

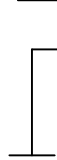
SLIM TIMER (GTN Series)

(Design registration No. 0344911)

HISTORY

SLIM(22.5mm) TIMER FOR MARINE & INDUSTRIAL ELECTRIC CONTROL PANEL

GTN - **M3**



Contact output type

(1c,1c)	1c instant 1c delay
(2c)	2c delay
(1a,2c)	1a instant 2c delay

** WR : Wide range (0~99) type

** F R : Fixed range (0~30) type

HIGH - CON

H1 --- On delay (AC 480V) timer (1c,1c)

H2 --- On delay (AC 480V) timer (2c)

H3 --- Interval (AC 480V) timer (1c,1c)

H4 --- Interval (AC 480V) timer (2c)

WR

SPECIAL

FL --- Flicker timer

IC --- Inching(寸動) timer : (option)

WH --- Winding heater timer

YD --- Y-D starting timer

FR

F1 --- Sig. off delay timer (2c)

F2 --- Sig. on-off delay timer (2c)

WR

MULTI

M3 --- Multi-output / on delay timer (1a,2c)

M4 --- Multi-output / interval timer (1a,2c)

WR

S1 --- Multi-source / on delay timer (1c,1c)

S2 --- Multi-source / on delay timer (2c)

S3 --- Multi-source / interval timer (1c,1c)

S4 --- Multi-source / interval timer (2c)

GENERAL

SF1 --- Sig. off delay timer (2c)

SF2 --- Sig. on-off delay timer (2c)

FR

E1 --- On delay timer (1c,1c)

E2 --- On delay timer (2c)

E3 --- Interval timer (1c,1c)

E4 --- Interval timer (2c)



LUXCO CO., LTD.

980-17, Jangrim-dong, Saha-gu, Busan, 604-040, Korea

TEL : +82-51-262-8588

FAX : +82-51-262-8538

<http://www.luxco.co.kr>

CLASS

APPROVED BY

CHECKED BY

DESIGNED BY

Y. J. KANG

DATE

AUG. 10, 2006

DRAW No.

SB 0608-E3

SLIM (22.5mm) TIMER (GTN Series)

NEW TYPE

1. GENERAL INFORMATION

1.1 GENERAL

GTN.. new type series are slim(22.5mm) type timers which have built in MICOM and flame retardant case. And can be applied to marine equipments and industrial plants for the purpose of accurate time control. Time setting is done by digital switch, so it is more convenient to set and more accurate to control time than VR adjusting timer. And also it operates accurately in shocks and temperature variation.

Besides, AC 380~480V can be supplied as source rating for the timer GTN-H1~H4 and GTN-WH, GTN-YD, it will make possible to simple and reduce the width of an individual or a group start panel.

And also the control voltages are AC/DC 24V, DC 120V, AC 100~240V, AC 380~480V 50/60Hz.

** Especially, GTN-S1/ S2/ S3/ S4 types are prepared for economical multi-source design, the input source is AC/DC 24V or AC 100~240V 50/60Hz.

And GTN-M3/ M4 types are prepared for economical multi-output contact design, these types consist of a "1a" instant "2c" fixed contact output and 0.1Sec~990Hrs wide digital range for the any specification.

1.2 ORDERING INFORMATION

The option voltages (DC 12, DC 48V, DC 240V) need 3 weeks after given an order.

ex) GTN - M3 (AC 100~240V)

GTN - S1 (AC/DC 24V/AC 100~240V)

Make a note rating voltage separately.

GTN - M3

** WR : Wide range (0~99)

** F R : Fixed range (0~30)

Contact output type	
(1c,1c)	1c instant 1c delay
(2c)	2c delay
(1a,2c)	1a instant 2c delay

CLASSIFI-CATION	FUNCTION	MODEL	OUTPUT CONTACT	TIME RANGE	RATING VOLTAGE	TB	
HIGH-CON	* On delay	GTN - H1	(1c,1c)	0.1Sec.~99Min.	WR	8P	
	* On delay	GTN - H2	(2c)				
	* Interval	GTN - H3	(1c,1c)				
	* Interval	GTN - H4	(2c)				
SPECIAL	* Flicker	GTN - FL	(2c)	0.2Sec.~99Hrs.	WR	* AC 380~480V * DC 120V (OPTION) * DC 240V	
	* Inching(寸動)	GTN - IC	SSR	0.01Sec.~0.99Sec.			
	* Winding heater	GTN - WH	(1a,1a)	30Sec.~58Sec.	FR	* AC/DC 24V * AC 100~240V * DC 120V	
	* Y-D starting	GTN - YD	(1a,1a)	2Sec.~30Sec.			
	* Sig. off delay	GTN - F1	(2c)	0.1Sec.~990Hrs.			
* Sig. on-off delay	GTN - F2	(2c)					
MULTI	OUTPUT	* On delay	GTN - M3	(1a,2c)	WR	* AC/DC 24V * AC 100~240V * DC 120V	
		* Interval	GTN - M4	(1a,2c)			
	SOURCE	* On delay	GTN - S1	(1c,1c)	0.1Sec.~30Hrs.	FR	10P
		* On delay	GTN - S2	(2c)			
		* Interval	GTN - S3	(1c,1c)			
* Interval	GTN - S4	(2c)					
GENERAL	* Sig. off delay	GTN - SF1	(2c)	0.1Sec.~30Hrs.	FR	* AC/DC 24V * AC 100~240V * DC 120V	
	* Sig. on-off delay	GTN - SF2	(2c)				
	* On delay	GTN - E1	(1c,1c)				
	* On delay	GTN - E2	(2c)				
	* Interval	GTN - E3	(1c,1c)				
	* Interval	GTN - E4	(2c)				

2. SPECIFICATIONS OF CONSTRUCTION & ENVIRONMENT

2.1. CASE

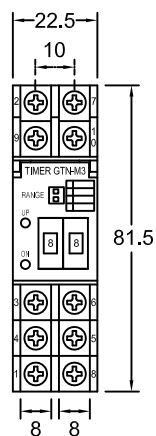
- 1) Material : PC(polycarbonate) - Flame retardant (UL94 V-O)
 - TRIREX3025G10 / Glass fiber reinforced
 - Dielectric strength : 31KV/mm (ASTM D149 / IEC 243)
- : ABS - Flame retardant (UL94 V-O)
 - STAREX (ABS VH-0800)
 - Dielectric strength : 16KV/mm (ASTM D149 / IEC 243)
- 2) Color : * Frame - Ivory, yellow ivory, blue, scarlet, gray (according to maker standard)
 - * Body - Black, yellow ivory (according to maker standard)

2.2. EXTERNAL CONNECTION T.B

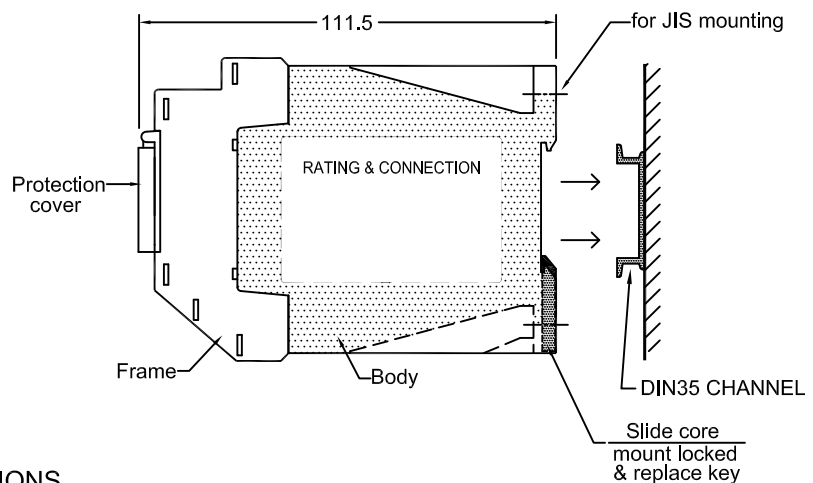
- 1) Material
 - Terminal : Brass (Zn plating)
 - Screw : Steel (Ni plating)
- 2) Screw size : M3.5
- 3) Spacing : 10mm

2.3. OUTSIDE FIGURE & MOUNTING (see detail : sheet No. A5) : Unit in mm

FRONT VIEW



SIDE VIEW



2.4. AMBIENT CONDITIONS

- 1) Ambient temperature range : -20°C ~ +55°C
- 2) Storage temperature range : -25°C ~ +65°C
- 3) Humidity : 35 ~ 85% R.H

2.5. VIBRATION TEST : X, Y, Z (duration : 90min) 30 Hz, acceleration ; ±0.7G

SLIM (22.5mm) TIMER (GTN Series)

NEW TYPE

3. SPECIFICATIONS OF ELECTRICAL RATING

3.1 VOLTAGE RATING : (AC voltages are 50/60Hz)

MODEL	VOLTAGE	MODEL	VOLTAGE
GTN-H1/ H2/ H3/ H4	* AC 380~480V * DC 120V * DC 240V	GTN-WH/ YD	* AC 100~240V * AC 380~480V
GTN-F1/ F2	* AC/DC 24V * AC 100~240V * DC 120V	GTN-SF1/ SF2	* AC/DC 24V * AC 100~240V
GTN-FL/ IC		GTN-E1/ E2/ E3/ E4	* DC 120V
GTN-M3/ M4		GTN-S1/ S2/ S3/ S4	* AC/DC 24V or AC 100~240V

3.2 VOLTAGE VARIATION : 80~120% of rating : AC/DC 24V, DC 120V
85~110% of rating : AC 100~240V, AC 380~480V, DC 240V

3.3 POWER CONSUMPTION(max) :

(1c,1c / 1a,2c output)

AC/DC 24V -- 2VA/1.5W	DC 120V -- 2.5W
AC 100~240V -- 10VA	DC 240V -- 4.5W
AC 380~480V -- 10VA	

(2c output)

AC/DC 24V -- 1.5VA/1W	DC 120V -- 1.5W
AC 100~240V -- 7VA	DC 240V -- 2.5W
AC 380~480V -- 10VA	

3.4 OUTPUT CONTACT RATING

CONTROL VOLTAGE : AC/DC 24V / AC 100~240V / DC 120V Model

VOLTAGE	p.f = 1	p.f = 0.4
30VDC	5A	2A
250VAC	5A	2A
125VDC	0.6A	
** SSR output : 150VDC 0.5A, 250VAC 2A (p.f=1)		

CONTROL VOLTAGE : AC 380~480V / DC 240V Model

Switching power 2000VA	VOLTAGE	p.f = 1	p.f = 0.4
	** 530VAC	3A	1.2A
** : Presumption calculation	440VAC	4.5A	1.8A
	250VAC	8A	3.2A
	** 250VDC	0.6A	

(Dielectric strength : between open contacts --1,000VAC 1min.)

3.5 TIMING SPECIFICATIONS

- 1) Setting accuracy : Above 1Sec. : $\pm 1\%$ / Under 1Sec. : $\pm 5\sim 10\%$
- 2) Time adjusting : Value can be set by digital push or selector switch.
- 3) Effect of temperature : $\pm 0.5\%$ (-20°C to 80°C) of setting
- 4) Time changing during counting : Output will be outputted by changing value.

3.6 Mechanical / Electrical life expectancy : 10,000,000 / 100,000 (30 operations/min)

3.7 DIELECTRIC STRENGTH : 2.5KV for 1 minute between live parts and enclosure

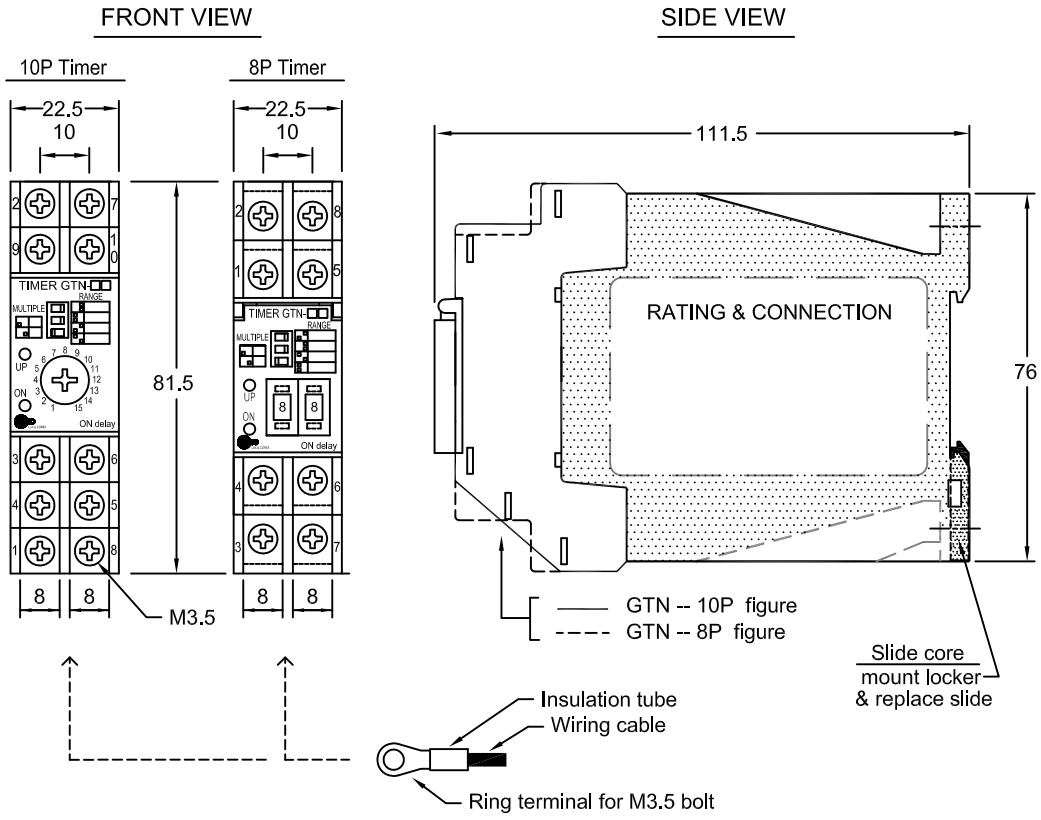
△ CAUTION

Do not give a high voltage test between a terminal and any other terminals.
It can cause very serious damage to inside electronic circuit.

