

LINE FAULT DETECTOR

• LFD-3PB® / 6PB® / 10PB®



SLIM TIMER

- POWER ON DELAY
- SIGNAL OFF DELAY
- SIGNAL ON/OFF DELAY
- POWER ON INTERVAL
- FLICKER
- WINDING HEATER
- Y-D STARTING

SLIM TIMER

GTN SERIES

GENERAL INFORMATION

GTN new type series are slim (22.5mm) type timers which have built in MICOM and flame retardant case. It can be applied to marine equipments and industrial plants for the purpose of accurate time control. Time setting is done by digital or rotary switch, so it is more convenient to set and more accurate to control time than VR adjusting timer. And it also 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-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 "1a" instant "2c" fixed contact output and 0.1sec.~990hrs. wide time range for any specification.

ORDERING INFORMATION

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

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

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

Make a note of rating voltage separately.

WR : Wide range [0~99]

FR : Fixed range [0~30]

Contact output type

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

GTN - S1

CLASSIFICATION		FUNCTION	MODEL	OUTPUT CONTACT	TIME RANGE	RATING VOLTAGE	TB			
HIGH-CON		On delay	GTN-H1	[1c, 1c]	0.1sec. ~ 99min.	WR * AC 380~480V * DC 120V (OPTION) * DC 240V	8P			
		On delay	GTN-H2	[2c]						
		Interval	GTN-H3	[1c, 1c]						
		Interval	GTN-H4	[2c]						
SPECIAL		Flicker	GTN-FL	[2c]	0.2sec. ~ 99hrs.	FR * AC/DC 24V * DC 120V * AC 110V / 220V * AC 100~240V * AC 380~480V * AC 100~240V	8P			
		Winding heater	GTN-WH	[1a, 1a]				30sec. ~ 58sec.		
		Y-D starting	GTN-YD	[1a, 1a]					2sec. ~ 30sec.	
		Sing. off delay	GTN-F1	[2c]						0.1sec. ~ 990hrs.
		Sig. on-off delay	GTN-F2	[2c]						
MULTI	OUTPUT	On delay	GTN-M3	[1a, 2c]	0.1sec. ~ 990hrs.	WR * AC/DC 24V * AC 100~240V * DC 120V	10P			
		Interval	GTN-M4	[1a, 2c]						
	SOURCE	On delay	GTN-S1	[1c, 1c]	0.1sec. ~ 30hrs.	FR Combination source * AC/DC 24V or AC 100~240V				
		On delay	GTN-S2	[2c]						
		Interval	GTN-S3	[1c, 1c]						
		Interval	GTN-S4	[2c]						
		Pulse on delay	GTN-S5	[2c]						
GENERAL		Sing. off delay	GTN-SF1	[2c]	0.1sec. ~ 30hrs.	* AC/DC 24V * DC 120V * AC 100~240V				
		Sig. on-off delay	GTN-SF2	[2c]						
		On delay	GTN-E1	[1c, 1c]	0.1sec. ~ 30hrs.	* DC 120V				
		On delay	GTN-E2	[2c]						
		Interval	GTN-E3	[1c, 1c]						
		Interval	GTN-E4	[2c]						

GENERAL SPECIFICATIONS

VOLTAGE RATING		AC/DC 24V 50/60Hz	AC 100~240V 50/60Hz	DC 120V	AC 380~480V 50/60Hz	DC 240V
VOLTAGE VARIATION		80 ~ 120%	85 ~ 110%	80 ~ 120%	85 ~ 110%	85 ~ 110%
POWER CONSUMPTION(max.)		1c, 1c/1a, 2c output	2VA/1.5W	10VA	2.5W	10VA
		2c output	1.5VA/1W	7VA	2.5W	10VA
TIMING SPECIFICATIONS	SETTING ACCURACY	Above 1sec. : ± 1% / Under 1sec. : ± 5-10%				
	TIME ADJUSTING	Value can be set by digital push or selector switch.				
	EFFECT OF TEMPERATURE	± 0.5%(-20°C to 80°C) of setting				
	TIME CHANGING DURING COUNTING	Output will be changed according to changing time set				
OUTPUT CONTACT	CAPACITY	30VDC 5.0A (resistive) 2.0A (inductive p.f = 0.4) 250VAC 5.0A (resistive) 2.0A (inductive p.f = 0.4) 250VDC 1.2A (resistive)		530VAC 3.0A (resistive) 1.2A (inductive p.f = 0.4) 250VAC 8.0A (resistive) 3.2 (inductive p.f = 0.4) 250VDC 1.2A (resistive)		
MECHANICAL/ELECTRICAL LIFE EXPECTANCY		10,000,000/100,000 (30 operations/min.)				
ENCLOSURE		PC (polycarbonate) - Flame retardant (UL94 V-0) - TRIREX3025G10 / Glass fiber reinforced ABS-Flame retardant (UL94 V-0) - STAREX (ABS VH-0800)				
DIELECTRIC STRENGTH		2.5KV for 1 minute between live parts and enclosure				
AMBIENT CONDITIONS	AMBIENT TEMPERATURE RANGE	-20°C ~ +55°C				
	STORAGE TEMPERATURE RANGE	-25°C ~ +65°C				
	HUMIDITY	35% ~ 85%R.H				



