise simulator		
Vibration	Mechanical	0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1 hour		
	Malfunction	0.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 10 minutes		
Shock	Mechanical	300m/s² (Approx. 30G) in X, Y, Z directions 3 times		
	Malfunction	100m/s² (Approx. 10G) in X, Y, Z directions 3 times		
Ambient temperature		−10 ~ +55℃ (at non−freezing status)		
Storage temperature		−25 ~ +65℃ (at non−freezing status)		
Ambient humidity		35 ~ 85%RH		
Weight		Approx. 100g		

Autonics

Multi Functional Timer

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/ Speed/ Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor

(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

(M) 5-Phase stepping motor & Driver & Controller

▣ Connections

◎ AT8N

● [A], [F] mode
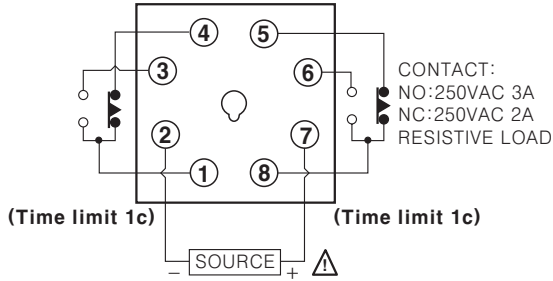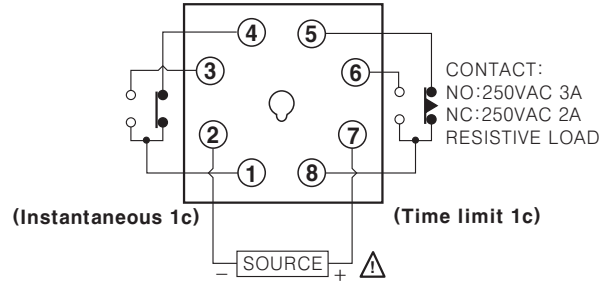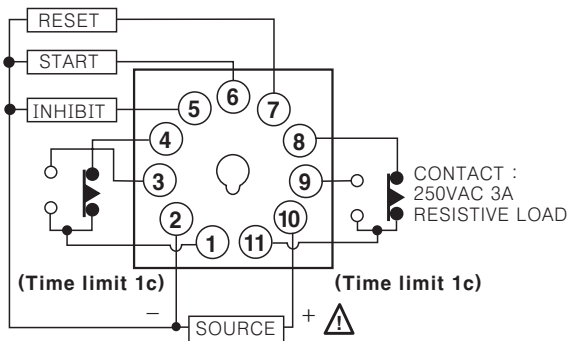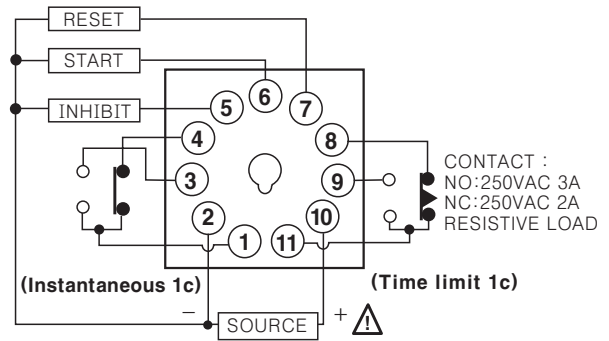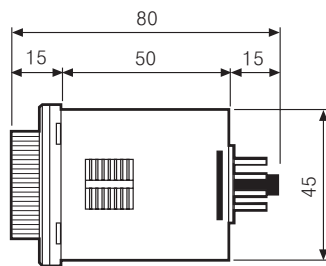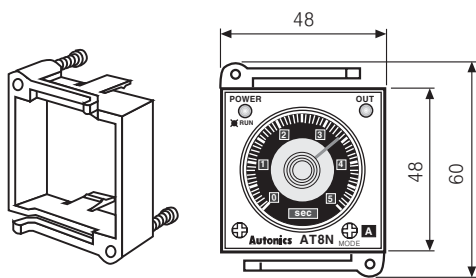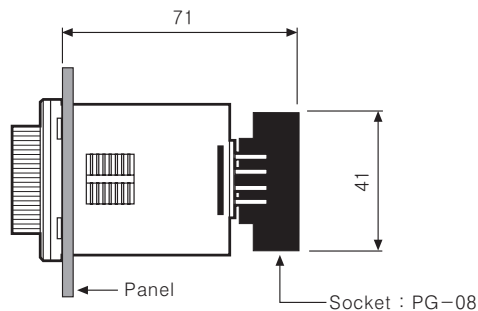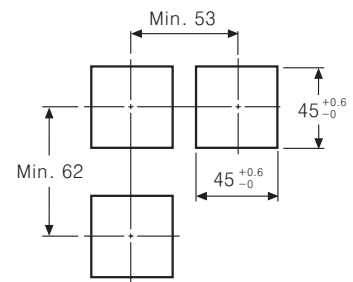
CONTACT:
NO:250VAC 3A
NC:250VAC 2A
RESISTIVE LOAD