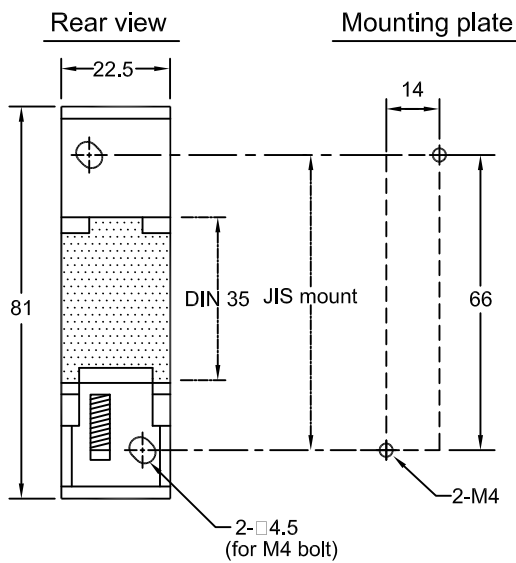
SLIM (22.5mm) TIMER (GTN Series) **NEW TYPE**

4. DIMENSIONS, MOUNTING AND REPLACEMENT (Unit in m/m)

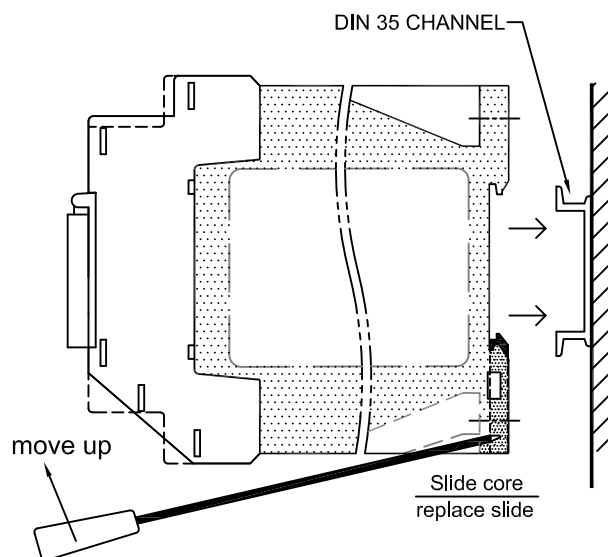
- In case that replace the timer, use tool "-" figure driver.
Put in the slide hole and move up.



JIS MOUNTING



DIN35 MOUNTING & REPLACEMENT



SLIM (22.5mm) TIMER (GTN Series)

GTN-H1/H2

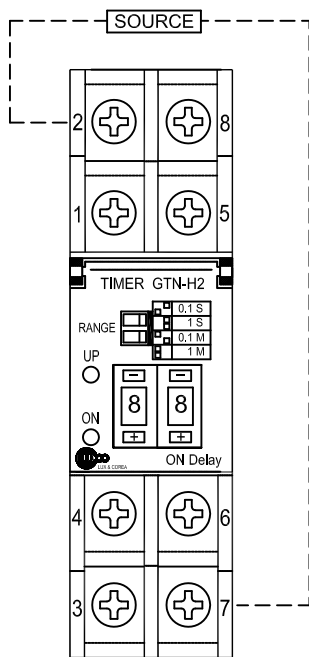
5. HIGH-CON TIMER : POWER ON DELAY

5.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-H1 (1c,1c) GTN-H2 (2c)	SOURCE	* AC 380~480V 50/60Hz * DC 120V * DC 240V
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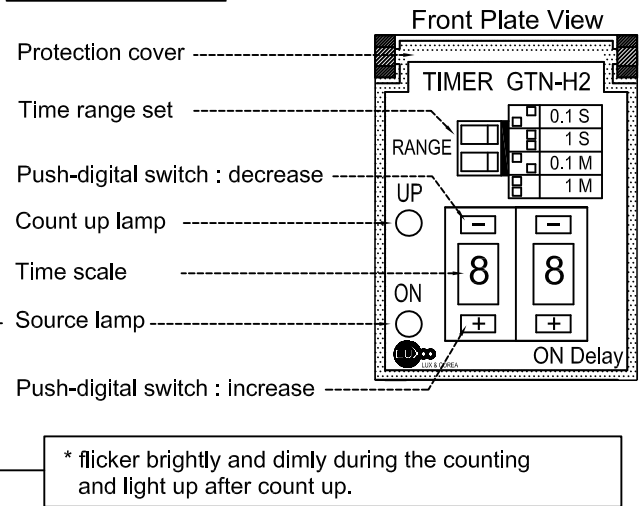
- 4 mode time ranges are selectable by 2 dip switch on the front side.
And set the time by 2 push digital switch. Contact output type and the time ranges are as follows.
(0.1~99Sec., 0.1~99Min.,)

In/out Connection & T.B layout

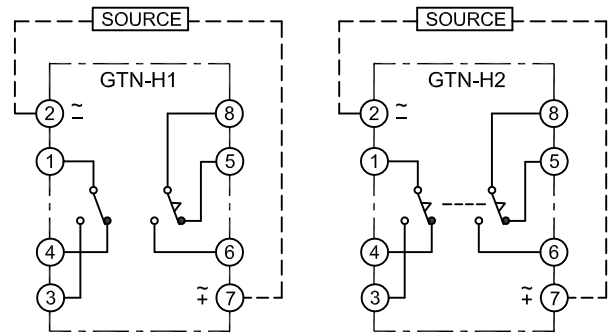


** The contact output comes from inside, and capacitor is as follows.
8A 30VDC / 8A 250VAC / 3A 530VAC (p.f =1)
0.6A 250VDC

Time setting value : Range x Scale

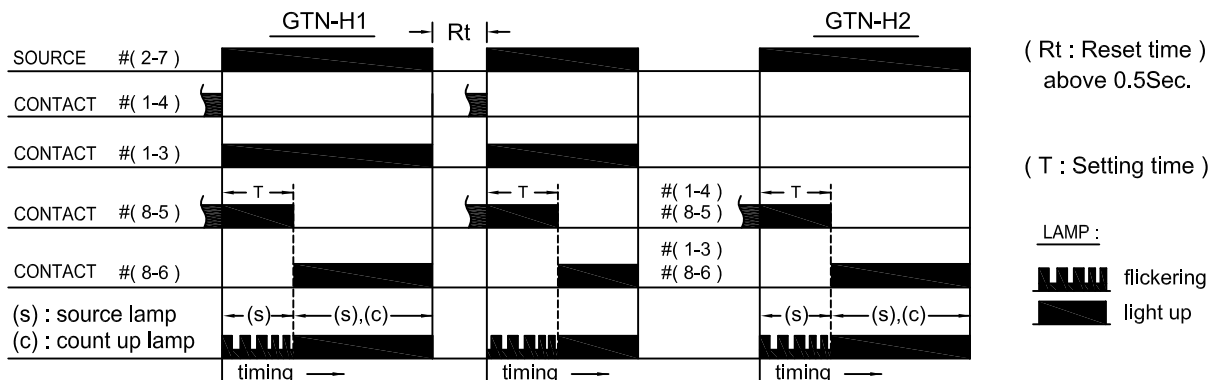


In/out block diagram



TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.
* Add power 'ON' operating delay time(abt. 50mS) to actual output time.



SLIM (22.5mm) TIMER (GTN Series)

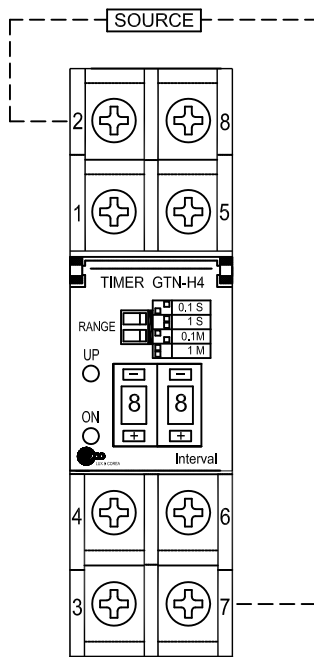
GTN-H3/H4

5.2 HIGH-CON TIMER : (8P) POWER ON INTERVAL

MODEL	GTN-H3 (1c, 1c) GTN-H4 (2c)	SOURCE	* AC 380~480V 50/60Hz * DC 120V * DC 240V
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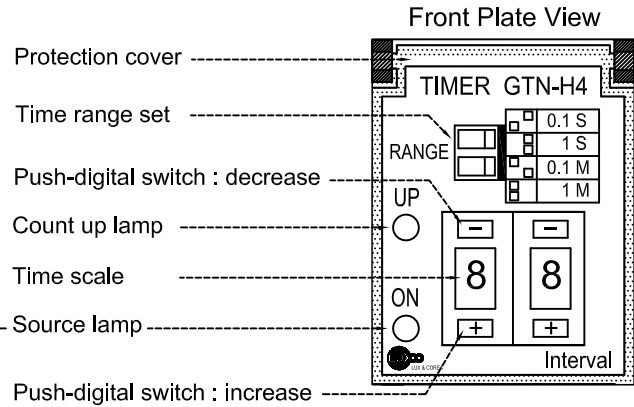
- 4 mode time ranges are selectable by 2 dip switch on front side.
And set the time by 2 push digital switch. Contact output type and the time ranges are as follows.
(0.1~99Sec., 0.1~99Min.,)

In/out Connection & T.B layout



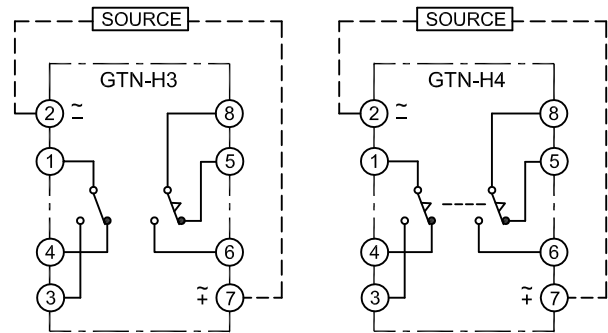
** The contact output comes from inside, and capacitor is as follows.
8A 30VDC / 8A 250VAC / 3A 530VAC (p.f =1)
0.6A 250VDC

Time setting value : Range x Scale



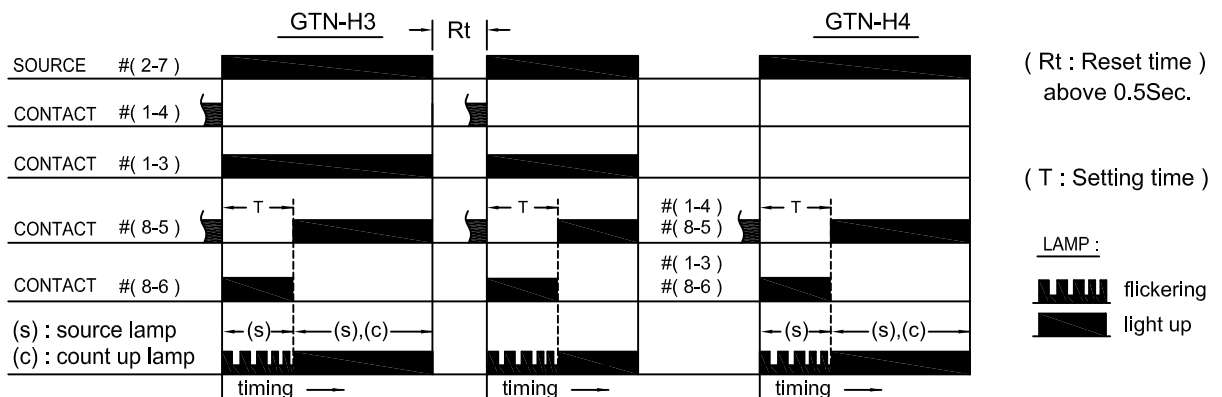
* flicker brightly and dimly during the counting and light up after count up.