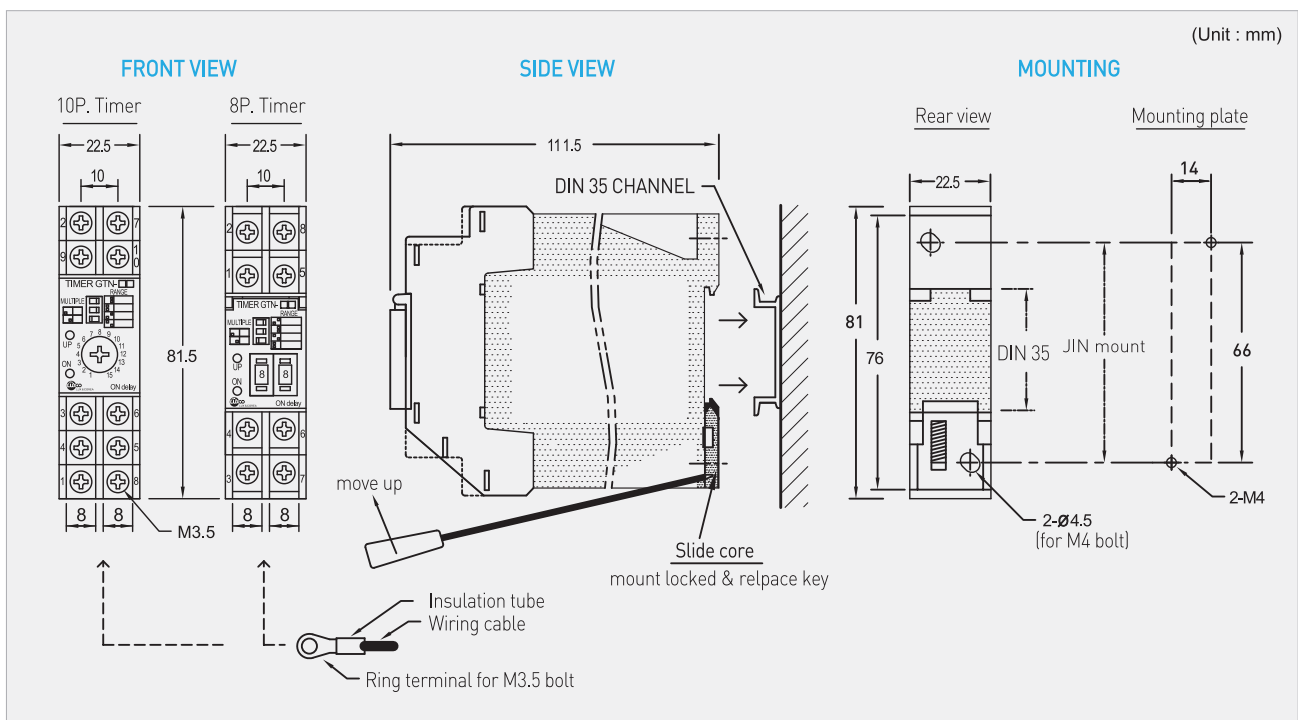
Do not perform high voltage test between a terminal and any other terminals. It can cause very serious damage to inner electronic circuit.



- Time setting can be changeable during counting, and the output will be changable according to time setting.
- Add power 'ON' operating delay time (abt. 50mS) to actual output time.

DIMENSIONS, MOUNTING AND REPLACEMENT

In case of replacement of timer, use tool "-" driver. Insert "-" driver to slide hole and move it up.



HIGH-CON TYPE



- 1 Name & Model No.----- TIMER GTN - H1 / H2 / H3 / H4
- 2 Range setting switch ----- 4 position 2 dip switch
- 3 Count up lamp ----- LED (light up in red)
- 4 Time scale----- 00-99
- 5 Source lamp----- LED (light up in green)
* LED flickers brightly and dimly during the counting and light up steadily after counting up.
- 6 Adjusting switch ----- digital push-switch
(+) increase, (-) decrease
- 7 External T.B ----- M3,5 screw
- 8 Protection cover ----- PC (clear)

GTN-H1 / H2 / H3 / H4

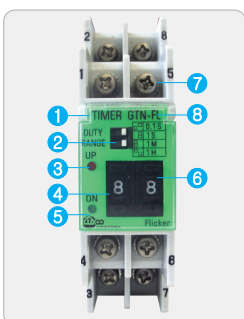
RATING VOLTAGE
* AC 380-480V 50/60Hz
* DC 120V
* DC 240V
TIME RANGE
* 0.1-99sec.
* 0.1-99min.

