Wide Variety Including OFF Delay and Star-**Delta Types**

Universal AC power voltage 100 to 240V AC Solid-state CMOS circuitry ensures high accuracy Easy-to-view operation indicator DIN 48mm square panel mount adapter for snap mounting Complies with safety standards. UL/c-UL listed. Complies with EN standard

[Multi-mode Type]

Instantaneous operation at zero setting Multi-mode, and universal AC power voltage cover 96 types by one timer



Type List

Multi-Mode Type

For details, see pages 1067 to 1072.

Operation Mode		Туре	Contact	Time Range	Output	Operating Voltage	Type No.	
On Delay		GT3A-1	Delayed SPDT		240V AC, 3A	100 to 240V AC	GT3A-1AF20	
		GT3A-2	Delayed SPDT +	0.1.000.00	120V AC/	100 to 240V AC	GT3A-2AF20	
Interval ON Cycle OFF		GIJA-2	Instantaneous SPDT	0.1 sec to 180 hours	30V DC, 5A	24V AC/24V DC	GT3A-2AD24	
Cycle ON		GT3A-3	Delayed DPDT	100 110013	240V AC/	100 to 240V AC	GT3A-3AF20	
		GTSA-5	Delayed DFD1		24V DC, 5A	24V AC/24V DC	GT3A-3AD24	
ON Delay Cycle	With	GT3A-4				100 to 240V AC	GT3A-4AF20	
Signal ON/OFF Delay Signal OFF Delay	Input	GTONT				24V AC/24V DC	GT3A-4AD24	
Interval ON One Shot Cycle	With	GT3A-5	Delaved DPDT (11P)	0.1 sec to	240V AC/	100 to 240V AC	GT3A-5AF20	
Signal ON/OFF Delay Signal OFF Delay	Input	180 hours 24V DC	Delayed DFDT (TTF)	Delayed DFDT (TTF)		24V DC, 5A	24V AC/24V DC	GT3A-5AD24
One Shot One Shot ON Delay	With	GT3A-6				100 to 240V AC	GT3A-6AF20	
One Shot Signal ON/OFF Delay	Input	GT3A-0				24V AC/24V DC	GT3A-6AD24	

OFF Delay Type

For details, see pages 1073 to 1074. Time Range **Operation Mode** Туре Contact Output Operating Voltage Type No. With 250V AC/ 100 to 240V AC GT3F-1AF20 GT3F-1 Delayed SPDT 30V DC, 5A Reset Input 0.1 sec to 24V AC/24V DC GT3F-1AD24 Power OFF Delay 600 sec GT3F-2AF20 100 to 240V AC Without 250V AC/ GT3F-2 Delayed DPDT **Reset Input** 30V DC, 3A 24V AC/24V DC GT3F-2AD24

Star-Delta Type

For details, see pages 1075 to 1076.

Operation Mode	Туре	Contact	Time Range	Output	Operating Voltage	Type No.
	GT3S-1	Delayed Star: SPST-NO Delta: SPST-NO	Star: 0.05 to 100 sec Star-Delta: 0.05 sec	250V AC/		GT3S-1AF20
Star-Delta	GT3S-2	Delayed Star: SPST-NO Delta: SPST-NO Instantaneous: SPST-NO	0.1 sec 0.25 sec 0.5 sec	30V DC, 5A	100 to 240V AC	GT3S-2AF20

Twin-Timer Type

For details, see pages 1	077 to 1078.
--------------------------	--------------

						-
Operation Mode	Туре	Contact	Time Range	Output	Operating Voltage	Type No.
Serial Activation			T1: 0.1 sec to 6 hours		100 to 240V AC	GT3W-A11AF20N
Coarse/Fine Adjust-			T2: 0.1 sec to 6 hours		24V AC/24V DC	GT3W-A11AD24N
ment Setting Instantaneous			T1: 0.1 sec to 6 hours	240V AC, 3A	100 to 240V AC	GT3W-A13AF20N
Cycle GT3W Cycle Inversion Interval ON Interval ON Delay		Delayed SPDT	T2: 0.1 sec to 300 hours	120V AC/ 30V DC, 5A	24V AC/24V DC	GT3W-A13AD24N
		+ Delayed SPDT	T1: 0.1 sec to 300 hours T2: 0.1 sec to 6 hours T1: 0.1 sec to 300 hours T2: 0.1 sec to 300 hours T2: 0.1 sec to 300 hours		100 to 240V AC	GT3W-A31AF20N
					24V AC/24V DC	GT3W-A31AD24N
					100 to 240V AC	GT3W-A33AF20N
Serial Interval ON					24V AC/24V DC	GT3W-A33AD24N

Flush Silhouette

AS-Interface

GT3A-1, -2, -3

Four Selectable Operation Modes in One Timer: ON Delay, Interval ON, Cycle, Cycle ON



Type List

(1) Operation Mode	Rated Voltage	Time Ranges	Output	Contact	Type No.	
	100 to 240V AC		240V AC, 3A	Delayed SPDT	GT3A-1AF20	Relays a
A: ON Delay	100 to 240V AC	0.1 sec to 180 hours	120V AC/30V DC, 5A	Delayed SPDT +	GT3A-2AF20	Timers
B: Interval ON C: Cycle OFF	24V AC/24V DC	See Time Ranges		Instantaneous SPDT	GT3A-2AD24	
D: Cycle ON	100 to 240V AC	for details.	240V AC/24V DC, 5A	Delaved DPDT	GT3A-3AF20	Sockets
	24V AC/24V DC		(resistive load)		GT3A-3AD24	

Time Ranges

(3) Dial (2) Range	0 – 1	0 – 3	0 - 6	0 – 18
1S	0.1 sec to	0.1 sec to	0.1 sec to	0.2 sec to
	1 sec	3 sec	6 sec	18 sec
10S	0.1 sec to	0.3 sec to	0.6 sec to	1.8 sec to
	10 sec	30 sec	60 sec	180 sec
10M	6 sec to	18 sec to	36 sec to	108 sec to
	10 min	30 min	60 min	180 min
10H	6 min to	18 min to	36 min to	108 min to
	10 hours	30 hours	60 hours	180 hours

Contact Ratings

Туре		GT3A-1, GT3A-2	GT3A-3	
Rated Load		240V AC, 3A (resistive load) 120V AC/30V DC, 5A (resistive load)	240V AC/24V DC, 5A (resistive load)	
Maximu Power	Im Switching	AC: 960VA DC: 120W	AC: 1200VA DC: 120W	
Maximu Voltage	Im Switching	250V AC/150V DC		
Maximu Current	Im Switching	5A		
Maximu Frequei	im Switching	1800 operations/hour		
Minimu Load	m Applicable	5V DC, 10 mA (reference value)		
Externa Elemen	ll Protection t	Fuse 250V, 5A		
Life	Electrical	100,000 operations minimum (rated load)		
LIIG	Mechanical	20,000,000 operations m	ninimum	