In/out block diagram



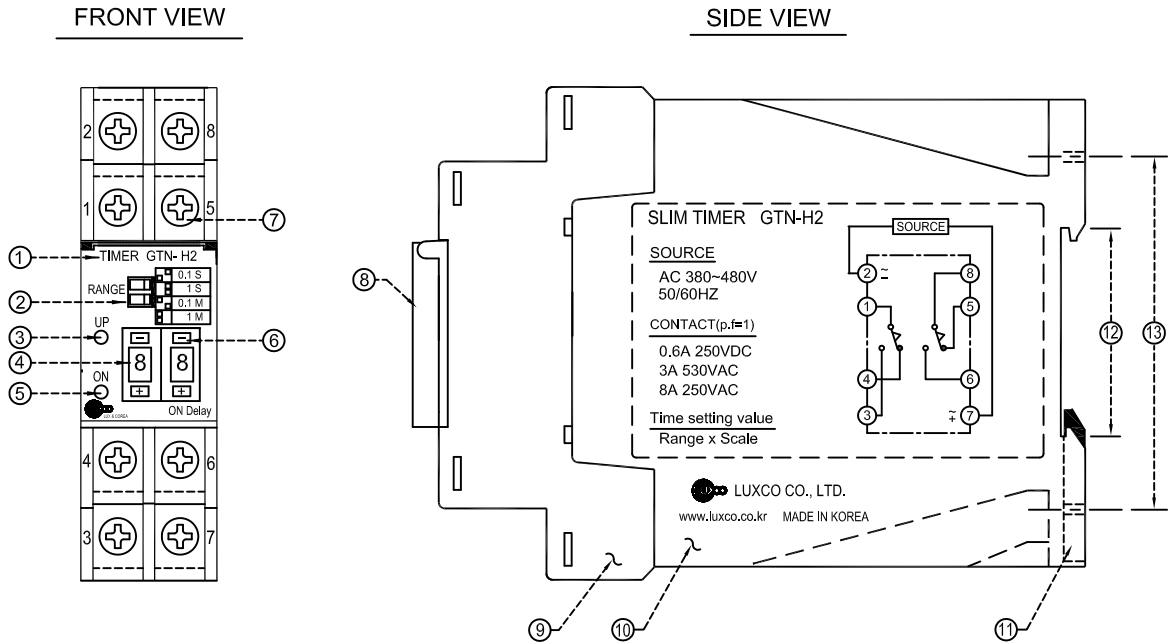
TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.
* Add power 'ON' operating delay time(abt. 50mS) to actual output time.



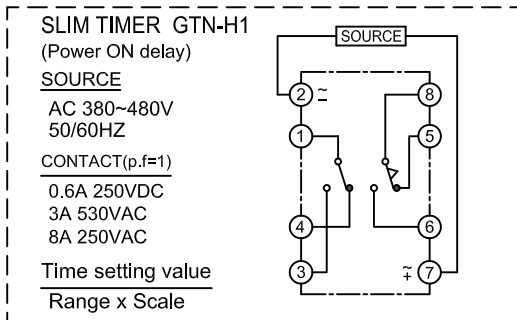
SLIM (22.5mm) TIMER (GTN Series) GTN-H1/H2/H3/H4

5.3 GTN-H1/ H2/ H3/ H4 DESCRIPTION

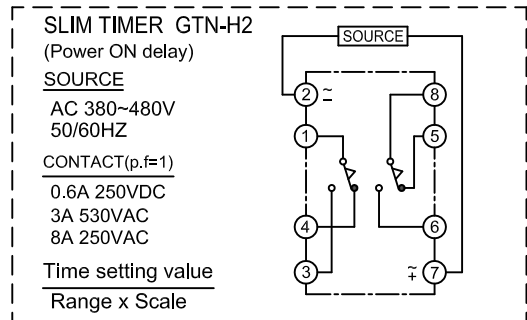


- | | | | |
|-------------------------|---|---------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN - H1/ H2/ H3/ H4 | 7. External T.B | : M3.5 screw |
| 2. Range setting switch | : 4 position 2 dip switch | 8. Protection cover | : PC (clear) |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC |
| 4. Time scale | : 00~99 | 10. Body | : PC |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital push-switch
(+) increase, (-) decrease | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |

GTN-H1 (Power ON delay)
GTN-H3 (Power ON interval)



GTN-H2 (Power ON delay)
GTN-H4 (Power ON interval)



SLIM (22.5mm) TIMER (GTN Series)

GTN-FL

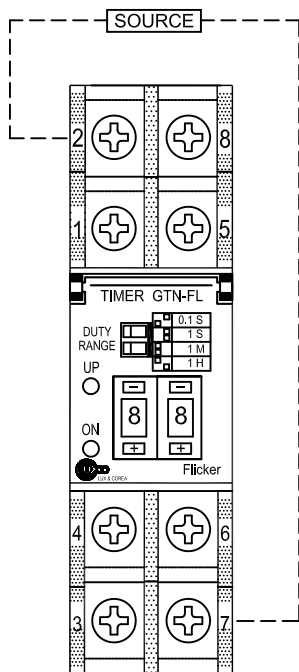
6. FLICKER TIMER : (8P) POWER ON FLICKERING

6.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-FL (2c)	SOURCE	* AC/DC 24V * AC 100~240V 50/60Hz * DC 120V
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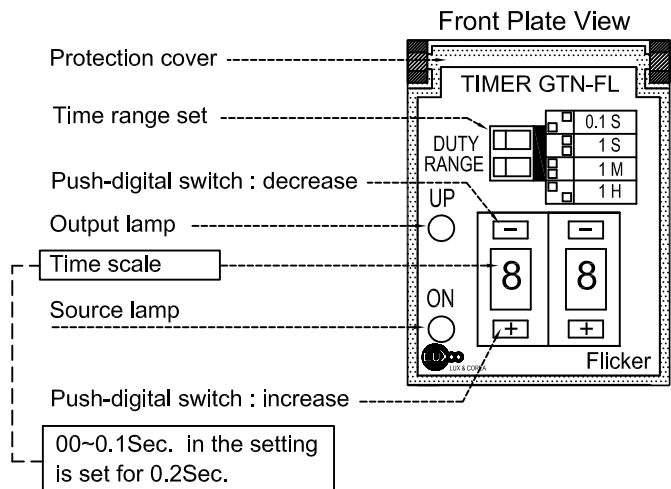
Set the flickering time before operation : 4 mode duty ranges are selectable by 2 dip switch on the front side and set the duty time by 2 push digital switch. The time and duty ranges are as follows.
* Duty time range : (0.2~99Sec., 1~99Min., 1~99Hrs.)

In/out Connection & T.B layout

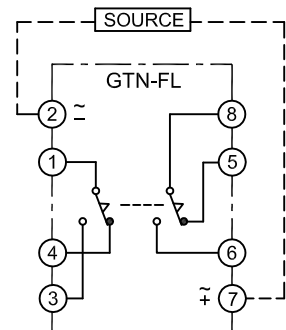


** The contact output comes from inside, and capacitor is as follows.
8A 30VDC / 8A 250VAC (p.f =1)
0.6A 250VDC

Duty time setting value : Range x Scale

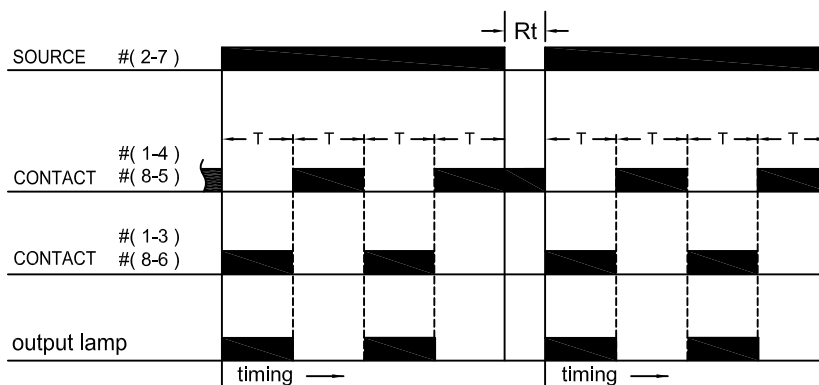


In/out block diagram



TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outpitted by changing value.

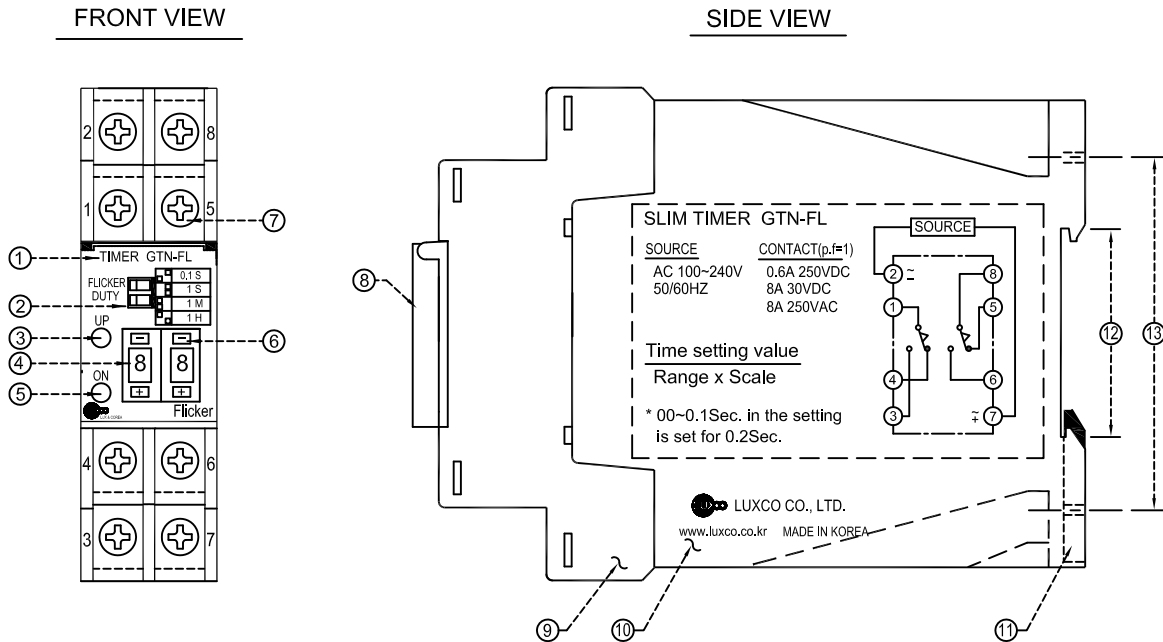


(Rt : Reset time)
above 0.5Sec.

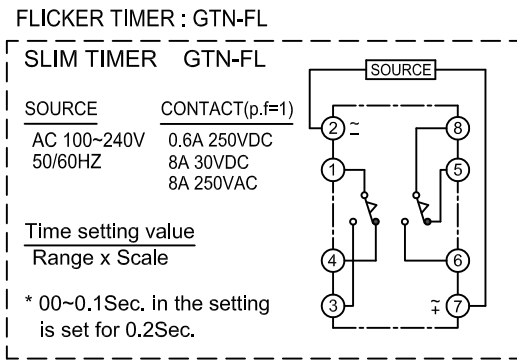
(T : Setting time)
0.2Sec.(min)

SLIM (22.5mm) TIMER (GTN Series) **GTN-FL**

6.2 FLICKER TIMER DESCRIPTION



- | | | | |
|-------------------------|---|---------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-FL | 7. External T.B | : M3.5 screw |
| 2. Range setting switch | : 4 position 2 dip switch | 8. Protection cover | : PC (clear) |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 00~99 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital push-switch
(+) increase, (-) decrease | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |



SLIM (22.5mm) TIMER (GTN Series)

GTN-IC

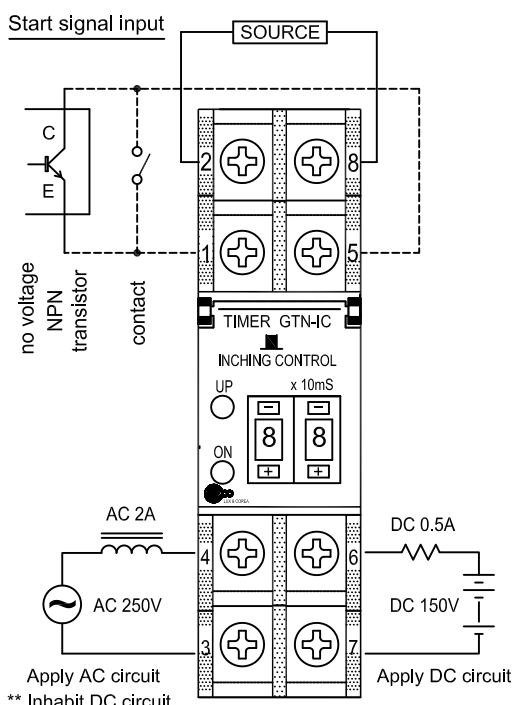
7. INCHING(寸動) TIMER - (10P) SIGNAL ON INCHING