* TIME SETTING VALUE : RANGE x SCALE

[T : Setting time, Rt : Reset time - above 0.5sec.]

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
GTN-H1 (1c, 1c) POWER ON DELAY		<p>SOURCE # (2-7)</p> <p>CONTACT # (1-4)</p> <p>CONTACT # (1-3)</p> <p>CONTACT # (8-5)</p> <p>CONTACT # (8-6)</p> <p>(s) : source lamp (c) : count up lamp</p>
GTN-H2 (2c) POWER ON DELAY		<p>SOURCE # (2-7)</p> <p>CONTACT # (8-5)</p> <p>CONTACT # (1-3)</p> <p>CONTACT # (8-6)</p> <p>(s) : source lamp (c) : count up lamp</p>
GTN-H3 (1c, 1c) POWER ON INTERVAL		<p>SOURCE # (2-7)</p> <p>CONTACT # (1-4)</p> <p>CONTACT # (1-3)</p> <p>CONTACT # (8-5)</p> <p>CONTACT # (8-6)</p> <p>(s) : source lamp (c) : count up lamp</p>
GTN-H4 (2c) POWER ON INTERVAL		<p>SOURCE # (2-7)</p> <p>CONTACT # (1-4)</p> <p>CONTACT # (8-5)</p> <p>CONTACT # (1-3)</p> <p>CONTACT # (8-6)</p> <p>(s) : source lamp (c) : count up lamp</p>

SPECIAL TYPE



- 1 Name & Model No.----- TIMER GTN-FL
- 2 Range setting switch ----- 4 position 2 dip switch
- 3 Count up lamp ----- LED(light up in red)
- 4 Time scale----- 00-99
* 00-0.1sec. in the setting is set to 0.2sec.
- 5 Source lamp----- LED (light up in green)
- 6 Adjusting switch ----- digital push-switch
(+) increase, (-) decrease
- 7 External T.B ----- M3,5 screw
- 8 Protection cover ----- PC (clear)

GTN-FL

RATING VOLTAGE
* AC / DC 24V
* AC 110V 50/60Hz
* AC 220V 50/60Hz
* DC 120V
TIME RANGE
* 0.2-99sec.
* 1-99min.
* 1-99hrs.

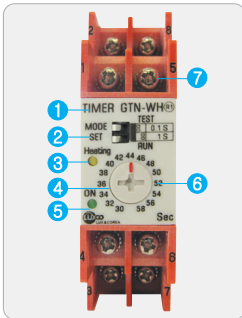
* TIME SETTING VALUE : RANGE x SCALE

[T : Setting time, Rt : Reset time - above 0.5sec.]

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
GTN-FL (2c) FLICKER		<p>SOURCE # (2-7)</p> <p>CONTACT # (1-4)</p> <p>CONTACT # (8-5)</p> <p>CONTACT # (1-3)</p> <p>output lamp</p>

SLIM TIMER

SPECIAL TYPE



- 1 Name & Model No.----- TIMER GTN-WH®
- 2 Mode set switch----- Test / Run mode
- 3 Heating lamp----- LED(light up in yellow)
- 4 Time scale ----- 30-58
- 5 Source lamp ----- LED (light up in green)
* LED flickers brightly and dimly during the counting and light up steadily after counting up.
- 6 Adjusting switch ----- digital push-switch (15 step)
- 7 External T.B ----- M3,5 screw

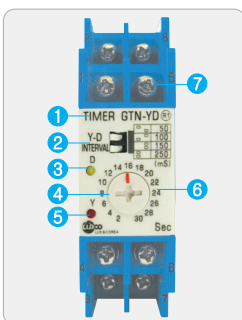
GTN-WH

RATING VOLTAGE	
* AC 100-240V 50/60Hz	
* DC 120V	
TIME RANGE	
* RUN TIME : 30sec.-58sec.	
* TEST TIME : 3sec.-5.8sec.	
* TIME SETTING VALUE : RANGE x SCALE	

(T : Setting time, Rt : Reset time - above 0.5sec.)