General Specifications Circuit Protectors GT3A-1 Туре GT3A-2 GT3A-3 **Operation System** Solid-state CMOS circuitry Power Operation Type Multi-Mode Supplies Time Range 0.1 sec to 180 hours Pollution Degree 2 (IEC60664-1) PLCs & **Overvoltage Category** III (IEC60664-1) SmartRelay 100 to 240V AC (50/60Hz) AF20 Rated Voltage AD24 24V AC (50/60Hz)/24V DC Operator Interfaces AF20 85 to 264V AC (50/60Hz) Voltage Range AD24 20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC Reset Voltage Rated voltage 10% minimum Sensors **Operating Temperature** -10 to +50°C (no freezing) Storage/Transportation -30 to +70°C (no freezing) Temperature Control Stations Operating Humidity 35 to 85% RH (no condensation) 0 to 2000m (operation) Altitude 0 to 3000m (transportation) Explosion Reset Time 60 ms maximum . Protection Repeat Error ±0.2%, ±10 ms maximum (Note) Voltage Error ±0.2%, ±10 ms maximum (Note) References Temperature Error ±0.2%, ±10 ms maximum (Note) Setting Error ±10% maximum 100 MΩ minimum (500V DC megger) Insulation Resistance Between power and output terminals: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute **Dielectric Strength** Between contacts of the same pole: 750V AC, 1 minute (GT3A-1, 2) 1000V AC, 1 minute (GT3A-3) 10 to 55 Hz, amplitude 0.75 mm, Vibration Resistance 2 hours each in 3 directions Operating extremes: 98 m/s², Shock Resistance Damage limits: 490 m/s 3 shocks each in 6 directions Degree of Protection IP40 (timer), IP20 (socket) (IEC60529) 100V AC Power Consumption (approx.) 2.9VA 2.5VA 2.2VA 60Hz AF20 200V AC 4.7VA 4.3VA 4.0VA 60Hz AD24 (AC/DC) 1.3VA/0.5W 1.6VA/0.8W 1.8VA/0.7W Dimensions 40H 36W 72.2D mm

Weight (approx.) Note: The largest value becomes the error against a preset value depending on the time range

73q

63a



79q

	Operation Chart				
Type No.	GT3A-1	GT3A-2	GT3A-3		
Contact	Delayed SPDT	Delayed SPDT + Instantaneous SPDT	Delayed DPDT		
Internal Connection Operation Mode Selection	6 5 7(~)/(+) 8 2(~)/(-)	3 4 6 5 7(~)/(+)	3 4 6 5 7(~)/(+) 1 8 2(~)/(-)		
On Delay			Terrinel		
MODE A Set timer for desired delay, apply power to coil. Contacts transfer after preset time has elapsed, and remain in transferred position until timer is reset. Reset occurs with removal of power.	Item Terminal No. Operation Power 2-7 Set Time Delayed (NC) Image: Contact (NC) Contact 6-8 Image: Contact (NC) Indicator OUT Image: Contact (NC)	Item Terminal No. Operation Power 2-7 Set Time Delayed 5-8	Item Terminal No. Operation Power 2-7		
	<u> </u>				
Interval ON MODE B Set timer for desired delay, apply power to coil. Contacts	Item Terminal No. Operation Power 2-7	Item Terminal No. Operation Power 2-7	Item Terminal No. Operation Power 2-7		
transfer immediately, and return to original position after preset time has elapsed. Reset occurs with removal of power.		(NO) Indicator OUT			
Cycle OFF	Tarminal		Terminal		
(OFF start) MODE C C Set timer for desired delay, apply power to coil. First transfer of contacts occurs after preset delay has elapsed, after the next elapse of preset delay contacts return to original position. The timer now cycles between on and off as long as power is applied. The ratio is 1:1. Time Off = Time On Cycle ON	Item Terminal No. Operation Power 2-7 Set Time Set Time Object Delayed (NC) 6-8 (NO) Image: Contact Indicator POWER Image: Contact OUT Image: Contact OUT	Item Terminal No. Operation Power 2-7 Set Time Delayed Contact 5-8 Image: Contact Instan- taneous 4-1 Image: Contact Instan- taneous 3-1 Image: Contact Indicator POWER Image: Contact OUT OUT Image: Contact	Item Terminal No. Operation Power 2-7 Set Time 5-8,4-1 Set Contact 6-8,3-1 Set Contact 6-8,3-1 Indicator OUT OUT		
(ON start) MODE UNCLOSE Functions in same manner as Mode C, with the exception that first transfer of contacts occurs as soon as power is applied. The ratio is 1:1. Time Off = Time On	Item Terminal No. Operation Power 2-7 Set Time Delayed (NC) Image: Contact of the set of th	Item Terminal No. Operation Power 2-7 Set Time	Item Terminal No. Operation Power 2-7 5-8,4-1 Delayed (NC) (NO) Contact 6-8,3-1 (NO) Indicator OUT (NO)		

GT3A-4, -5, -6 Flush Silhouette Four Selectable Operation Modes with Start, Gate, and Reset Inputs for External Control Control POWER Indicator Units (flashes during time POWER OUT Indicator delay period) Display Lights Setting Knob Display Units (2) Time Range Selector 1S, 10S, 10M, 10H Safety MA Products GT3A Terminal Blocks (1) Operation Mode Selector (3) Dial Selector A, B, C, D 0-1, 0-3, 0-6, 0-18 Comm. Terminals Type List AS-Interface (1) Operation Mode Rated Voltage Code Time Ranges Output Contact Input Type No. 100 to 240V AC GT3A-4AF20 A: ON Delay C: Signal ON Delay B: Cycle OFF D: Signal OFF Delay Relays & Timers 24V AC/24V DC GT3A-4AD24 0.1 sec to 180 240V AC, 5A Start 100 to 240V AC GT3A-5AF20 A: Interval ON C: Signal ON/OFF Delay B: One-Shot Cycle, D: Signal OFF Delay Delayed DPDT hours 24V DC, 5A Reset See Time Ranges 24V AC/24V DC GT3A-5AD24 (resistive load) Gate Sockets for details 100 to 240V AC GT3A-6AF20 B: One-Shot ON Delay D: Signal ON/OFF Delay A: One-Shot C: One-Shot 24V AC/24V DC Circuit GT3A-6AD24 Protectors **General Specifications Time Ranges** Power

(3) Dial (2) Range	0 – 1	0 – 3	0 - 6	0 - 18
1S	0.1 sec to	0.1 sec to	0.1 sec to	0.2 sec to
	1 sec	3 sec	6 sec	18 sec
10S	0.1 sec to	0.3 sec to	0.6 sec to	1.8 sec to
	10 sec	30 sec	60 sec	180 sec
10M	6 sec to	18 sec to	36 sec to	108 sec to
	10 min	30 min	60 min	180 min
10H	6 min to	18 min to	36 min to	108 min to
	10 hours	30 hours	60 hours	180 hours

Contact Ratings

Rated Load		240V AC/24V DC, 5A (resistive load)	
Maximum Switching Power		AC: 1200VA DC: 120W	
Maximum S	witching Voltage	250V AC/150V DC	
Maximum Switching Current		5A	
Maximum S	witching Frequency	1800 operations/hour	
Minimum A	oplicable Load	5V DC, 10 mA (reference value)	
External Pro	otection Element	Fuse 250V, 5A	
Life	Electrical	100,000 operations minimum (rated load)	
	Mechanical	20,000,000 operations minimum	

Input Specifications

Start Input	The start input initiates delayed operation and controls output status.	No-voltage contact inputs and NPN open collector transistor inputs are applica-
Reset Input	When the reset input goes on (L level), the timer is reset to the original time (time at power-on).	ble. 24V DC, 1 mA maximum Input response time:
Gate Input	The time delay operation is sus- pended while the gate input is on (L level).	50 ms maximum