(Time limit 1c)   (Time limit 1c)

— SOURCE + ⚠

● [A1], [B], [F1], [I] mode

CONTACT:
NO:250VAC 3A
NC:250VAC 2A
RESISTIVE LOAD

(Instantaneous 1c)   (Time limit 1c)

— SOURCE + ⚠

◎ AT11DN

RESET
START
INHIBIT

CONTACT :
250VAC 3A
RESISTIVE LOAD

(Time limit 1c)   (Time limit 1c)

— SOURCE + ⚠

◎ AT11EN

RESET
START
INHIBIT

CONTACT :
NO:250VAC 3A
NC:250VAC 2A
RESISTIVE LOAD

(Instantaneous 1c)   (Time limit 1c)

— SOURCE + ⚠

▣ Dimensions

● Bracket

48
48
60

POWER   OUT
RUN
sec
Autonics AT8N MODE A

80
15   50   15
45

● Panel cut-out

Min. 53
Min. 62
$45^{+0.6}_{-0}$
$45^{+0.6}_{-0}$

71
41

Panel

Socket : PG-08

Unit:mm

ATN Series

▣ Front panel identification

Operation/Power LED
(Timer operation：Flashing
Timer stop：LED ON)

Time range display

Time range selector
(Changing the time unit
per 4 revolutions)

Time unit
(sec, min, hour, 10h)

Output LED
[Time limit output operation(ON)：Light on]

Operation mode display
┌ **AT8**
(**A, A1, B, F, F1,** I mode)
└ **AT11DN/AT11EN**
(**A, F, F1, C, D,** I mode)

Operation mode selector

POWER ☀RUN OUT **Autonics** AT8N MODE A
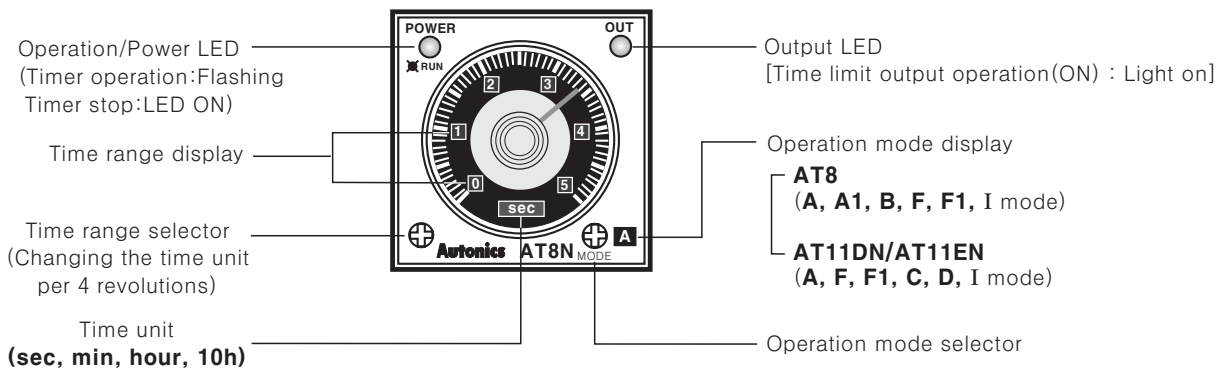
※Please rotate the time range switch and operation mode switch to CW(Clockwise) direction.