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
GTN-WH®(1a, 1a) WINDING HEATER		

SPECIAL TYPE



- 1 Name & Model No.----- TIMER GTN-YD
- 2 Interval time range setting----- 4 position 2 dip switch
- 3 Delta run lamp ----- LED(light up in yellow)
- 4 Time scale ----- 2-30
- 5 Y-run lamp ----- LED (light up in green)
* LED flickers brightly and dimly during the counting and light up steadily after counting up.
- 6 Adjusting switch ----- digital push-switch (15 step)
- 7 External T.B ----- M3,5 screw

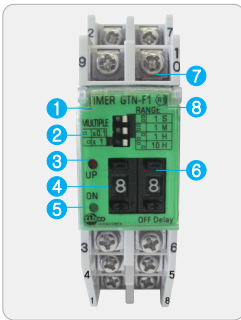
GTN-YD

RATING VOLTAGE	
* AC 100-240V 50/60Hz	
* AC 380-480V 50/60Hz	
* DC 120V	
TIME RANGE	
* Y-STARTING TIME : 2sec.-30sec.	
* Y-D INTERVAL TIME : 50mS / 100mS / 150mS / 250mS	
* TIME SETTING VALUE : RANGE x SCALE	

(T : Setting time, ΔT : Y-D INTERVAL, Rt : Reset time - above 0.5sec.)

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
GTN-YD®(1a, 1a) Y-D STARTING		

SPECIAL TYPE



- ① Name & Model No.----- TIMER GTN - F1 / F2 / M3 / M4
- ② Time multiple / range setting switch -- dip switch
- ③ Count up lamp ----- LED (light up in red)
- ④ Time scale ----- 00-99
- ⑤ Source lamp ----- LED (light up in green)
* LED flickers brightly and dimly during the counting and light up steadily after counting up.
- ⑥ Adjusting switch ----- digital push-switch
(+) increase, (-) decrease
- ⑦ External T.B ----- M3.5 screw
- ⑧ Protection cover ----- PC (clear)

GTN-F1/F2/M3/M4

RATING VOLTAGE	
* AC / DC 24V	
* AC 100-240V 50/60Hz	
* DC 120V	
TIME RANGE	
* 0.1-99sec.	
* 0.1-99min.	
* 0.1-990hrs.	

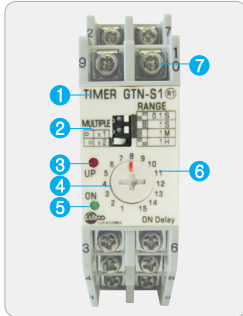
* TIME SETTING VALUE : MULTIPLE x RANGE x SCALE

[T : Setting time, Rt : Reset time - above 0.5sec.]

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
<p>GTN-F1 (2c)</p> <p>SIGNAL OFF DELAY</p>	<p>** insulation resistance (IR) of start lines must be : IR1 + IR2 >10k ohms</p>	
<p>GTN-F2 (2c)</p> <p>SIGNAL OFF DELAY</p>	<p>** insulation resistance (IR) of start lines must be : IR1 + IR2 >10k ohms</p>	
<p>GTN-M3 (1a, 2c)</p> <p>POWER ON DELAY</p>		
<p>GTN-M4 (1a, 2c)</p> <p>POWER ON INTERVAL</p>		

SLIM TIMER

SPECIAL TYPE



- 1 Name & Model No. ----- TIMER GTN - S1 / S2 / S3 / S4 / S5
TIMER GTN - SF1 / SF2 / E1 / E2 / E3 / E4
- 2 Time multiple / range setting switch - dip switch
- 3 Count up lamp ----- LED (light up in red)
- 4 Time scale ----- 1-15
- 5 Source lamp ----- LED (light up in green)
- 6 Adjusting switch ----- digital push-switch (15step)
- 7 External T.B ----- M3.5 screw

GTN - S1 / S2 / S3 / S4 / S5 / SF1 / SF2 / E1 / E2 / E3 / E4

MODEL	RATING VOLTAGE
GTN-S1-S5	* AC / DC 24V or AC 100-240V 50/60Hz
GTN-SF1 / SF2	* AC / DC 24V * AC 100-240V 50/60Hz * DC 120V
GTN-E1-E4	* DC 120V
TIME RANGE	
* 0.1-3.0sec., 1-30sec., 0.1-3.0min., 0.1-3.0hrs.,	

APPLICATION	CONNECTION DIAGRAM	TIMING FLOWCHART
GTN-S1 (1c, 1c) GTN-E1 (1c, 1c) POWER ON DELAY		
GTN-S2 (2c) GTN-E2 (2c) POWER ON DELAY		
GTN-S5 (2c) PULSE ON DELAY		
GTN-S3 (1c, 1c) GTN-E3 (1c, 1c) POWER ON INTERVAL		
GTN-S4 (2c) GTN-E4 (2c) POWER ON INTERVAL		
GTN-SF1 (2c) SIGNAL OFF DELAY GTN-SF2 (2c) SIGNALON-OFF DELAY		

** insulation resistance [IR] of start lines must be: IR1 + IR2 > 10k ohms