General Sp	Jechn	Gations	Power	
Operation System	n	Solid-state CMOS circuitry	Supplies	
Operation Type		Multi-mode with inputs (11 pins)		
Time Range		0.1 sec to 180 hours	PLCs & SmartRelay	
Pollution Degree		2 (IEC60664-1)	Onlarthelay	
Overvoltage Category		III (IEC60664-1)		
Data d Malta an	AF20	100 to 240V AC (50/60Hz)	Operator Interfaces	
Rated Voltage	AD24	24V AC (50/60Hz)/24V DC		
Voltage Range AF20 AD24		85 to 264V AC (50/60Hz)	1	
		20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC	Sensors	
Reset Voltage		Rated voltage 10% minimum		
Operating Tempe	rature	-10 to +50°C (no freezing)	Control	
Storage/Transpor Temperature	rtation	-30 to +70°C (no freezing)	Stations	
Operating Humid	ity	35 to 85% RH (no condensation)	Explosion	
Altitude		0 to 2000m (operation) 0 to 3000m (transportation)	Protection	
Reset Time		60 ms maximum		
Repeat Error		±0.2%, ±10 ms (Note)	References	
Voltage Error		±0.2%, ±10 ms (Note)		
Temperature Erro	or	±0.2%, ±10 ms (Note)		
Setting Error		±10% maximum		
Insulation Resista	ance	100MΩ minimum (500V DC megger)	1	
Dielectric Strength		Between power and output terminals: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute		
Vibration Resistance		10 to 55 Hz, amplitude 0.75 mm, 2 hours each in 3 directions		
Shock Resistance		Operating extremes: 98 m/s ² Damage limits: 490 m/s ² 3 shocks each in 6 directions		
Degree of Protection		IP40 (timer), IP20 (socket) (IEC60529)		
Power Con- sumption (Ap-		2.2VA (100V AC/60Hz), 4.1VA (200V AC/60Hz)		
prox.)	AD24	1.8VA (AC)/0.7W (DC)]	
Dimensions		40H 36W 72.2D mm		
Weight (approx.)		80g		

Note: The largest value becomes the error against a preset value depending on the time range.



GT3A-4	Note: While	the gate input is on during time delay operation, the POWER indicator flashing slows down.			
		Operation Chart			
Contact	Delayed DPDT				
Internal Connection Operation Mode Selection		3 4 9 8 10 Reset T Start 1 11 2(\sim)/(-) Note: T = Set time Ta = Shorter than set time T = T' + T''			
On Delay	Item Terminal No.	Operation			
	Power 2-10				
MODE	Start 6-2 ON or L				
A	Reset 7-2 ON or L				
	Gate 5-2 ON or L				
	4-1				
Power is applied to timer at all times. Set	Delayed 8-11 (NC) Contact 3-1 (NC)	Note: While the gate input is on during time-delay operation, the POWER indicator flashing slows down.			
time for desired delay. When start input is supplied time delay starts, contacts	9-11 (NO)	indicator flashing slows down.			
transfer after preset time has elapsed. Contacts remain in transferred position	Indicator POWER				
until timer is reset.	OUT				
	Set Time	$\begin{array}{c c c c c c c c c c c c c c c c c c c $			
Cycle	Item Terminal No.	Operation			
MODE	Power 2-10				
MODE	Start 6-2 ON or L				
B	Reset 7-2 ON or L				
	Gate 5-2 ON or L				
Power is applied to timer at all times. Set	Delayed Contact 3-1 (NC) 3-1 (NO)				
timer for desired delay, initiate start input. Contacts transfer after preset time has	9-11 (NO) POWER				
elapsed and remain in transferred position until preset time elapses a second time.	Indicator				
The timer will now continue to cycle in above manner until reset applied.	Set Time				
	Set fille	΄ Τ΄			
Signal ON/OFF Delay	Item Terminal No.	Operation			
MODE	Power 2-10				
	Start 6-2 ON or L				
	Reset 7-2 ON or L				
	Gate 5-2 ON or L				
For this mode a maintained pushbutton is required for start input. Power is applied	Delayed 4-1 (NC)				
to timer at all times. Set timer for desired delay, initiate start input. Contacts will	Contact 3-1 9-11 (NO)				
transfer immediately. After preset time (with start input still present) contacts will transfer back to original position. Remove	POWER				
start signal, at this time contacts will again transfer. Contacts will transfer to original	OUT				
position after preset time. Timer is reset by initiation of reset input.	Set Time	$ \begin{vmatrix} \mathbf{x} & \mathbf{z} \\ T & T & Ta & T & Ta & Ta & Ta & Ta & $			
Signal OFF Delay	Item Terminal No.	Operation			
	Power 2-10				
MODE	Start 6-2 ON or L				
∑ <u>D</u> ∕	Reset 7-2 ON or L				
	Gate 5-2 ON or L				
	4-1 (NC)				
Power is applied to timer at all times. Set	Contact 3-1 (NO)				
timer for desired delay, initiate start input. Contacts immediately transfer. When start	9-11 (NO) POWER				
input is removed time delay starts. After preset time contacts transfer back to origi-	Indicator				
nal position. Timer is reset by initiation of reset input.					
	Set Time	T TA TA TA T' T' T"			

GT3 Series [Multi-Mode Type with Inputs (11 Pins)]

GT3A-5				
			Operation Chart	Flush Silhouette
Contact		Delayed DPDT		
			(~)/(+)	Control
Internal		0 0 0 0 0		
Internal Connection		$\downarrow \downarrow I Start = Shorter than set time$		
			= T' + T''	Display
Operation				Lights
Operation Mode Selection			1 11 2(~)/(-)	
Interval ON	Item	Terminal No.	Occurring	Display Units
			Operation	
MODE	Power	2-10		Safety
NIODE	Start	6-2 ON or L		Products
	The Reset	7-2 ON or L		
				Terminal
	Gate	5-2 ON or L		Blocks
	Delayed	4-1 8-11 (NC)		Comm.
Power is applied to timer at all times. Set timer for desired delay, initiate start input.	Contact	3-1 9-11 (NO)		Terminals
Contacts immediately transfer. After preset		POWER		
delay contacts return to original position. Timer is reset by initiation of reset input.	Indicator			AS-Interface
		OUT		
	Set Time		$\begin{vmatrix} \mathbf{a} & \mathbf{a} \\ \mathbf{T} & \mathbf{T} \\ \mathbf{T} \\ \mathbf{T} & \mathbf{T} \\ \mathbf{T} \\ \mathbf{T} \\ \mathbf{T} \\ \mathbf{T} \\ \mathbf{T} $	
	L			Relays & Timers
One-Shot Cycle	Item	Terminal No.	Operation	
	Power	2-10		Sockets
MODE				COCKETS
B	Start	6-2 ON or L		
	nd Reset	7-2 ON or L		Circuit Protectors
	Gate	5-2 ON or L		
		4-1 (NC)		Power
Power is applied to timer at all times. Set	Delayed Contact	0-11		Supplies
timer for desired delay, initiate start input. After preset time has elapsed contacts		9-11 (NO)		
will transfer. Contacts will transfer to their		POWER		PLCs & SmartRelay
original position after preset time elapses a second time. Timer is reset by initiation	Indicator	OUT		
of reset input.	Set Time			Operator
	Set Time		TTTATI T	Interfaces
Signal ON/OFF Delay				
	Item	Terminal No.	Operation	Sensors
MODE	Power	2-10		
	Start	6-2 ON or L		Control
	Reset	7-2 ON or L		Stations
	Gate	5-2 ON or L		Explosion Protection
For this mode a maintained pushbutton is	Delayed	4-1 8-11 (NC)		FIOLECTION
required for start input. Power is applied to timer at all times. Set timer for desired delay,	Contact	3-1 9-11 (NO)		
initiate start input. Contacts will transfer im- mediately. After preset time (with start input		POWER		References
still present) contacts will transfer back to	Indicator			
original position. Remove start signal, at this time contacts will again transfer. Contacts will		OUT		
transfer to original position after preset time.	Set Time		│ → → │ → → │ → → │ → → → → ↓ → → │ → → │ → → │ → → → ↓ → → → →	
Timer is reset by initiation of reset input.	L			
Signal OFF Delay	Item	Terminal No.	Operation	
	Power	2-10		
MODE				
	Start	6-2 ON or L		
	Reset	7-2 ON or L		
	Gate	5-2 ON or L		
		4-1 (NC)		
Power is applied to timer at all times. Set	Delayed Contact	3-1		
timer for desired delay, initiate start input.		9-11 (NO)		
Contacts immediately transfer. When start input is removed time delay starts.		POWER		
After preset time contacts transfer back to original position. Timer is reset by initiation	Indicator	OUT		
of reset input.	Set Time			
	Ser lille		T Ta Ta T' T' T''	
	1			