7.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-IC (SSR)	SOURCE	* AC/DC 24V * AC 100~240V 50/60Hz * DC 120V
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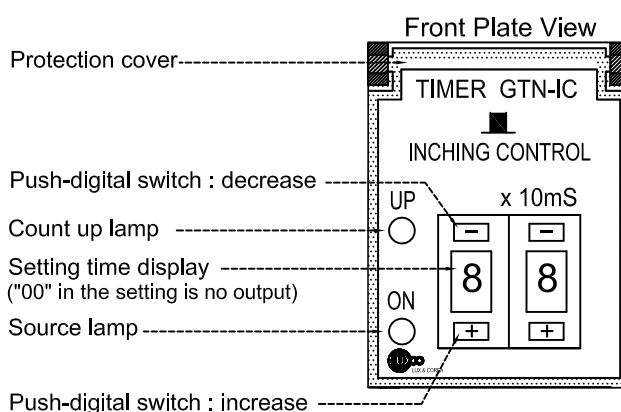
Set the inching time by 2 push digital switch before operation.
And the time ranges are as follows.
(1~99 : 10~990mSec. by 10mSec. step)

In/out Connection & T.B layout

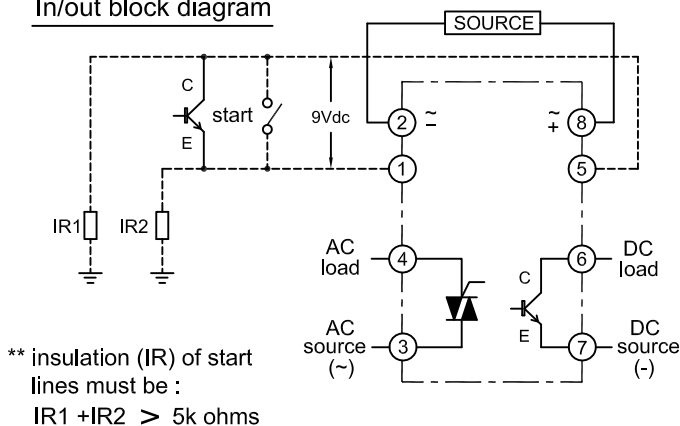


** The contact output comes from inside, and SSR output capacitor is as follows.
2A 250VAC (p.f=1) / 0.5A 150VDC

Ranges and setting

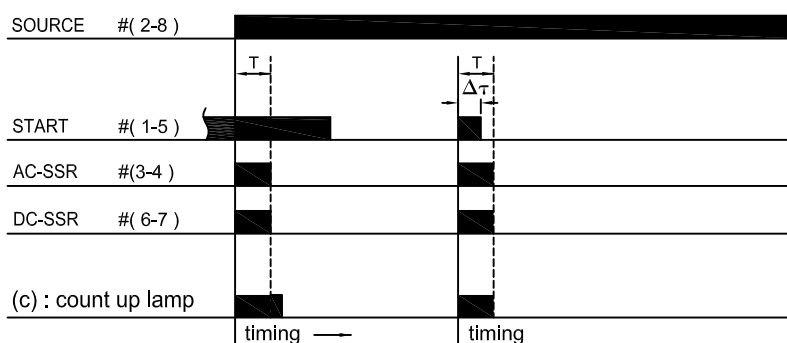


In/out block diagram



TIMING FLOWCHART

△ NOTE : The value already set can not be changeable during counting, and resetting is possible after counting is over.

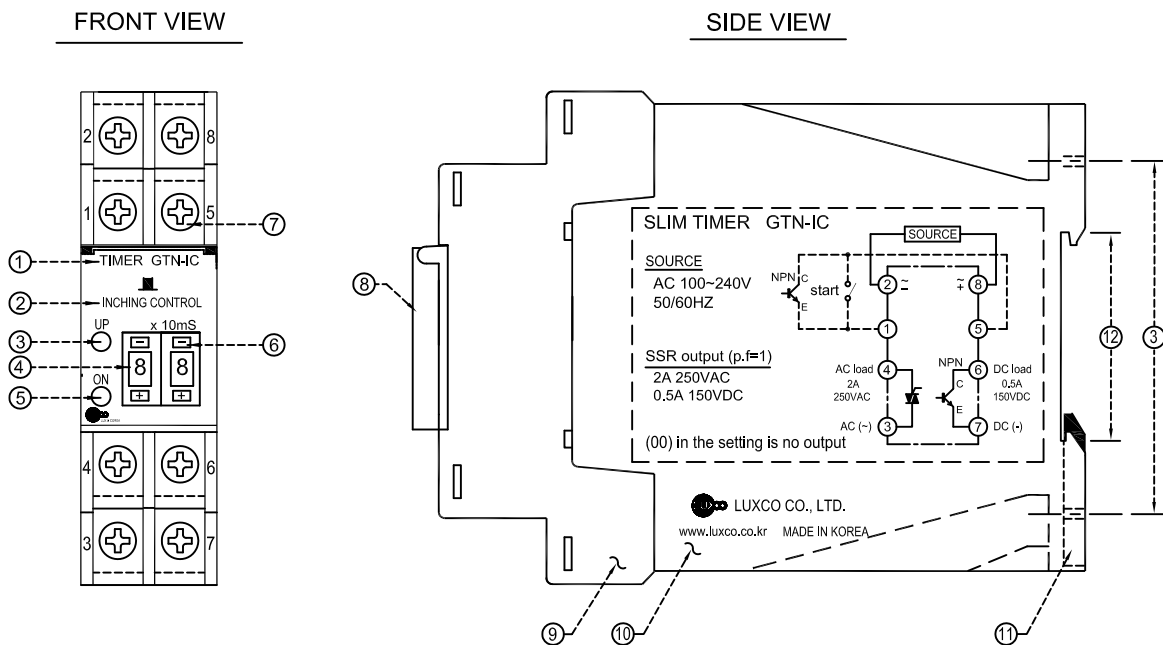


(T : Setting time)

$$\frac{\Delta\tau \geq 10mSec}{(T) : count}$$

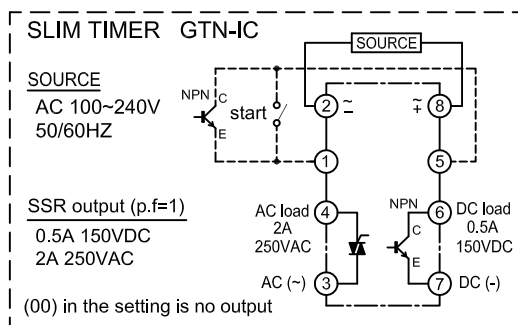
SLIM (22.5mm) TIMER (GTN Series) **GTN-IC**

7.2 INCHING TIMER DESCRIPTION



- | | | | |
|---------------------|---|---------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-IC | 7. External T.B | : M3.5 screw |
| 2. Control name | : inching(寸動) control | 8. Protection cover | : PC (clear) |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Setting display | : 10mS.~990mS. | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital push-switch
(+) increase, (-) decrease | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |

INCHING(寸動) TIMER : GTN-IC



SLIM (22.5mm) TIMER (GTN Series)

GTN-WH

8. WINDING HEATER TIMER

8.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-WH (1a,1a)	SOURCE	* AC 100~240V 50/60Hz	* AC 380~480V 50/60Hz
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Set the heating delay ON time before operation.
 And the time ranges are as follows (15 steps by digital selector switch).
 (30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58Sec.)
 MODE SET : Test mode --- scale will be changed to x 0.1Sec.(3.0Sec.~5.8Sec.)
 Run mode --- scale will be fixed on x1Sec.(30Sec.~58Sec.)

In/out Connection & T.B layout

Range and setting

2dip switch for time range set ---

Heating lamp ---

Time scale ---

Source lamp ---

Front Plate View

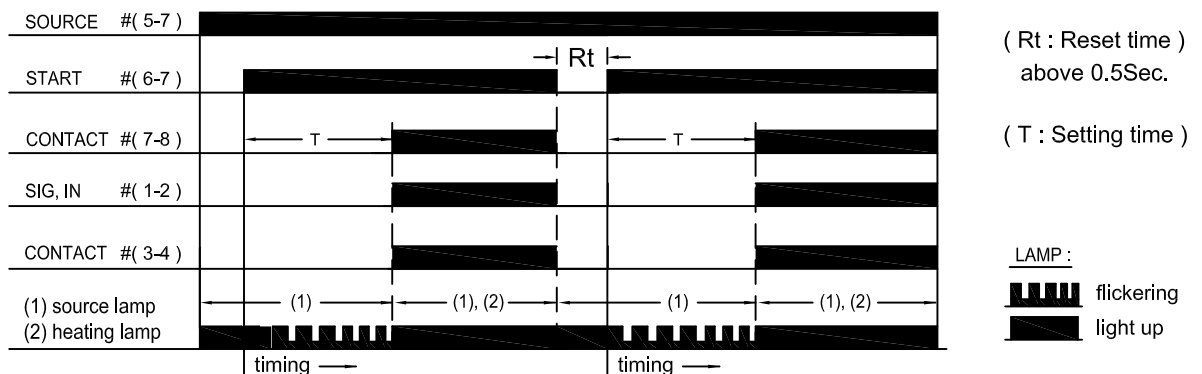
* flicker brightly and dimly during the counting and light up after count up.

in/out block diagram

** The contact output comes from inside, and capacitor is as follows.
 RY : 1A 30VDC / 1A 250VAC (p.f=1)
 2T : 8A 250VAC / 3A 530VAC (p.f=1)

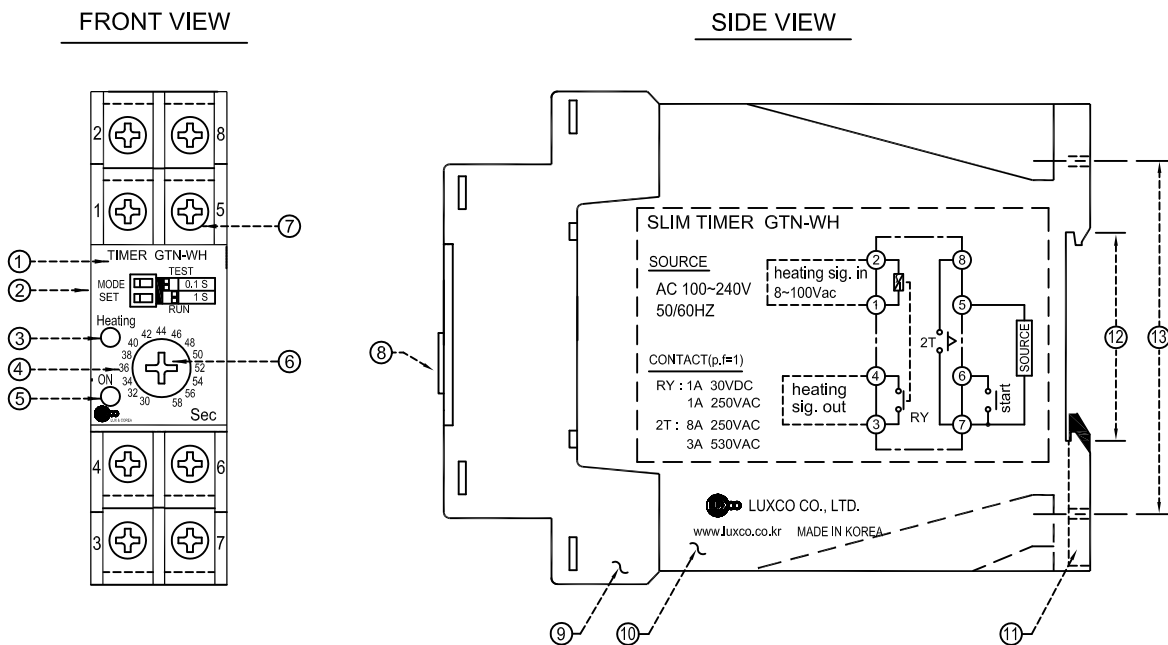
TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.

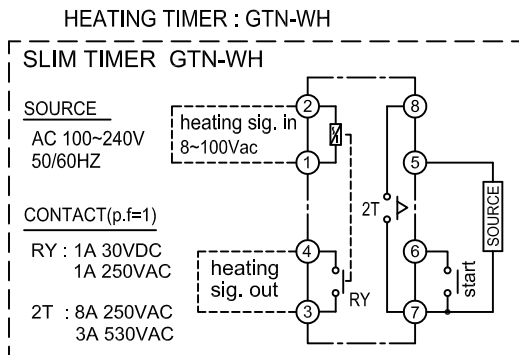


SLIM (22.5mm) TIMER (GTN Series) **GTN-WH**

8.2 WINDING HEATER TIMER DESCRIPTION



- | | | | |
|---------------------|-------------------------------------|------------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-WH | 7. External T.B | : M3.5 screw |
| 2. Mode set switch | : Test / Run mode | 8. Time adjusting knob | : PC / ABS |
| 3. Heating lamp | : LED (light up in yellow) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 30~58 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch (15 step) | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |



SLIM (22.5mm) TIMER (GTN Series)

GTN-YD

9. Y-D STARTING TIMER

9.1 OPERATING & TIMING-FLOWCHART

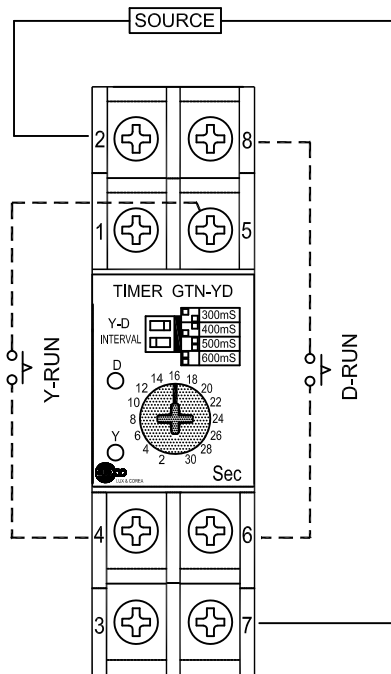
MODEL	GTN-YD (1a,1a)	SOURCE	* AC 100~240V 50/60Hz * AC 380~480V 50/60Hz
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Set the Y-running time (02~30Sec) and Y-D changing interval time before operation.