▣ Time specifications

Time range	Time unit	Time setting range
0.5	**sec**	0.05~0.5
1.0		0.1~1.0
5		0.5~5
10		1~10
0.5	**min**	0.05~0.5
1.0		0.1~1.0
5		0.5~5
10		1~10
0.5	**hour**	0.05~0.5
1.0		0.1~1.0
5		0.5~5
10		1~10
0.5	**10h**	0.05~0.5
1.0		0.1~1.0
5		0.5~5
10		1~10

▣ Output operation mode of each model

●AT8N

Display	Output operation mode
A	POWER ON DELAY
A1	POWER ON DELAY 1
B	POWER ON DELAY 2
F	FLICKER (OFF START)
F1	FLICKER 1 (ON START)
I	INTERVAL

●AT11DN/AT11EN

Display	Output operation mode
A	SIGNAL ON DELAY
F	FLICKER (OFF START)
F1	FLICKER 1 (ON START)
C	SIGNAL OFF DELAY
D	SIGNAL ON/OFF DELAY
I	INTERVAL

Autonics

Multi Functional Timer

▣ Output operation mode(AT8N)

t:Setting time, t > t−a, Rt:Return time(Max. 100ms)

Mode	Time chart
A **POWER ON DELAY MODE**	Power 2−7 Time limit contact NC 1−4 (8−5) Instantaneous contact NO 1−3 (8−6) Time limit output operation LED Operation/power LED
A 1 **POWER ON DELAY 1 MODE (One-shot output)**	Power 2−7 Time limit contact NC 8−5 Time limit contact NO 8−6 Instantaneous contact NC 1−4 Instantaneous contact NO 1−3 Time limit output operation LED Operation/power LED 0.5sec 0.5초 ※One− shot output is 0.5sec fixed.
B **POWER ON DELAY 2 MODE**	Power 2−7 Time limit contact NC 8−5 Time limit contact NO 8−6 Instantaneous contact NC 1−4 Instantaneous contact NO 1−3 Time limit output operation LED Operation/power LED
F **FLICKER MODE (OFF Start)**	Power 2−7 Time limit contact NC 1−4 (8−5) Time limit contact NO 1−3 (8−6) Time limit output operation LED Operation/power LED
F 1 **FLICKER 1 MODE (ON Start)**	Power 2−7 Time limit contact NC 8−5 Time limit contact NO 8−6 Instantaneous contact NC 1−4 Instantaneous contact NO 1−3 Time limit output operation LED Operation/power LED
I **INTERVAL MODE**	Power 2−7 Time limit contact NC 8−5 Time limit contact NO 8−6 Instantaneous contact NC 1−4 Instantaneous contact NO 1−3 Time limit output operation LED Operation/power LED

※When using F, F1 output operation modes, if the time is set too short, the output may not work properly. Please set the time at least over 100ms.