GT3 Series [Multi-Mode Type with Inputs (11 Pins)]

GT3A-6 🖂					
			Operation Chart		
Contact		Delayed DPDT			
Internal Connection Operation Mode Selection	$\begin{array}{c} 3 & 4 & 9 & 8 \\ 0 & 7 & 5 \\ 1 & 11 & 2(\sim)/(-) \end{array}$ Note: T = Set time Ta = Shorter than set time T = T' + T''				
One Shot	Item	Terminal No.	Operation		
MODE	Power Start	2-10 6-2 ON or L			
$\left \qquad \stackrel{\sim}{\ominus} \qquad \right $	Gate	7-2 ON or L 5-2 ON or L 4-1 8-11 (NC)			
Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. After preset time has elapsed contacts transfer back to original position. Reset occurs	Contact	3-1 9-11 (NO) POWER OUT			
with initiation of reset input.	Set Time	<u> </u>	Ta Ta T Ta T' T'		
One Shot ON Delay MODE	Item	Terminal No.	Operation		
	Power	2-10			
B	Start	6-2 ON or L			
	Tind Reset	7-2 ON or L			
Set timer for desired delay. When power	Gate	5-2 ON or L			
is applied preset time begins and contacts transfer after preset time has elapsed (no start input needed at this time). Start input is now supplied, this causes the contacts	Delayed Contact	4-1 8-11 (NC) 3-1 9-11 (NO)			
to transfer back to original position. Con- tacts will remain in this position for preset time, after which they will transfer again. Contacts will now remain in this position	Indicator	POWER OUT			
until: reset, start input is applied again or power is removed.	Set Time		$\begin{array}{c c c c c c c c c c c c c c c c c c c $		
One Shot	Item	Terminal No.	Operation		
	Power	2-10			
MODE	Start	6-2 ON or L			
	Reset	7-2 ON or L			
	Gate	5-2 ON or L 4-1 8-11 (NC)			
Power is applied to timer at all times. Set timer for desired delay, initiate start input. Contacts immediately transfer. After preset time has elapsed contacts transfer	Contact	3-1 9-11 (NO) POWER			
back to original position. Reset occurs with initiation of reset input.	Indicator Set Time	OUT			
	Get Time		T Ta T T' T'		
Signal ON/OFF Delay	Item	Terminal No.	Operation		
MODE	Power	2-10			
	Start	6-2 ON or L			
	Reset	7-2 ON or L 5-2 ON or L			
For this mode a maintained pushbutton is required for start input. Power is applied to timer at all times. Set timer for desired	Gate Delayed Contact	4-1 8-11 (NC) 3-1 (NO)			
delay, initiate start input. Contacts will transfer immediately. After preset time (with start input still present) contacts will		9-11 (NO) POWER			
(with start input still present) contacts will transfer back to original position. Remove start signal, at this time contacts will again	Indicator	OUT			
start signal, at this time contacts will again transfer. Contacts will transfer to original position after preset time. Timer is reset by initiation of reset input.	Set Time		T Ta		





Contact	Internal Connection	Operation Chart
GT3F-1		Item Terminal No. Operation
Delayed SPDT Output with Reset Input		Power 2-7
		Reset 4-1 Input ON or L
	(~)/(+)	Delayed (NC)
	6 5 7	Contact 6-8 (NO)
		Indicator POWER
		Set Time Tr T Ta Ts T
		Ts = 1 sec Tr = Minimum power application time 0.4 sec (time range: 180 sec or less) 1 sec (time range: 600 sec or less) When power turns on, the NO output contact goes on. When a preset time has elapsed after the power has been turned off, the NO output contact goes off. The contact is reset by turning the reset input on.
GT3F-2		Item Terminal No. Operation
Delayed DPDT Output		Power 2-7
	(~)/(+) 3 4 6 5 7 0 0 0 0 0	Delayed 5-8, 4-1
		Indicator POWER
		Set Time
	(~)/(-)	T = Set time Tr = Minimum power application time
		0.4 sec (time range: 180 sec or less) 1 sec (time range: 600 sec or less) When power turns on, the NO output contact goes on. When a preset time has elapsed after the power has been turned off, the NO output contact goes off.

Flush Silhouette

GT3S-1/GT3S-2

Star-Delta Output Mode



Type List

Type List						
(1) Operation Mode	Rated Voltage	Time Range	Output	Contact	Type No.]
		Star: 0.05 to 100 sec Star-Delta switching time		Star: Delayed SPST-NO Delta: Delayed SPST-NO	GT3S-1AF20	Relays &
Star-Delta	Star-Delta 100 to 240V AC	0.05 sec 0.10 sec 0.25 sec 0.50 sec	250V AC/ 30V DC, 5A	Star: Delayed SPST-NO		Timers
			(resistive load)	Delta: Delayed SPST-NO Instantaneous SPST-NO	GT3S-2AF20	Sockets

Time Ranges

①Star [Dial Selector	② Star-Delta Switching Time Selector		
Dial	Time Range	Indication	Time	
0 – 5	0.05 sec - 5 sec	0.05	0.05 sec	
0 - 10	0.1 sec - 10 sec	0.1	0.1 sec	
0 - 50	0.5 sec - 50 sec	0.25	0.25 sec	
0 - 100	1 sec - 100 sec	0.5	0.5 sec	

Contact Ratings

Rated Load		250V AC/30V DC, 5A (resistive load)		
Maximum S	Switching Power	AC: 1250VA DC: 150W		
Maximum S	Switching Voltage	265V AC/125V DC		
Maximum Switching Current		5A		
Maximum Switching Frequency		1800 operations/hour		
Minimum A	pplicable Load	5V DC, 100mA (reference value)		
External Pr	otection Element	Fuse 250V, 5A		
Life	Electrical	100,000 operations minimum (rated load)		
	Mechanical	20,000,000 operations minimum		