: Y-running time ranges are as follows (15steps by digital selector switch).
(2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30Sec.)

: Y-D changing interval time ranges are as follows (4mode ranges are changeable by 2 dip switch).
(300mS, 400mS, 500mS, 600mS)

In/out Connection & T.B layout



** The contact output comes from inside, and capacitor is as follows.
8A 250VAC / 3A 530VAC (p.f=1)

Range and setting

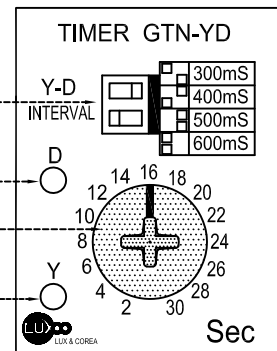
Dip switch for Y-D changing interval time set.

(D) running lamp

Digital selector switch

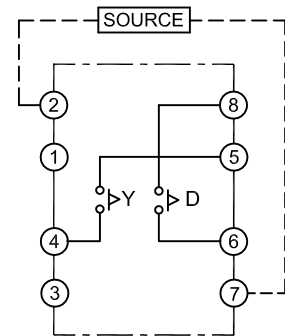
flicker on (Y) running and turn-off after count up

Front Plate View



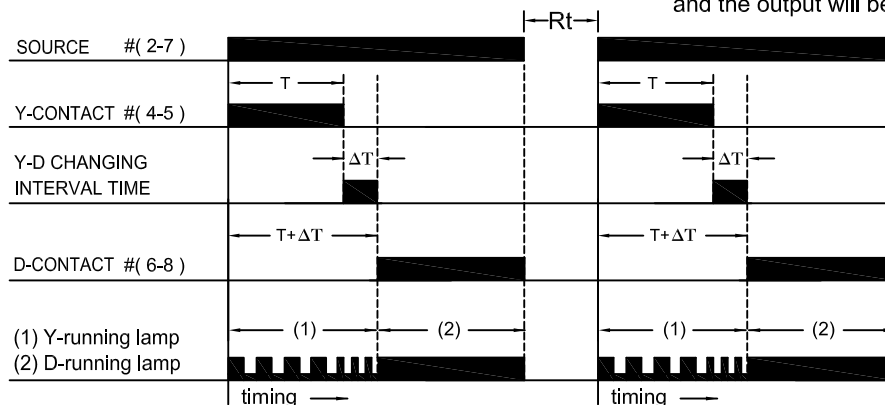
* flicker brightly and dimly during the counting and turn-off after count up.

in/out block diagram





TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.



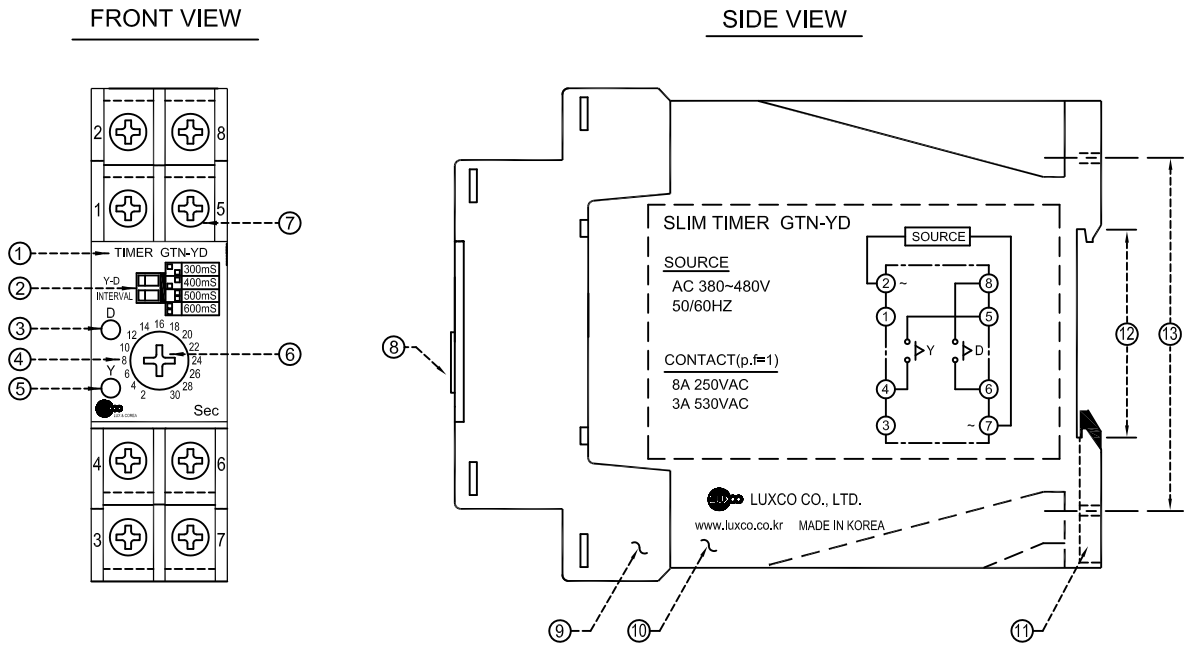
(Rt : Reset time)
above 0.5Sec.

* ΔT : Y-D INTERVAL
300mS ≤ ΔT ≤ 600mS

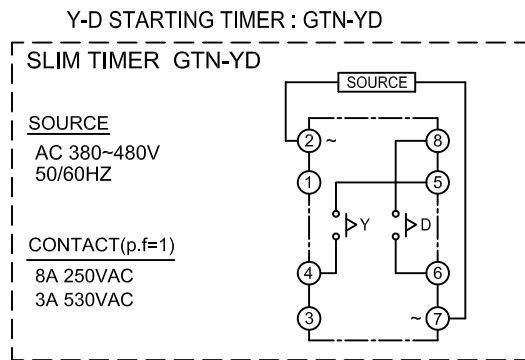
LAMP :
 flickering
 light up

SLIM (22.5mm) TIMER (GTN Series) **GTN-YD**

9.2 Y-D STARTING TIMER DESCRIPTION



- | | | | |
|--------------------------------|---------------------------------------|------------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-YD | 7. External T.B | : M3.5 screw |
| 2. Interval time range setting | : 4 position 2 dip switch | 8. Time adjusting knob | : PC / ABS |
| 3. Delta run lamp | : LED (light up in yellow) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 2~30 | 10. Body | : PC / ABS |
| 5. Y-run lamp | : LED (light up in red) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch (15 step) | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |



SLIM (22.5mm) TIMER (GTN Series)

GTN-F1/F2

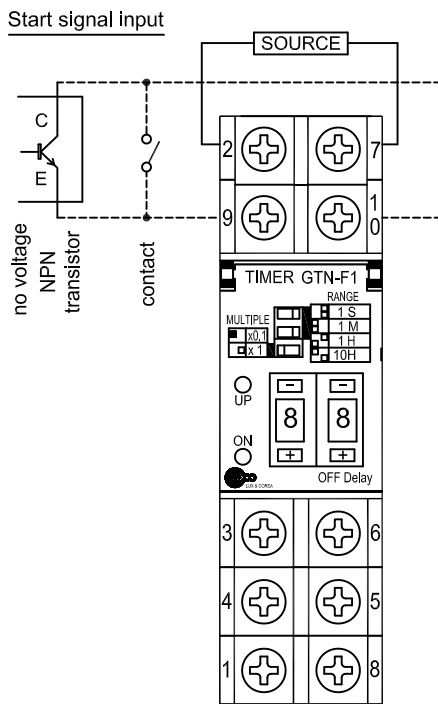
10. SIG. OFF / ON-OFF DELAY TIMER

10.1 OPERATING & DESCRIPTION

MODEL	GTN-F1 : (2c) GTN-F2 : (2c)	SOURCE	* AC/DC 24V * AC 100~240V 50/60Hz * DC 120V
-------	--------------------------------	--------	--

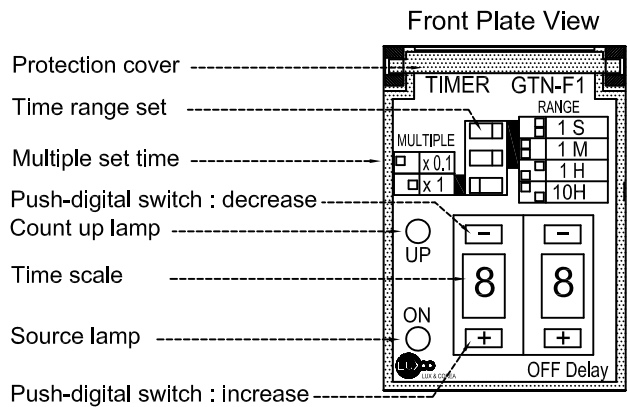
2mode time multiple and 4 mode time ranges are selectable by dip switch and adjust set the time (00~99) by 2 push digital switch. Output contact type and the time ranges are as follows.
Time setting range : (0.1~99Sec., 0.1~99Min., 0.1~990Hrs.,)

In/out Connection & T.B layout



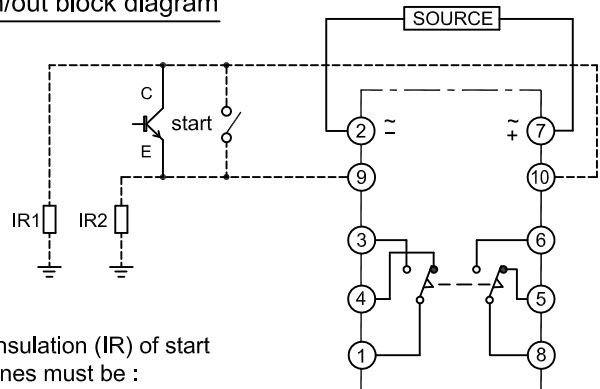
** The contact output comes from inside, and capacitor is as follows.
5A 30VDC / 5A 250VAC / 0.6A 125VDC (p.f=1)

Time setting value : Multiple x Range x Scale



* flicker brightly and dimly during the counting and light up after count up.

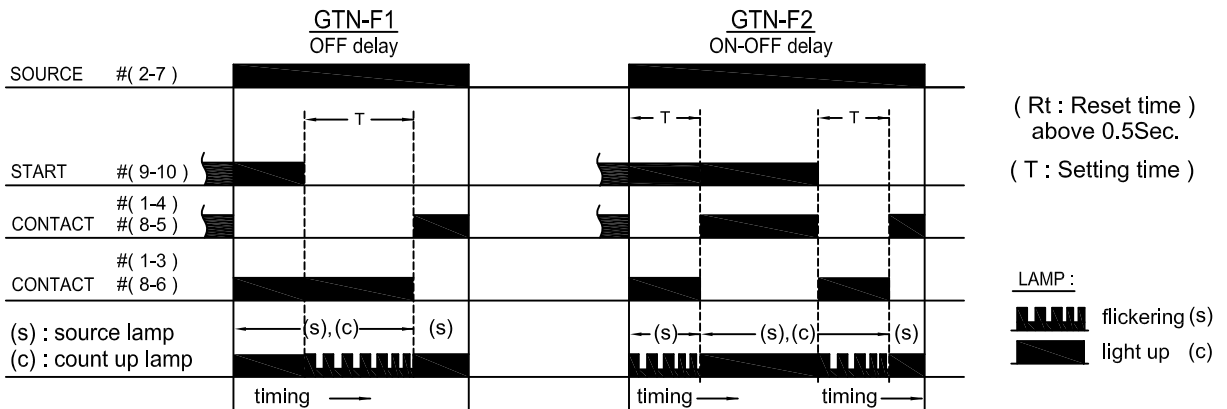
In/out block diagram



** insulation (IR) of start lines must be :
IR1 + IR2 > 10k ohms

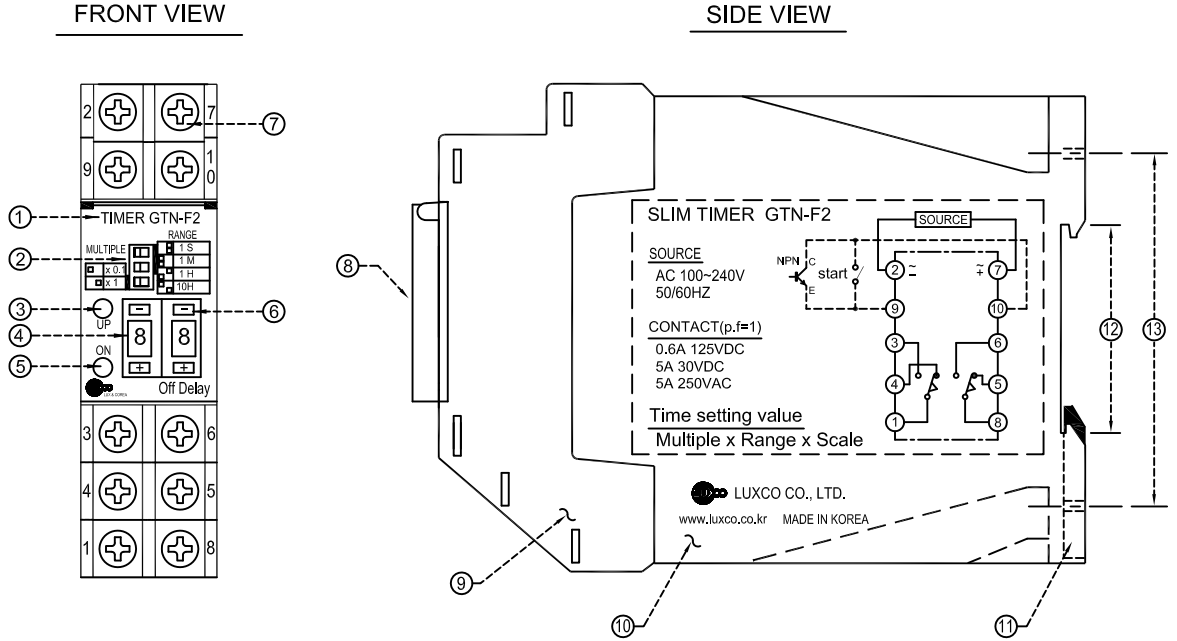
TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.