(A) Counter
(B) Timer
(C) Temp. controller
(D) Power controller
(E) Panel meter
(F) Tacho/ Speed/ Pulse meter
(G) Display unit
(H) Sensor controller
(I) Proximity sensor
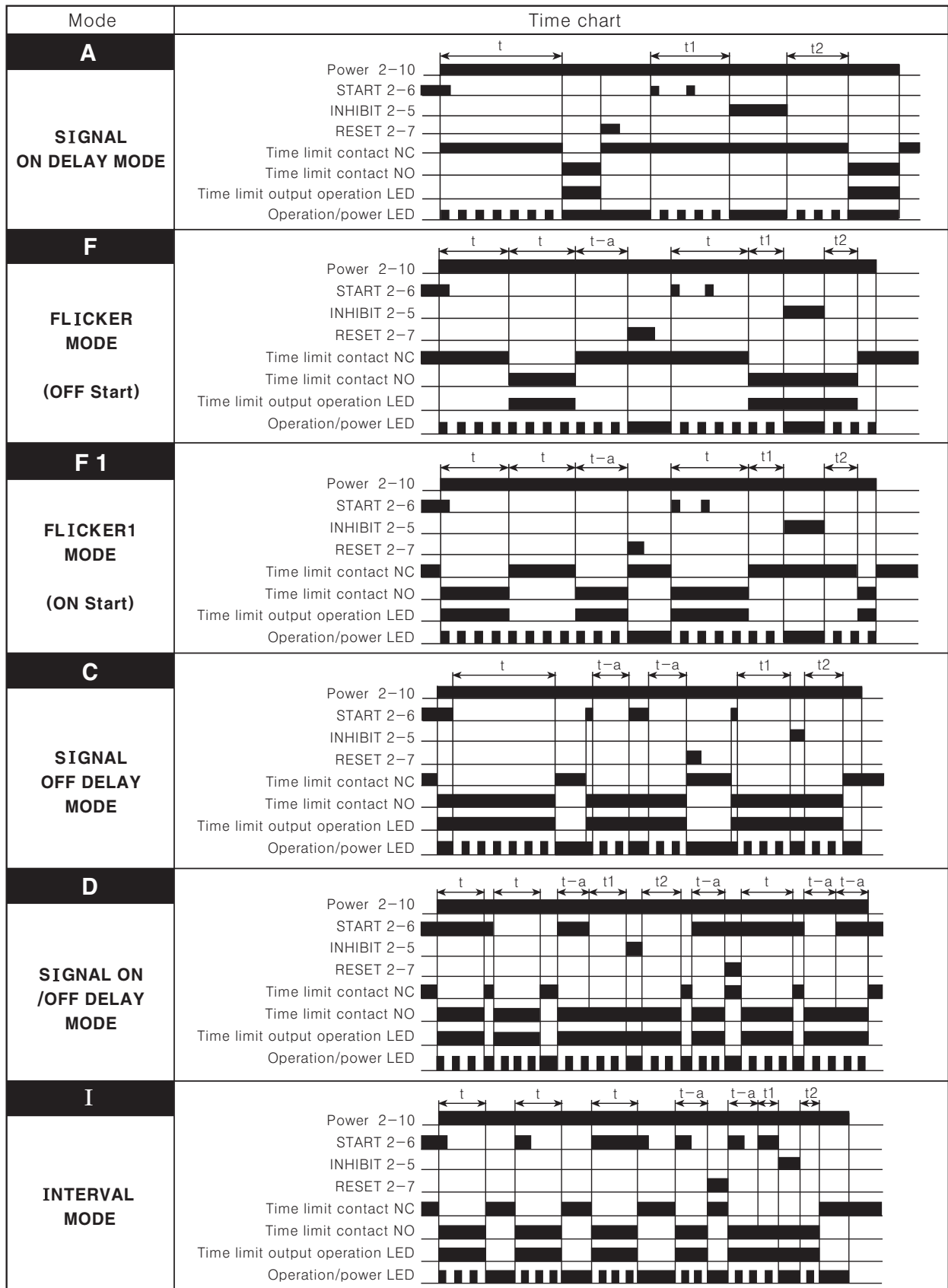(J) Photo electric sensor
(K) Pressure sensor
(L) Rotary encoder
(M) 5-Phase stepping motor & Driver & Controller

ATN Series

▣ Output operation mode(AT11DN/AT11EN)

t=t1+t2, t>t−a

Mode	Time chart
A **SIGNAL ON DELAY MODE**	
F **FLICKER MODE** **(OFF Start)**	
F 1 **FLICKER1 MODE** **(ON Start)**	
C **SIGNAL OFF DELAY MODE**	
D **SIGNAL ON /OFF DELAY MODE**	
I **INTERVAL MODE**	

Note)1. If power is removed or the RESET terminal is short−circuited, the timer will be reset.
    2. If the INHIBIT terminal is short−circuited during a timing cycle, the time will stop.
    3. When using F, F1 output operation modes, if the time is set too short, the output may not work properly.
       Please set the time at least over 100ms.