Operation System	Solid-state CMOS cir	cuitry	Protectors	
Operation Type	Star-delta		1	
Time Range		Star side: 0.05 sec to 100 sec Star delta switching time: 0.05, 0.1, 0.25, 0.5 sec		
Pollution Degree	2 (IEC60664-1)	5 , , ,		
Overvoltage Category	III (IEC60664-1)		PLCs &	
Rated Voltage	100 to 240V AC (50/6	0Hz)	SmartRelay	
Voltage Range	85 to 264V AC (50/60	IHz)		
Reset Voltage	Rated Voltage 10%	minimum	Operator	
Operating Temperature	-10 to +50°C (no free	zing)	Interfaces	
Storage/Transportation Temperature	-30 to +70°C (no free	zing)	Sensors	
Operating Humidity	35 to 85% RH (no cor	ndensation)		
Altitude	0 to 2000m (operation 0 to 3000m (transport		Control	
Reset Time	500 ms maximum		Stations	
Repeat Error	±0.2%, ±10 ms (Note)			
Voltage Error	±0.2%, ±30 ms (Note)	±0.2%, ±30 ms (Note)		
Temperature Error	±0.2%, ±10 ms (Note)	±0.2%, ±10 ms (Note)		
Setting Error	±10% maximum			
Insulation Resistance	100 MΩ minimum (50	References		
Dielectric Strength	Between power and c 2000V AC, 1 minute Between contacts of 2000V AC, 1 minute Between contacts of 1000V AC, 1 minute	different poles:		
Vibration Resistance	10 to 55 Hz, amplitud 2 hours each in 3 dire	ections		
Shock Resistance	Operating extremes: Damage limits: 490 m 3 shocks each in 6 di	1/s ² ,		
Degree of Protection	IP40 (timer), IP20 (so			
	GT3S-1AF20	GT3S-2AF20		
Power Consumption (approx.)	2.3VA (100V AC/60Hz)	2.3VA (100V AC/60Hz)		
(app:07.)	4.0VA (200V AC/60Hz)	3.8VA (200V AC/60Hz)		
Dimensions	40H 36W 72.2D n	nm	1	
Weight (approx.)	GT3S-1AF20	GT3S-2AF20	_	
	68g	75g		

Note: The largest value becomes the error against a preset value depending on the time range.



Contact	Internal Connection	Operation Chart
GT3S-1 Star : Delayed SPST-NO Delta: Delayed SPST-NO		Item Terminal No. Operation Power 2-7 Image: Contact of the star delayed contact of the star delayeed contact of the star delaye
GT3S-2		star contact (T ₁). The delta contact goes on after star-delta switching time (T ₂) and goes off when power is turned off. T ₁ = Star ON time (Set Time), T ₂ = Star-delta swithing time, T ₃ = Star ON time
Star : Delayed SPST-NO Delta: Delayed SPST-NO Instantaneous SPST-NO	$\begin{array}{c} 3 & 5 & 6 & 7 \\ 0 & & & & & \\ 1 & 8 & 2 \\ (-) \end{array}$	Item Terminal No. Operation Power 2.7 Star 8-5 Delayed (NO) Contact (NO) Delta 8-6 Delayed 3-1 (NO) 9 Instantaneous 3-1 Contact (NO) Delta 9 Delta 9
		Set Time T

GT3W-A11, -A13, -A31, A33 Flush Silhouette Multi-range Twin-Timer type with 8 operation modes Control Units OUT Indicators Display Lights • • POWER Indicator Setting Knob (T₂) Display Units T2 Time Range Selector Mode Selector -Safety Products RANGE Setting Knob (T₁) **T1** Terminal GT3W Blocks Comm. Terminals **Type List** AS-Interface **Time Ranges** Rated Voltage Type No. (1) Operation Mode T₁ Τ, GT3W-A11AF20N 100 to 240V AC Relays & Timers 0.1 sec to 6 hours Sequential Start 24V AC/24V DC GT3W-A11AD24N Coarse/Fine Adjustment 0.1 sec to 6 hours 100 to 240V AC GT3W-A13AF20N Instantaneous Cycle 0.1 sec to 300 hours 24V AC/24V DC GT3W-A13AD24N Cycle Cycle Inversion Sockets 100 to 240V AC GT3W-A31AF20N 0.1 sec to 6 hours Interval ON 24V AC/24V DC GT3W-A31AD24N Interval ON Delay 0.1 sec to 300 hours 100 to 240V AC GT3W-A33AF20N Circuit Sequential Interval 0.1 sec to 300 hours Protectors 24V AC/24V DC GT3W-A33AD24N Power

Time Ranges

0.1 sec to 6 hours			0.1 sec to 300 hours		
Time Range Selector	Scale	Time Range	Time Range Selector	Scale	Time Range
1S		0.1 sec to 1 sec	1S		0.1 sec to 3 sec
10S	0 – 1	0.3 sec to 10 sec	1M	0 – 3	3.8 sec to 3 min
10M		15 sec to 10 min	1H		3.8 min to 3 hours
1S	0 - 6	0.1 sec to 6 sec	1S		0.6 sec to 30 sec
10S		1.3 sec to 60 sec	1M		38 sec to 30 min
1M		7.5 sec to 1 min	1H	0 – 30	38 min to 30 hours
10M		75 sec to 60 min	10H		6.3 hours to
1H		7.5 min to 6 hours	1011		300 hours

Contact Ratings

Rated Load		240V AC, 3A (resistive load) 120V AC/ 30V DC, 5A (resistive load)	
Maximum Switching Power		AC: 960VA DC: 120W	
Maximum S	witching Voltage	250V AC/150V DC	
Maximum Switching Current		5A	
Maximum Switching Frequency		1800 operations/hour	
Minimum Applicable Load		5V DC, 10mA (reference value)	
External Pro	otection Element	Fuse 250V, 5A	
Life		100,000 operations minimum (rated load)	
	Mechanical	20,000,000 operations minimum	

General Specifications

General S	pecili	Icalions	Supplies	
Operation System		Solid-state CMOS circuitry	Supplies	
Operation Type		Multi-Mode		
Time Range		0.1 sec to 300 hours	PLCs & SmartRelay	
Pollution Degree		2 (IEC60664-1)		
Overvoltage Ca	itegory	III (IEC60664-1)	Operator	
Rated	AF20	100 to 240V AC (50/60Hz)	Interfaces	
Range	AD24	24V AC (50/60Hz)/ 24V DC		
Voltage	AF20	85 to 264V AC (50/60Hz)		
Range	AD24	20.4 to 26.4V AC (50/60Hz)/21.6 to 26.4V DC	Sensors	
Reset Voltage		Rated voltage 10% minimum		
Operating Temp	perature	-10 to +50°C (no freezing)	Control	
Storage/Transp Temperature	ortation	-30 to +70°C (no freezing)	Stations	
Operating Hum	idity	35 to 85% RH (no condensation)	Explosion	
Altitude		0 to 2000m (operation) 0 to 3000m (transportation)	Protection	
Reset Time		60 ms maximum	References	
Repeat Error		±0.2%, ±10 ms (Note)		
Voltage Error		±0.2%, ±10 ms (Note)		
Temperature Error		±0.2%, ±10 ms (Note)		
Setting Error		±10% maximum		
Insulation Resis	stance	100 MΩ minimum (500V DC megger)		
Dielectric Strength		Between power and output terminals: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute Between contacts of the same pole: 750V AC, 1 minute		
Vibration Resistance		10 to 55Hz, amplitude 0.75 mm, 2 hours each in 3 directions		
Shock Resistance		Operating extremes: 98 m/s ² Damage limits: 490 m/s ² 3 shocks each in 6 directions		
Degree of Prote	ection	IP40 (timer), IP20 (socket) (IEC60529)		
Power AF20		2.3VA (100V AC /60Hz) 4.6VA (200V AC /60Hz)		
(approx.)	AD24	1.8VA (AC)/0.9W (DC)		
Dimensions		40H 36W 70.0D mm		
Weight (approx	.)	73g		

Note: The largest value becomes the error against a preset value depend-ing on the time range.