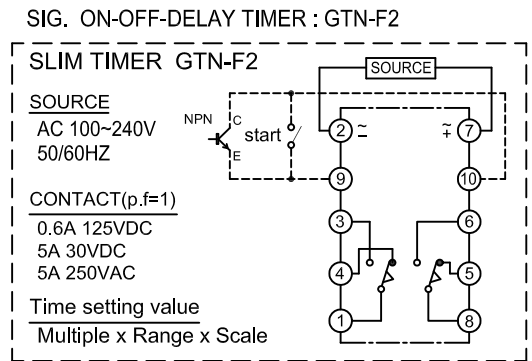
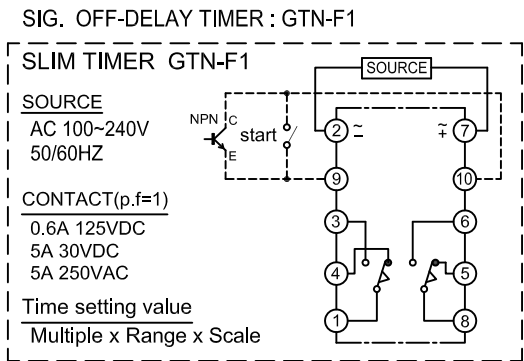


SLIM (22.5mm) TIMER (GTN Series) **GTN-F1/F2**

10.2 SIG. OFF/ ON-OFF TIMER DESCRIPTION



- | | | | |
|----------------------------|---|---------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-F1/ F2 | 7. External T.B | : M3.5 screw |
| 2. Time multiple/range set | : 4 position 2 dip switch | 8. Protection cover | : PC (clear) |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 00~99 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch
(+) increase, (-) decrease | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |



SLIM (22.5mm) TIMER (GTN Series)

GTN-M3, M4

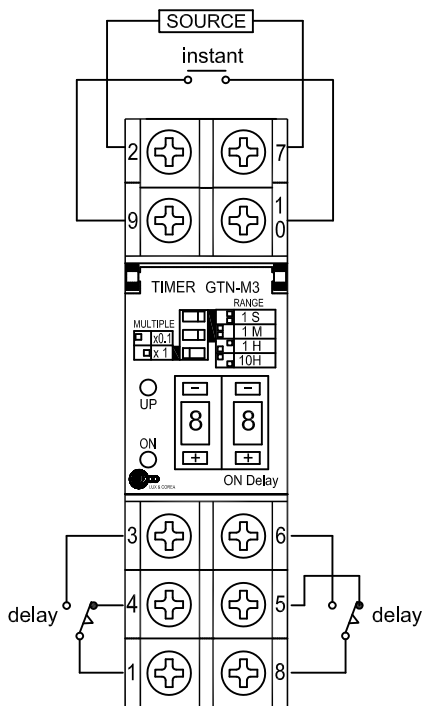
11. MULTI OUTPUT TIMER - (10P) 1a, 2c output

11.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-M3 (ON delay) GTN-M4 (Interval)	SOURCE	* AC/DC 24V * AC 100~240V 50/60Hz * DC 120V
-------	--	--------	--

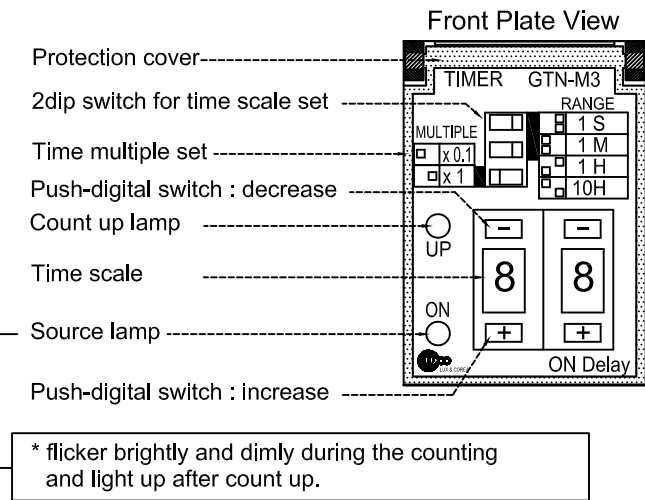
- 2 mode time multiple and 4 mode time ranges are selectable by dip switch.
And set the time by 2 push digital switch. Output contact type and the time ranges are as follows.
(0.1~99Sec., 0.1~99Min., 0.1~990Hr.)

In/out Connection & T.B layout
(1a instant 2c output)

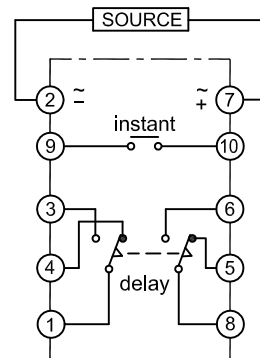


** The contact output comes from inside,
and capacitor is as follows.
5A 30VDC / 5A 250VAC / 0.6A 125VDC(p.f=1)

Time setting value : Multiple x Range x Scale

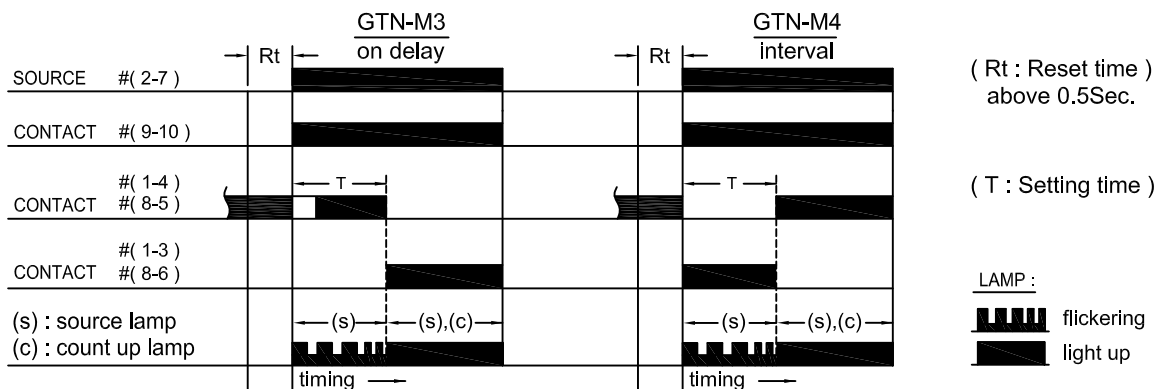


In/out block diagram



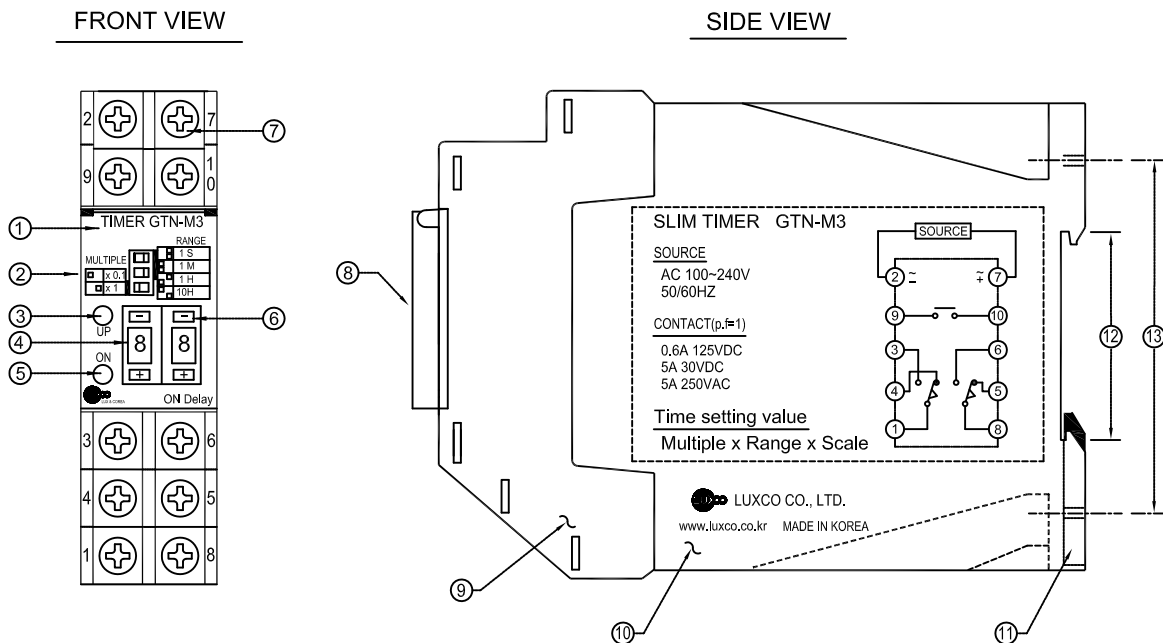
TIMING FLOWCHART

△ NOTE : The value set can be changeable during counting,
and the output will be outputted by changing value.
* Add power 'ON' operating time(abt. 50mS) to actual output time.



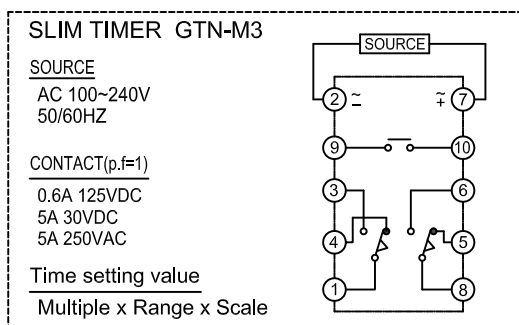
SLIM (22.5mm) TIMER (GTN Series) **GTN-M3, M4**

11.2 MULTI OUTPUT TIMER : (10P) GTN-M3, M4

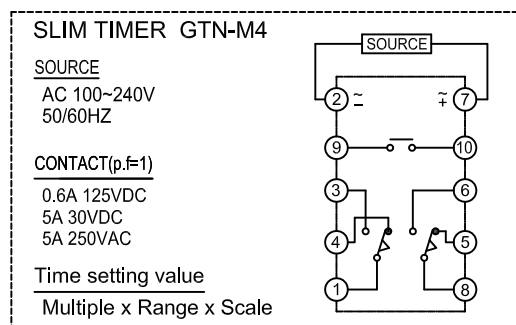


- | | |
|---|---|
| 1. Name & Model No. : TIMER GTN-M3, M4 | 7. External T.B : M3.5 screw |
| 2. Time multiple/scale set : dip switch | 8. Protection cover : PC (clear) |
| 3. Count up lamp : LED (light up in red) | 9. T.B & Frame : PC / ABS |
| 4. Time scale : 00~99 | 10. Body : PC / ABS |
| 5. Source lamp : LED (light up in green) | 11. Slide core : Mount lock & replace key |
| 6. Adjusting switch : digital push-switch
(+) increase, (-) decrease | 12. Mounting guide : DIN 35 mounting |
| | 13. Mounting hole : M4 JIS mounting |

MULTI OUTPUT TIMER : GTN-M3



MULTI OUTPUT TIMER : GTN-M4



SLIM (22.5mm) TIMER (GTN Series)

GTN-S1, S2, S3, S4

12. MULTI SOURCE TIMER

GTN-S1,S2 : Power ON delay timer

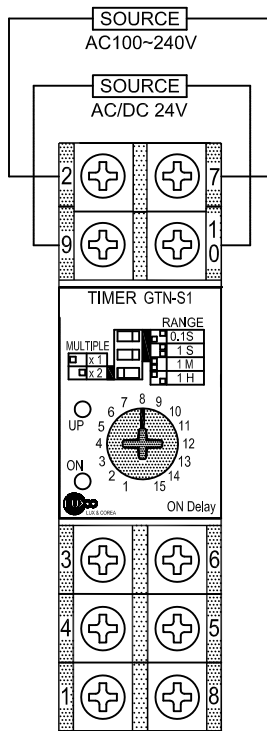
12.1 OPERATING & TIMING-FLOWCHART

GTN-S3,S4 : Power ON interval timer

MODEL	GTN-S1/ S3 : (1c,1c) GTN-S2/ S4 : (2c)	SOURCE	* AC/DC 24V 50/60Hz OR AC 100~ 240V 50/60Hz
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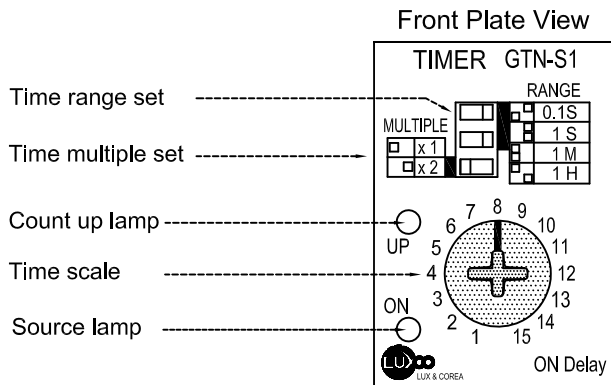
- 2 mode time multiple and 4 mode time ranges are selectable by dip switch and set the time by 15 steps digital selector switch to time scale. Output contact type and the time ranges are as follows.
Time setting value range : (0.1~3.0Sec., 1~30Sec., 1~30Min., 1~30Hr.)