Autonics

▪Proper usage

◎Repeat function(Flicker)

- Able to use one AT Timer for 3 sub Relays and 2 Timers(Flicker function).
  Simple to use Flicker function with only one AT Timer.
- Switch A : Start, Switch B: Reset.

〈Previous〉

〈ATN Flicker mode〉
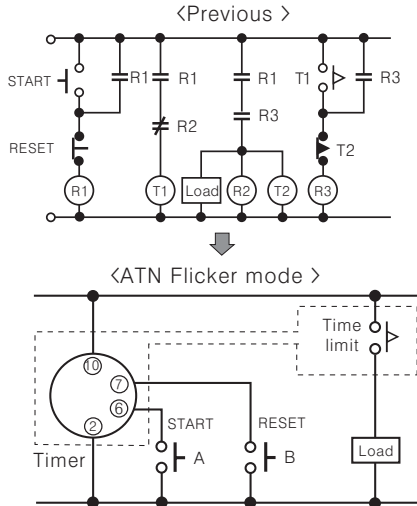
◎INTERVAL mode

Able to make Instantaneous ON and Time limit OFF (Holding device) with using INTERVAL mde.

〈Previous〉　　　〈INTERVAL mode〉
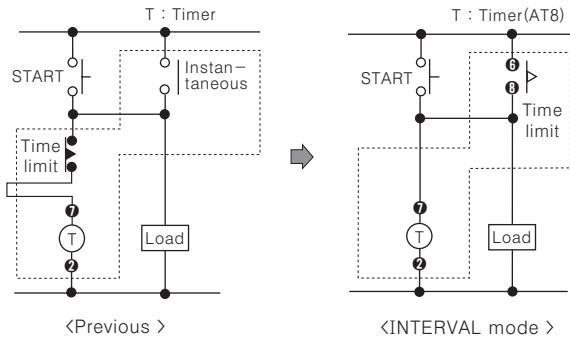
◎Input signal condition(AT11DN, AT11EN)

1. Relay contact input

   Please use gold-plated switches with good contact assurance and short bouncing time for contact input. (Open resistance:Over 100kΩ, Short-circuit resistance:Under1kΩ)
   ※Please use a contact that can function reliably at 5VDC 0.4mA.

2. NPN open collector transistor input

   Please use the characteristic of transistor as follow;
   Vceo : Min. 25V
   Ic : Min. 10mA
   Icbo : Max. 0.2μA.
   Residual voltage : Max. 0.5V
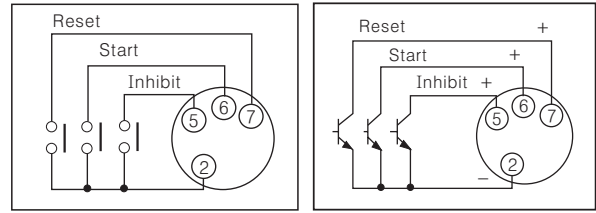
3. NPN universal input

   It is able to use voltage output type as input signal source instead of open collector output in Solid-state circuit(Proximity sensor, Photo-electric sensor) which has range of 10-30VDC output voltage.
   When H signal change to L, Timer will start.
   When transistor(Q) is ON status, please make residual voltage under 0.5V.
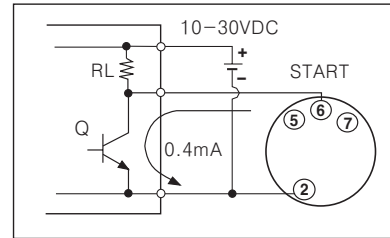
◎Terminal connection

1) Please wire per wiring instructions
2) Power connection

   Connect the power line without observing polarity for ATN series AC power type, but please be aware of power connection for DC power type.