	Operation Chart		Operation Chart
Contact	Delayed SPDT + Delayed SPDT	Contact	Delayed SPDT + Delayed SPDT
Internal Connection Mode Selection Sequential Start	3 4 6 5 7(-)/(+) 1 8 2(-)/(-) 1 8 2(-)/(-)	Internal Connection Mode Selection Cycle Inversion	3 4 6 5 7(~)/(+) 1 8 2(~)/(-) Item Terminal No. Operation Description Power 2-7 Image: Comparison of the second
A	Delayed Contact 1-4 (NC) ON after T1 1-3 (NO) ON after T1 Delayed Contact 6-8 (NO) ON after T1 Indicator OUT1 OUT1 OUT2 OUT2 OUT2 Set Time T1 T2	E	Delayed Contact 1-4 (NC) ON during T1 OFF during T2 Delayed Contact 5-8 (NC) ON during T1 OFF during T2 Delayed Contact 6-8 (NC) ON during T1 OFF during T2 Indicator OUT1 OFF during T2 Set Time T1 T2
Coarse/		Interval	
Fine Adjust- ment B	Item Terminal No. Operation Description Power 2-7	F	Item Terminal No. Operation Description Power 2-7
	Contact 1-3 N ON after T1 + T2 Polayed (NO) ON after T1 + T2 Delayed (NO) ON after T1 + T2 Contact 6-8 ON after T1 + T2 Indicator OUT1 OUT2 Set Time Image: T1 T2		Contact 1-3 (NO) ON during T1 Delayed 5-8 ON after T1, during T2 Contact 6-8 ON after T1, during T2 Indicator OUT1 OUT2 Set Time T1 T2
Instan-		Interval	
cycle	Item Terminal No. Operation Description Power 2-7 Instantaneous ON Instantaneous ON Delayed Contact 1-3 (NO) Instantaneous ON OFF during T1 ON during T2 Delayed Contact 6-8 Ry2 OUT1 OFF during T1 OUT2 OFF during T2 Indicator OUT1 Instantaneous Instantaneous Instantaneous Set Time T1 T2 Instantaneous Instantaneous	ON Delay	Item Terminal No. Operation Description Power 2-7 Image: Contact (NC) Im
Cycle		Sequential	
D	Item Terminal No. Operation Description Power 2-7	Interval H	Item Terminal No. Operation Description Power 2-7



Applicable Sockets & Hold-Down Springs (Optional)

DIN Rail Moulit Socket					Sinouelle	
	Item	Type No.	Ordering Type No.	Package Quantity	Remarks	1
Socket		SR2P-05A	SR2P-05A	1		Control
	8-Pin Screw Terminal	SR2P-06A	SR2P-06A	1		Units
		SR2P-05C	SR2P-05C	1	Finger-safe type	Dianlau
	11-Pin Screw Terminal	SR3P-05A	SR3P-05A	1		Display Lights
		SR3P-06A	SR3P-06A	1		
		SR3P-05C	SR3P-05C	1	Finger-safe type	Display
Hold-Down Spring		SFA-202	SFA-202PN20	10 sets (20 pcs)	For SR2P-06A/SR3P-06A (2 pcs/set)	Units
		SFA-203	SFA-203PN20	10 sets (20 pcs)	For SR3P-05A (2 pcs/set)	Safety Products

Note: All are UL recognized, CSA certified, and TÜV approved. SR2P-06A





SR3P-06A

SFA-202 (2 pcs/set)

SFA-203 (2 pcs/set)

Terminal Blocks

Flush Silhouette

Comm. Terminals

AS-Interface

Circuit Protectors

Power Supplies

PLCs & SmartRelay

Operator

Interfaces

Sensors

Control Stations

Panel Mount Socket

Item		Type No.	Ordering Type No.	Package Quantity	Remarks	Relays Timers
Socket	8-Pin Solder Terminal	SR2P-511	SR2P-511	1		
	11-Pin Solder Terminal	SR3P-511	SR3P-511	1		Socket
Hold-Down Spring		SFA-402	SFA-402PN10	10	For SR2P-511/SR3P-511	

Note: SR2P-511 and SR3P-511 are UL recognized and CSA certified. SR2P-511 SR3P-511 SFA-402







Panel Mount Adapter and wiring Socket Adapter

		_	Package Quantity: 1
Item			Type No.
DIN 48mm Square Panel Mount Adapter		Color: Gray	RTB-G01
		Color: Beige	RTB-M01
		Color: Black	RTB-B01
	8-Pin Solder	Terminal	SR6P-S08
Wiring Socket	8-Pin Screw	Terminal	SR6P-M08G
Adapter	11-Pin Solder	Terminal	SR6P-S11
/	11-Pin Screw	Terminal	SR6P-M11G

Finger-safe 11-pin screw wiring socket adapter (Type No.: SR6P-C11) is also available.

Installation of Hold-Down Springs







(Panel Mount Socket) Hold-Down Spring SFA-402

(8-pin Wiring Socket

(8-pin Screw Wiring

Socket Adapter)

SR6P-M08G

Adapter)

SR6P-S08

(11-pin Wiring Socket Adapter) SR6P-S11



SR6P-M11G



(11-pin Screw Wiring Socket Adapter)





Explosion Protection

References

8-Pin Socket SB2P-511 SR2P-70

Note: Once installed into the socket, the hold-down springs cannot be removed.



GT3 Series Multi-function Timers [All]

Dimensions

When Using DIN Rail Mount Socket (SR2P-06A Socket) GT3A-1, -2, -3/GT3F/GT3S (8-pin)



Note 1: For SR2P-05A: 105.5 max. For SR2P-05C: 107 max. Note 2: For SR2P-05A: 101.5 max. For SR2P-05C: 103 max.

GT3W



Note 3: For SR2P-05A: 103.1 max For SR2P-05C: 104.6 max. Note 4: For SR2P-05A: 99.1 max. For SR2P-05C: 100.6 max.

[Internal Connections]



GT3A-4, -5, -6 (11-pin)

(SR3P-05A Socket)



(SR3P-05C Socket)



(SR3P-06A Socket)



Calculate the dimensions for mounting, referring to the diagrams on pages 1109 and 1100 for SR2P-05U, SR2P-05C, and SR3P-05C.