In/out Connection & T.B layout

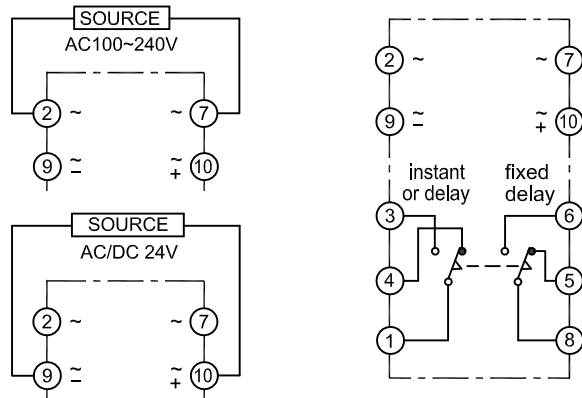


** The contact output comes from inside, and contact capacitor is as follows.
5A 30VDC / 5A 250VAC (p.f=1)

Time setting value : Multiple x Range x Scale

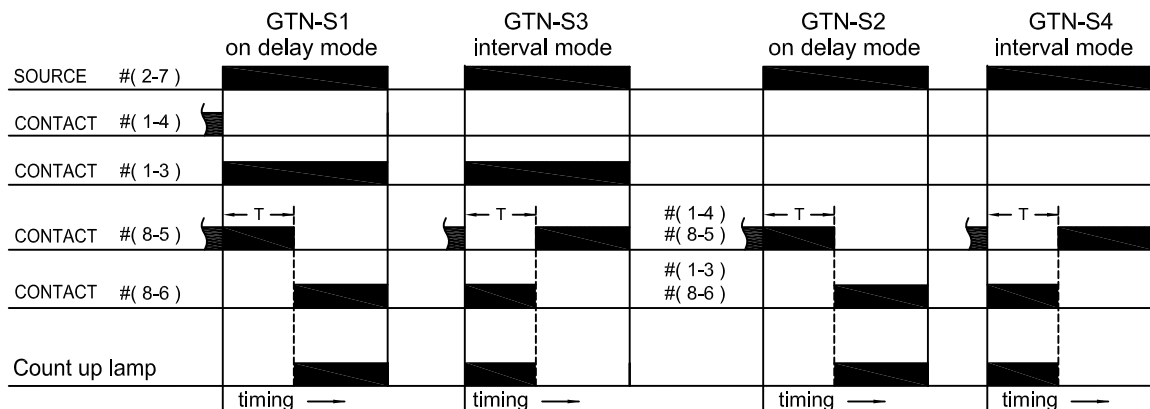


In/out block diagram & voltage change



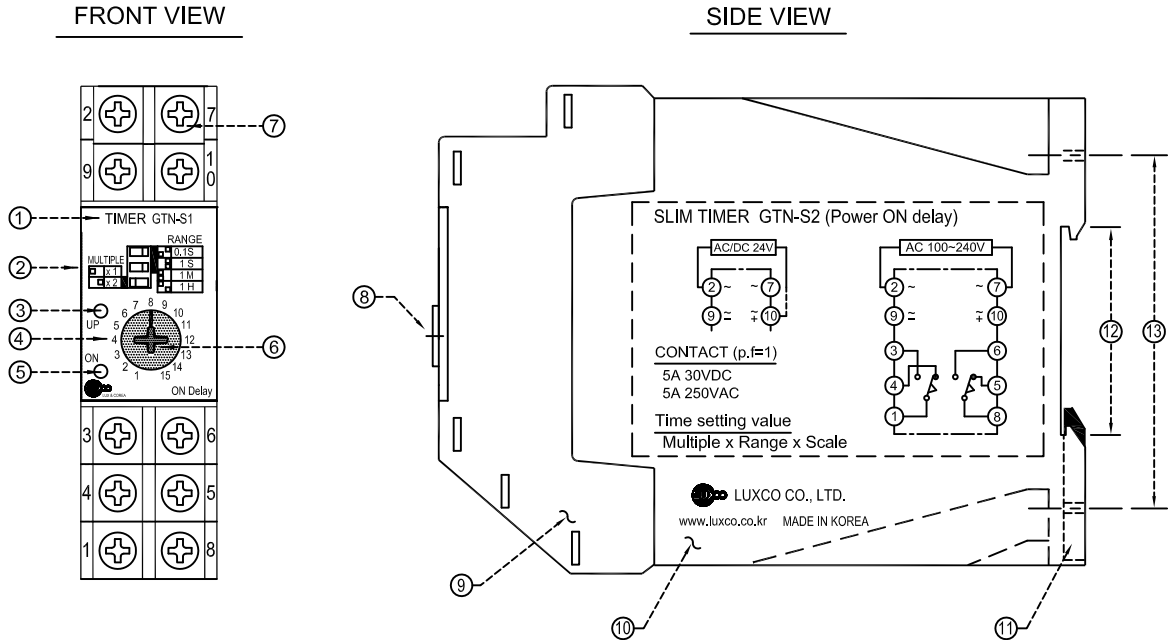
TIMING FLOWCHART
(T : Setting time)

△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.
* Add power 'ON' operating delay time(abt. 50mS) to actual output time.



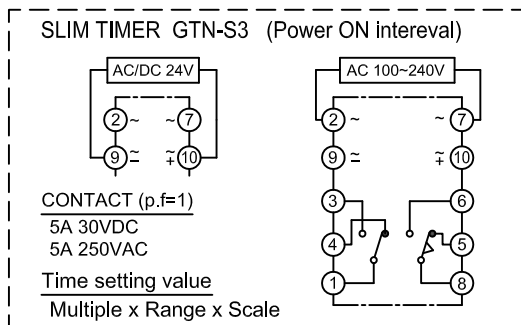
SLIM (22.5mm) TIMER (GTN Series) **GTN-S1, S2, S3, S4**

12.2 MULTI-SOURCE TIMER DESCRIPTION

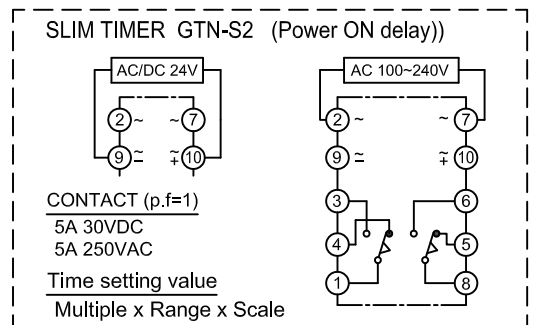


- | | | | |
|---------------------------------------|---------------------------------------|------------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-S1/ S2/ S3/ S4 | 7. External T.B | : M3.5 screw |
| 2. Time multiple/range setting switch | : dip switch | 8. Time Adjusting knob | : PC / ABS |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 1~15 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch (15 step) | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |

MULTI SOURCE TIMER : GTN-S1 (Power ON delay)
MULTI SOURCE TIMER : GTN-S3 (Power ON interval)



MULTI SOURCE TIMER : GTN-S2 (Power ON delay)
MULTI SOURCE TIMER : GTN-S4 (Power ON interval)



SLIM (22.5mm) TIMER (GTN Series)

GTN-SF1, SF2

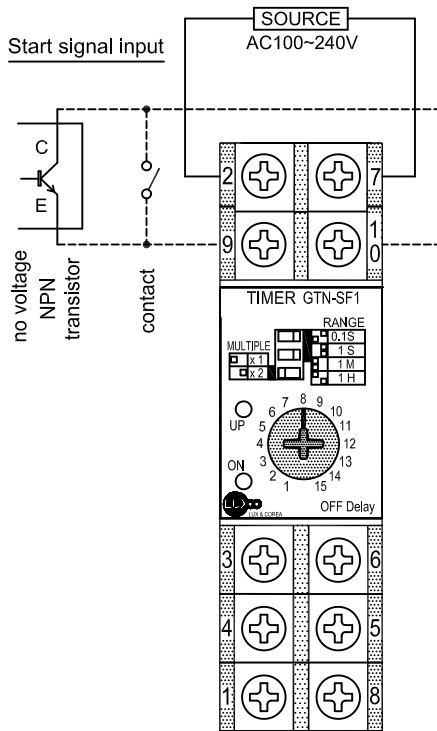
13. SIG. OFF / ON-OFF DELAY TIMER (Fixed range)

13.1 OPERATING & TIMING-FLOWCHART

MODEL	GTN-SF1 : (2c) off delay GTN-SF2 : (2c) on-off delay	SOURCE	* AC/DC 24V 50/60Hz * AC 100~ 240V 50/60Hz * DC 120V
-------	---	--------	---

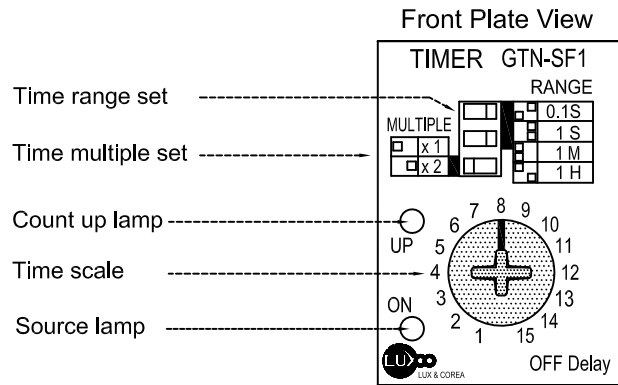
- 2 mode time multiple and 4 mode time ranges are selectable by dip switch and set the time by 15 steps digital selector switch to time scale. Output contact type and the time ranges are as follows.
Time setting value range : (0.1~3.0Sec., 1~30Sec., 1~30Min., 1~30Hr.)