Power supply	8Pin Type	11Pin Type
AC Type	Terminal ② − ⑦	Terminal ② − ⑩
DC Type	Terminal ② ← ⊖ Terminal ⑦ ← ⊕	Terminal ② ← ⊖ Terminal ⑩ ← ⊕

- When turning off the power, be aware of inductive voltage. (If using power line with another high voltage line or energy line near by, it may cause inductive voltage).
- Power ripple should be under 10% and power supply should be within range of allowable voltage for DC power type.
- Please supply the power quickly when using a switch or a relay contact. Otherwise it may cause time error or power reset failure.

3) The load of Control output should be under rated load capacity.
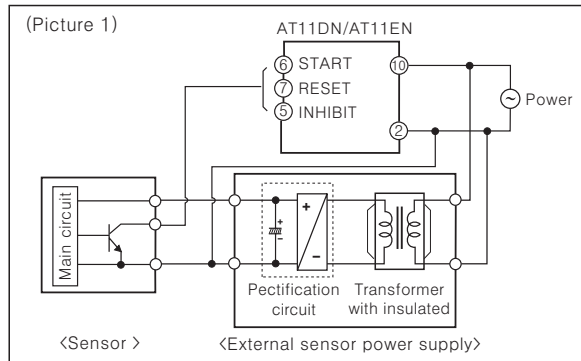
◎Setting time, Time range, Operation mode

Do not change time range or operation mode while time operat ing. When changing setting, please power off or apply Reset signal.
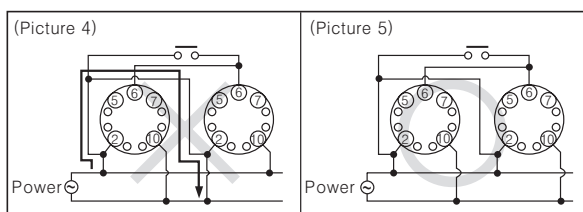
◎Input connection

1) AT11DN/AT11EN Timer is transformer-less type, therefore please check following for connecting relay contact for input signal and transistor.

(Picture 1)

2) The terminal ⑩ should be common.

(Picture 2) (Picture 3)
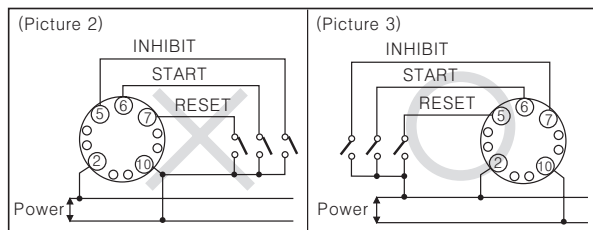
3) When using more than one timer with one contact or transistor input. Please connect the power phase correctly.

(Picture 4) (Picture 5)

4) Inhibit, Start, Reset signal applied by short-circuiting input terminal ②-⑤, ②-⑥ or ②-⑦. It may cause internal circuit damaged by wrong connection.

5) If using power line with another high voltage line or energy line at the same conduit, it may cause inductive voltage. Therefore please use seperated conduit for power line.

6) When input(Start, Reset, Inhibit) wire is long, plese use shielded wire and it should be short.

◎Common

1) If operating the unit in high temperature, it may cause internal componets damage.

2) Please use it like (Fig. 7) in order not to flow leakage current into Timer.

(Fig. 6) (Fig. 7)
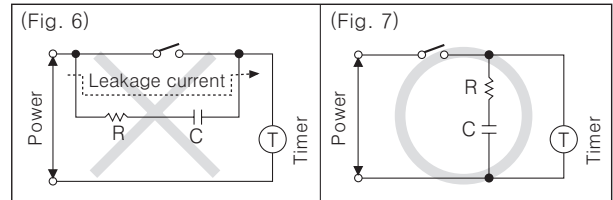
3) Environment

Please avoid the following places:

● Where this product may be damaged by strong impact or vibration.

● Where corrosive gas or flammable gas and water, oil, dust exist.

● Where magnetic and electrical noise occurs.

● Where there are high temperature and humidity beyond rated specification.

● Where there are strong alkalis and acids.

● Where there are direct rays of sun.