When Using Panel Mount Socket GT3A-1, -2, -3/GT3F/GT3S/GT3W (8-pin) (SR2P-511 Socket)



GT3A-4, -5, -6 (SR3P-511 Socket)



All dimensions in mm.







° 2(~)/(−)

45

45

All GT3 Series

When using DIN 48mm-square Panel Mount Adapter

(For 8-pin solder wiring socket adapter: SR6P-S08 and 11-pin solder wiring socket adapter: SR6P-S11)





Tolerance: +0.5 to 0 N: No. of timers mounted

Horizontal Close Mounting 48N--3

(8-pin Screw Terminal Wiring Socket Adapter: SR6P-M08G)

8-M3.5 Terminal Screw Panel Thickness: 0.8 to 5 mm 44.6 ৾ৡ৾৾৾ৠৠ৾৾ৠ৾ 5.6 min. 3.5 ma ø3.6 min. 30.4 4 ÷ 🏀 🗖 6.9 max ÷* 80.5

28

(11-pin Screw Terminal Wiring Socket Adapter: SR6P-M11G)

11-M3.5 Terminal Screw 45 16.7 ⅌⅌⅌⅌ £Ω ПТ 30.5 8.5



(Finger-safe 11-pin Screw Terminal Wiring Socket Adapter: SR6P-C11)



Finger-safe structure complies with VDĚ 0106 T.100.

Flush Silhouette

Control Units

Display Lights

Display Units

Safety Products

Terminal Blocks

Comm. Terminals

AS-Interface

Relays 8 Timers

Sockets

Circuit Protectors

Power Supplies

PLCs & SmartRelay

Operator Interfaces

Sensors

Control Stations

Explosion Protection

All dimensions in mm.

References

Safety Precautions

Be sure to turn off power before mounting, removal, wiring, maintenance and inspection. Otherwise, electric shock or fire may occur.

Be sure to use timers within rated specification values. Otherwise electric shock or fire may occur.

Instructions

Mode Setting

GT3A only

The operation mode can be selected from A, B, C, and D modes using the Operation Mode Selector. The operation mode is changed from A to B, C, and D in turn by turning the Operation Mode Selector clockwise using a flat screwdriver 4 mm wide maximum and the selected mode is displayed in the window. Since this selector does not turn infinitely, turn the selector clockwise when Mode A is displayed and counterclockwise when Mode D is displayed.



Mode Code and Operation Mode

Type No. MODE Code	GT3A-1, -2, -3	GT3A-4	GT3A-5	GT3A-6
A	ON Delay	ON Delay	Interval ON	One-Shot
В	Interval ON	Cycle	One Shot Cycle	One-Shot ON Delay
С	Cycle	Signal ON/ OFF Delay	Signal ON/ OFF Delay	One-Shot
D	Cycle ON	Signal OFF Delay	Signal OFF Delay	Signal ON/ OFF Delay

Be sure to use wires to meet voltage and current requirements and tighten M3.5 terminal screws to a torque of 1.0 to 1.3 N·m. Be sure to solder the terminals correctly. Loose terminal screws or incomplete soldering may cause abnormal heat and fire.

Time Range Setting

The time range is calibrated at its maximum time scale, therefore, it is desirable to use the timer at a setting as close to its maximum time scale as possible for accurate time delay. For a more accurate time delay, adjust the setting knob by measuring the operating time before application.

1. GT3A (Multi-Mode Analog Setting Type)

Time range can be selected from 1S, 10S, 10M, and 10H by turning the Time Range Selector with a flat screwdriver 4 mm wide maximum. The four different ranges of 0 to 1, 0 to 3, 0 to 6, and 0 to 18 are displayed in the six windows by turning the Dial Selector, allowing for selecting the best suited scale. Since the selectors do not turn infinitely, turn the selectors clockwise when 1S or 0-1 is displayed and counterclockwise when 10H or 0-18 is displayed.

Time Range Determined by Time Range Selector and Dial Selector

Dial Selector Time Range	0 – 1	0 - 3	0 - 6	0 – 18
1S	0.1 sec to	0.1 sec to	0.1 sec to	0.2 sec to
	1 sec	3 sec	6 sec	18 sec
10S	0.1 sec to	0.3 sec to	0.6 sec to	1.8 sec to
	10 sec	30 sec	60 sec	180 sec
10M	6 sec to	18 sec to	36 sec to 60	108 sec to
	10 min	30 min	min	180 min
10H	6 min to	18 min to 30	36 min to 60	108 min to
	10 hours	hours	hours	180 hours

The set time is selected by turning the setting knob.

[Setting Examples]

When the setting knob is set at 1.5, with dial 0-3 and time range 10S selected, then the set time is 15 sec $(1.5 \ 10S)$.

When the setting knob is set at 0.2, with dial 0-1 and time range 10H selected, then the set time is 2 hours (0.2 $\,$ 10H).

2. GT3F (OFF Delay Type)

The time range of GT3F-1 and GT3F-2 can be selected between 1S and 10S with the Time Range Selector by using a flat screw driver. The selected time range (0-1, 0-3, 0-18, or 0-60) is displayed in the six windows of the Setting Knob by turning Dial Selector which allows to set the scale. Note that the switches do not turn infinitely.

Time Range Determined by Time Range Selector and Dial Selector

(1) Dial (2) Range	0 – 1	0 - 3	0 - 18	0 - 60
1S	0.1 sec to	0.1 sec to	0.2 sec to	0.6 sec to
	1 sec	3 sec	18 sec	60 sec
10S	0.1 sec to	0.3 sec to	1.8 sec to	6 sec to
	10 sec	30 sec	180 sec	600 sec

The set time is selected by turning the Setting Knob.

[Setting Examples]

When the setting knob is set at 2.5, with dial 0-3 and range 1S selected, then the set time is 2.5 sec (2.5 1S).

When the setting knob is set at 15, with dial 0-18 and range 10S selected, then the set time is 150 sec (15 $\,$ 10S).

3. GT3S (Star-Delta Type)



The scale range on the star side can be selected from four different ranges of 0 to 5, 0 to 10, 0 to 50, and 0 to 100 displayed in the six windows by turning the Star Dial Selector. Note that the selectors does not turn infinitely.

Time Range Determined by Time Range Selector and Dial Selector

Star D	ial Selector	Star-Delta Switching Time Selector		
Dial	Time Range	Indication	Time	
0 – 5	0.05 sec - 5 sec	0.05	0.05 sec	
0 - 10	0.1 sec - 10 sec	0.1	0.1 sec	
0 - 50	0.3 sec - 50 sec	0.25	0.25 sec	
0 - 100	1 sec - 100 sec	0.5	0.5 sec	

The Star ON time is selected by turning the Setting Knob.

[Setting Examples]

If the setting knob is set at 8, with Star Dial Selector 0-10 and Star-Delta switching time 0.1S selected, the Star ON time (T_1) is 8 sec and the Star-Delta switching time (T_2) is 0.1 sec.

4. GT3W [Twin-Timer Type]

Use a flat screwdriver with a diameter of 4 mm maximum to turn Time Range Selector and gain time range as shown in the table below. Note that the selectors do not turn infinitely.