In/out Connection & T.B layout

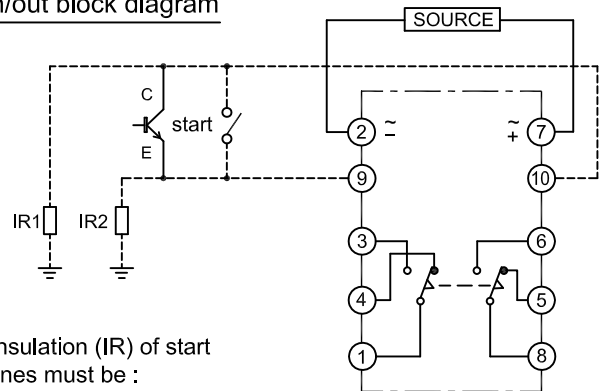


** The contact output comes from inside, and contact capacitor is as follows.
5A 30VDC / 5A 250VAC (p.f=1)

Time setting value : Multiple x Range x Scale



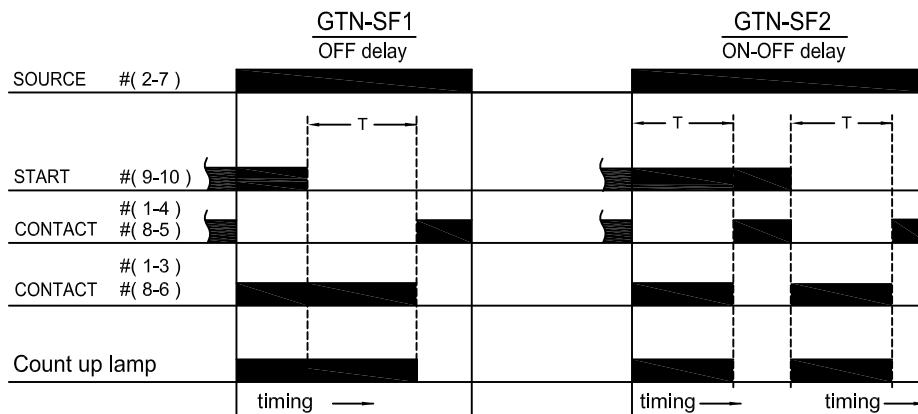
In/out block diagram



** insulation (IR) of start lines must be :
 $IR1 + IR2 > 10k\ ohms$

TIMING FLOWCHART

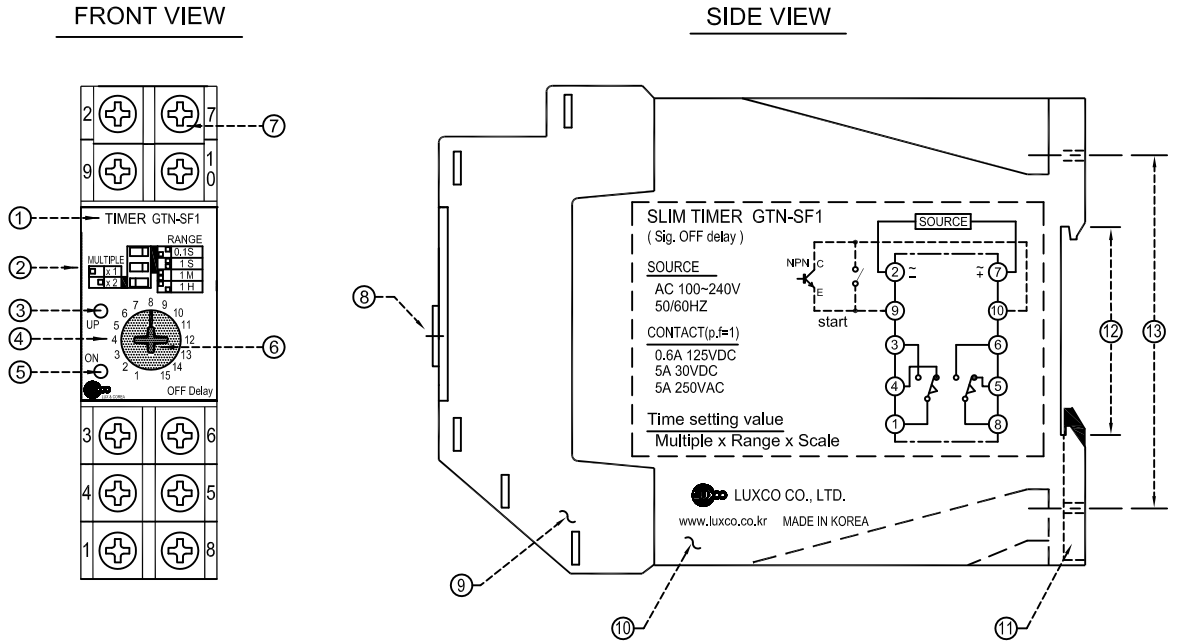
△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.
* Add power 'ON' operating delay time(abt. 50mS) to actual output time.



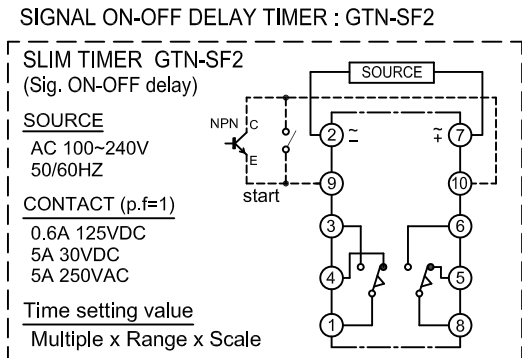
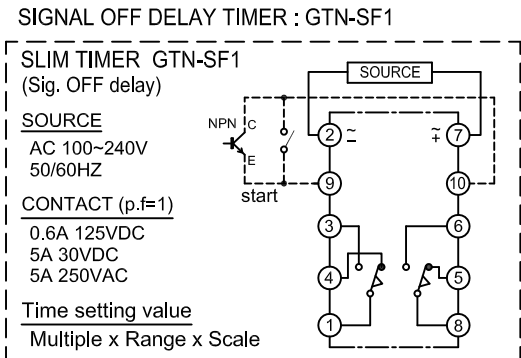
(Rt : Reset time)
above 0.5Sec.
(T : Setting time)

SLIM (22.5mm) TIMER (GTN Series) GTN-SF1, SF2

13.2 OFF / ON-OFF DELAY TIMER (fixed range) DESCRIPTION



- | | | | |
|---------------------------------------|---------------------------------------|------------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-SF1/ SF2 | 7. External T.B | : M3.5 screw |
| 2. Time multiple/range setting switch | : dip switch | 8. Time Adjusting knob | : PC / ABS |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 1~15 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch (15 step) | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |



SLIM (22.5mm) TIMER (GTN Series)

GTN-E1, E2, E3, E4

14. GENERAL TIMER

14.1 OPERATING & TIMING-FLOWCHART

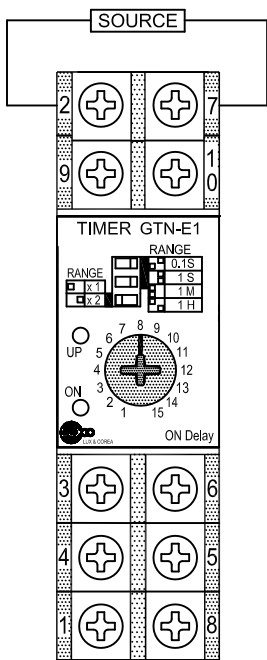
GTN-E1,E2 : Power ON delay timer

GTN-E3,E4 : Power ON interval timer

MODEL	GTN-E1/ E3 : (1c,1c) GTN-E2/ E4 : (2c)	SOURCE	* DC 120V
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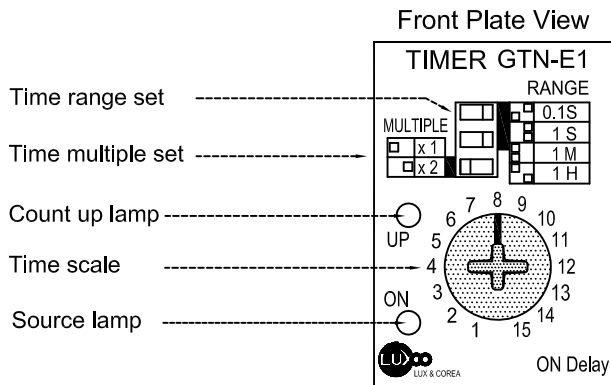
- 2 mode time multiple and 4 mode time ranges are selectable by dip switch and set the time by 15 steps digital selector switch to time scale. Output contact type and the time ranges are as follows.
Time setting value range : (0.1~3.0Sec., 1~30Sec., 1~30Min., 1~30Hr.)

In/out Connection & T.B layout

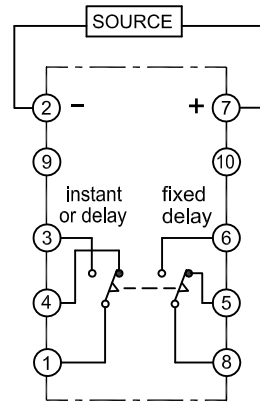


** The contact output comes from inside, and contact capacitor is as follows.
0.6A 125VDC / 5A 30VDC / 5A 250VAC (p.f=1)

Time setting value : Multiple x Range x Scale



In/out block diagram & voltage change

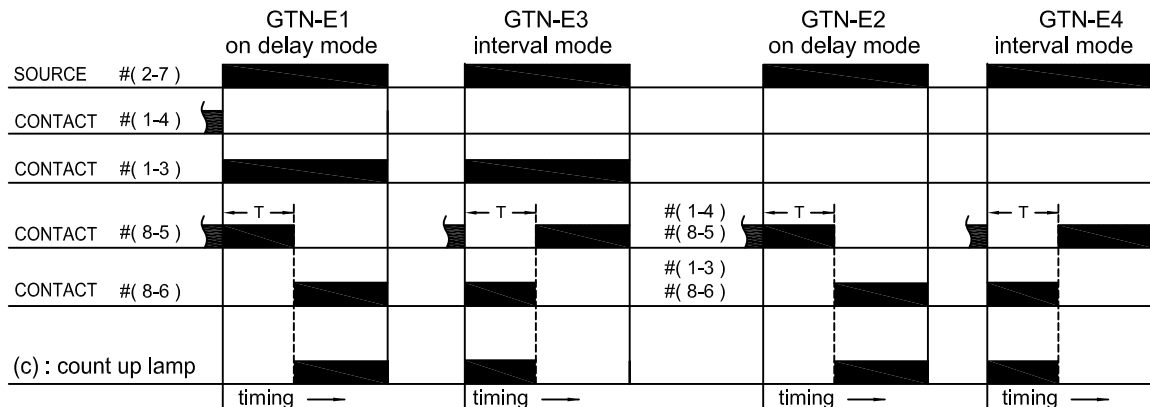


TIMING FLOWCHART

(T : Setting time)

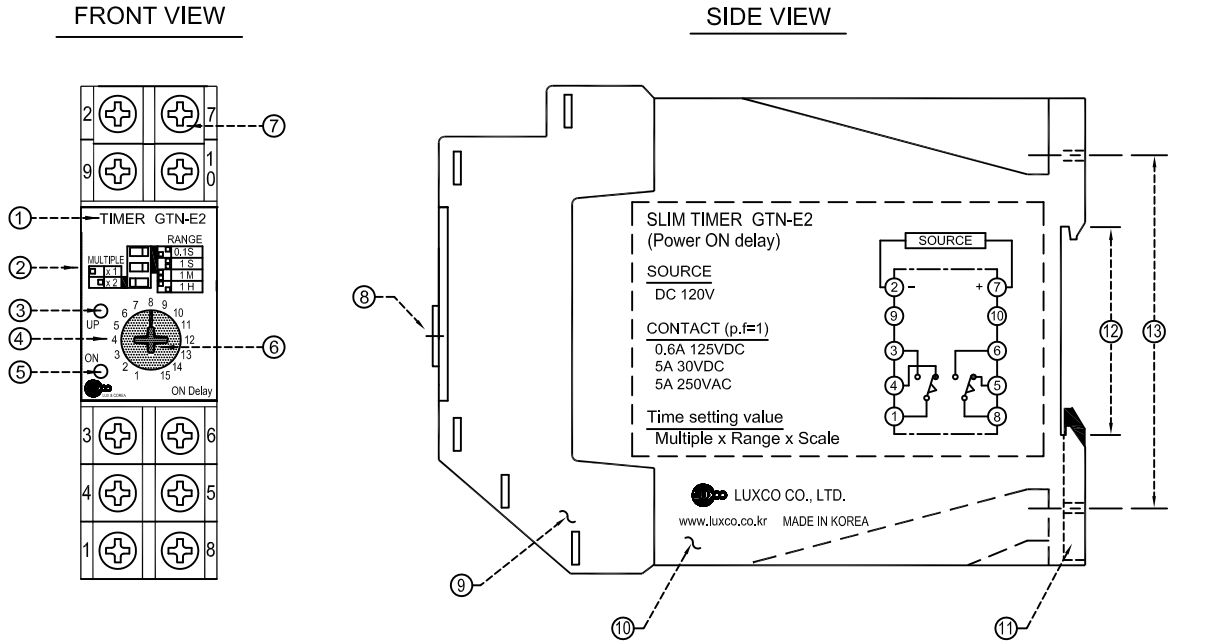
△ NOTE : The value set can be changeable during counting, and the output will be outputted by changing value.

* Add power 'ON' operating delay time(abt. 50mS) to actual output time.



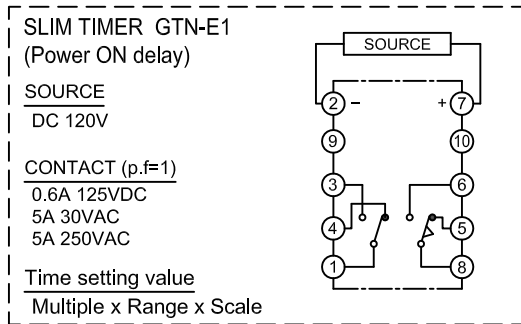
SLIM (22.5mm) TIMER (GTN Series) GTN-E1, E2, E3, E4

14.2 GENERAL TIMER DESCRIPTION



- | | | | |
|---------------------------------------|---------------------------------------|------------------------|----------------------------|
| 1. Name & Model No. | : TIMER GTN-E1/ E2/ E3/ E4 | 7. External T.B | : M3.5 screw |
| 2. Time multiple/range setting switch | : dip switch | 8. Time Adjusting knob | : PC / ABS |
| 3. Count up lamp | : LED (light up in red) | 9. T.B & Frame | : PC / ABS |
| 4. Time scale | : 1~15 | 10. Body | : PC / ABS |
| 5. Source lamp | : LED (light up in green) | 11. Slide core | : Mount lock & replace key |
| 6. Adjusting switch | : digital selector-switch (15 step) | 12. Mounting guide | : DIN 35 mounting |
| | | 13. Mounting hole | : M4 JIS mounting |

MULTI SOURCE TIMER : GTN-E1 (Power ON delay)
 MULTI SOURCE TIMER : GTN-E3 (Power ON interval)



MULTI SOURCE TIMER : GTN-E2 (Power ON delay)
 MULTI SOURCE TIMER : GTN-E4 (Power ON interval)