Time Range Determined by Time Range Selector and Dial Selector

0.	1 sec to 6	6 hours	0.1 sec to 300 hours		
Time Range Selector	Scale	Time Range	Time Range Selector	Scale	Time Range
1S		0.1 sec to 1 sec	1S		0.1 sec to 3 sec
10S	0 – 1	0.3 sec to 10 sec	1M	0 – 3	3.8 sec to 3 min
10M		15 sec to 10 min	1H		3.8 min to 3 hours
1S		0.1 sec to 6 sec	1S		0.6 sec to 30 sec
10S		1.3 sec to 60 sec	1M		38 sec to 30 min
1M	0 - 6	7.5 sec to 1 min	1H	0 - 30	38 min to 30 hours
10M		75 sec to 60 min	10H		6.3 hours to
1H		7.5 min to 6 hours	IЛ		300 hours

Note: No blank time range can be set.



Selector Setting

Use a flat screwdriver with a diameter of 4 mm maximum to turn the selector. Turn the selector until it clicks. Otherwise, malfunction may occur. Also, do not rotate the selector forcibly since the selector does not turn infinitely.

Since changing the setting during operation may cause malfunction, turn power off before changing the setting.

Power

Since DC types have a polarity in their power supply connection, connect the power according to wiring diagram.

Since AC type GT3A, GT3Š, and GT3W comprise a capacitive load, the SSR dielectric strength should be two or more times as large as the power voltage when switching the timer power using an SSR.

Storage temperature should range from -25° C to $+80^{\circ}$ C. If the product has been stored at a temperature below -10° C, leave the product at room temperatures for more than 3 hours before using.

Do not remove the housing.

Terminals

Flush Silhouette

Control Units

Display Lights

Display Units

Safety Products

Relays & Timers

Circuit Protectors

Sockets

Power Supplies

PLCs & SmartRelay

Operator Interfaces

Sensors

Control Stations

Explosion Protection

References

Wiring

The GT3F, consisting of a high-impedance circuit, may not be reset due to the influence of an inductive voltage or residual voltage caused by a leakage current. In not reset, connect an RC filter or bleeder resistor between power terminals so that the voltage between power terminals can be reduced to less than 15% of the rated voltage.

Inputs of GT3A and GT3F

To avoid electric shock, do not touch the input signal terminal during power voltage application.

When connecting the input signal terminals of two or more GT3A timers to the same contact or transistor, the input terminals of the same number should be connected. (Connect Terminals No. 2 in common.)

Never apply the input signals to two or more GT3F timers using the same contact or transistor.



In a transistor circuit for controlling input signals with its primary and secondary power circuits isolated, do not ground the secondary circuit.



Do not connect input signal terminals of the GT3A timer to other terminals than No. 2. Never apply voltage to input signal terminals. Otherwise, the internal circuit may be damaged.



Do not connect input signal terminals of the GT3F timer to other terminals than No. 2. Never apply voltage to input signal terminals. Otherwise, the internal circuit may be damaged.

Input signal lines must be made as short as possible and installed away from power cables and power lines. Shielded wires or a separate conduit should be used for input wiring.

For contact input, use reliable gold-plated contacts to make sure that the residual voltage is less than 1V when the contacts are closed.



For transistor input, use transistors with following specifications; V_{CE} = 40V, V_{CES} = 1V or less, I_C = 50mA or more, I_{CBO} = 50 μ A or less. The resistance should be less than 1k Ω when the transistor is on. When the output transistor switches on, a signal is inputted to the timer.



GT3A

Transistor output equipment such as proximity switches and photoelectric switches can input signals if they are voltage/current output type, power voltage ranges from 18 to 30V, and residual voltage is 1V. When the signal voltage switches from H to L, a signal is inputted to the timer.



GT3F

Do not input signals using transistor output equipment of a voltage/current output type. Otherwise, the internal circuit may be damaged.

Minimum Power Application Time

If the power application time to the GT3F is shorter than the minimum power application time, the output relay may not operate or the timer may operate faster than the preset time.

Time Accuracy

Repeat Error

This indicates variance of operation time when operation is repeated under the same conditions. The variance is calculated from the following formula and the measurements should be done 5 times at least.

= ± $\frac{1}{2}$ Max. measured value — Min. measured value 100 (%) Maximum scale value

Voltage Error

This indicates the variance of operation time when the voltage at operation current varies within allowable voltage variance.



Tv: Average of measured operation time values at voltage V Tr: Average of measured operation time values at the raged voltage

Temperature Error

This indicates the influence caused by the change in temperature during operation within operating temperature. This is shown with the variance of operation time.

$$=\pm \frac{Tt - T_{20}}{T_{20}}$$
 [] 100 (%)

Tt: Average of operation times at temperature t

T₂₀: Average of operation times at reference temperature (20°C)

Setting Error

This indicates the gap between actual operation time and that on scale. Calculated from below formula, this is measured at any point but more than one-third of the maximum scale value.

= ± Average of measured values - Set value Maximum scale value

Load Current

The rated current of the contact (or control output) should not be exceeded. Especially for inductive, capacitive, and incandescent lamp loads, the inrush current as large as a few to several tens times the rated current may cause welded contacts and other troubles. The amount of inrush current as well as steady-state current must be taken into consideration.

Contact Protection

Switching an inductive load generates a counter-electromotive force in the coil. The counter emf will cause arcing, which may shorten the contact life. Application of a protection circuit is recommended for contact protection.

Rest Time

When turning power off after time-out or during operation, allow a rest time longer than the reset time to restart. (Each model has a different reset time.)

Continuous Energizing

Continuous energizing for a long period of time may damage the electrical characteristics of the timer because of internal heating. Use an additional relay to the output circuit and refrain from continuous energizing of the timer.

Dielectric Strength Test

When performing an insulation resistance or dielectric-strength test on control panels containing timers, make sure that the dielectric strength of the timer is not exceeded. In case the dielectric strength is exceeded, remove the timers from the panels.

Operating Environment

Temperature and Humidity

Use the timer within the operating temperature and operating humidity ranges and prevent freezing and condensation. After storing below the operation temperature, leave the timer at room temperature for a sufficient period of time before use.

Environment

Prevent a corrosive gas such as sulfurous or ammonia gas, organic solvents (alcohol, benzine, thinner, etc.), strong alkaline substances or strong acids from touching to the timer, and do not use the timer in such an environment. Keep the timer from water splashes or steam.

Vibration and Shock

Since excessive vibrations or shocks cause the output contacts to open, the timer should be used within the operating extremes of vibration and shock resistance. Use of hold-down springs is recommended for secure mounting on sockets.

Noise and Static Charge

Check the operation of the timer before using in an environment with a lot of noise. Install the input signal source, input signal wiring and timer away from noise source and high-voltage wire with noise as much as possible. Also, in case of using the timer under the environment with multiple static charge (pipe transportation of molding material, power/liquid material, etc.), place the timer away from such static charge source as well.

Others

The GT3F does not read the preset values of each selector after power is turned off. Note that minimizing the preset time does not shorten the delay time after power is turned off.

To make a sequence circuit by connecting timers and relays, check the timer operation sufficiently in consideration of the reset time of the timer.

Supplies

PLCs & SmartRelay

Operator Interfaces

Sensors

Control Stations

Explosion Protection

References

Flush Silhouette Control

Units

Display

Lights

Display

Units

Safety

Products

Terminal

Blocks

Comm

Terminals

AS-Interface

Relays 8 Timers

Sockets

Circuit

Power

Protectors