

mm inch

- Twelve time ranges available
- 4 models available
 - S1DX-A: Power ON-delay S1DX-F: Power Flicker
 - S1DX-S: Power One-shot S1DX-C: Power One-cycle
- 5 output configurations
 - Relay Timed-out 2 Form C type
 - Relay Timed-out 4 Form C type
 - Transistor Timed-out Normally OFF type
 - Triac (Non Zero-Cross) Timed-out Normally OFF type
 - Triac (Zero-Cross) Timed-out Normally OFF type
- Indicator LEDs provide status at a glance [power supply (red) and operation (green)]
- Flush mountable with accessories
- UL recognized, CSA approved

SPECIFICATIONS

Timing

Type		Relay output		Solid state output		
		AC operating type	DC operating type	Transistor	Triac (Non Zero-Cross)	Triac (Zero-Cross)
Time accuracy (max.)	Operating time fluctuation & Power off time change error	[Except 0.5s & 1s types] $\pm 1\%$ [0.5s type]: $\pm(2\%+10\text{ms})$ [1s type]: $\pm(1\%+10\text{ms})$		$\pm 1\%^*$		
	Temperature error			$\pm 5\%$		
	Voltage error	[Except 0.5s & 1s types] $\pm 1\%$ [0.5s type]: $\pm(2\%+10\text{ms})$ [1s type]: $\pm(1\%+10\text{ms})$		$\pm 1\%$		
	Setting error			$\pm 10\%$		
Min. power off time				100ms		

*Power Flicker and Power One-shot Triac (Non Zero-Cross) type: $\pm(1\%+1/2 \text{ cycle})$

**Power Flicker and Power One-shot Triac (Zero-Cross) type: $\pm(1\%+1 \text{ cycle})$

Characteristics

1. Relay output type

Type	AC type	DC type
Rated operating voltage	24V, 100 to 120V, 220V to 240V	12V, 24V
Operating voltage range	80 to 110% of rated operating voltage	
Rated frequency	50/60Hz common	
Power supply ripple	—	Full-wave rectified (Approx. 48%)
Rated power consumption	Max. 3VA	Max. 2W
Rated control capacity (resistive)	[Timed -out 2 Form C]: 7A 250V AC [Timed -out 4 Form C]: 5A 250V AC	
UL/CSA rating	[Timed -out 2 Form C]: 7A 125 AC, 6A 250V AC, 1/6HP 125, 250V AC, PILOT DUTY C300 [Timed -out 4 Form C]: 5A 250V AC, 1/10HP 125, 250V AC, PILOT DUTY C300	
Output arrangement	Timed-out 2 Form C, Timed-out 4 Form C	
Initial contact resistance, max. (By voltage drop 6V DC 1A)	100m Ω	
Expected life (min. operations)	Mechanical	10 ⁷
	Electrical (resistive)	2 \times 10 ⁵
Initial insulation resistance (At 500V DC)	Min. 100M Ω Between live and dead metal parts/input and output Between contact sets Between contacts	
Initial breakdown voltage	1500Vrms for 1min Between live and dead metal parts/input and output 1500Vrms for 1min Between contact sets 1000Vrms for 1min Between contacts	
Shock resistance	Functional	Min. 10G (4 times on 3 axes)
	Destructive	Min. 100G (5 times on 3 axes)
Vibration resistance	Functional	10 to 55Hz: 1 cycle/min double amplitude of 0.5mm (10min on 3 axes)
	Destructive	10 to 55Hz: 1 cycle/min double amplitude of 0.75mm (1h on 3 axes)
Max. temperature rise	70 deg.	
Ambient temperature	-10 to 50°C + 14 to 122°F	
Ambient humidity	Max. 85% RH	

2. Solid State output type

Type	Transistor output		Triac Non Zero-Cross output		Triac Zero-Cross output	
Rated operating voltage	12V DC	24V DC	12V DC	24V DC	12V DC	24V DC
Operating voltage range	9.6 to 13.2V DC	19.2 to 26.4V DC	9.6 to 13.2V DC	19.2 to 26.4V DC	9.6 to 13.2V DC	19.2 to 26.4V DC
Rated power consumption, max.	0.5W	1W	0.5W	1W	0.5W	1W
Current consumption (approx.)	Output OFF	3mA	3mA	3mA	3mA	3mA
	Output ON	24mA	24mA	24mA	24mA	24mA
Rated control capacity	Control current	2mA to 800mA		50mA to 1A		
	Control voltage	5 to 100V DC		75 to 250V AC		
UL/CSA rating	0.8A 100V DC		1A 250V AC			
Output arrangement	Timed-out Normally OFF					
OFF-state leakage current, max.	10µA (at 100V DC)		5mA (at 250V AC)			
ON-state voltage drop, max.	1.2V (at max. rated load)		1.6V (at max. rated load)			
Initial insulation resistance (At 500V DC) (I/O isolation resistance)	Min. 100MΩ Between input and output					
Initial breakdown voltage (I/O isolation voltage)	1500Vrms for 1 min Between input and output					
Shock resistance	Functional	Min. 20G (4 times on 3 axes)				
	Destructive	Min. 100G (5 times on 3 axes)				
Vibration resistance	Functional	10 to 55Hz: 1 cycle/min double amplitude of 0.5mm (10min on 3 axes)				
	Destructive	10 to 55Hz: 1 cycle/min double amplitude of 0.75mm (1h on 3 axes)				
Ambient temperature	-10 to 50°C + 14 to 122°F					
Ambient humidity	Max. 85% RH					

ORDERING INFORMATION

1. Relay output type

Ex. S1DX- A 2C 5S AC120V

Operation mode	Control output arrangement	Time range *		Operating voltage *
A: Power ON-delay F: Power Flicker S: Power One-shot C: Power One-cycle	2C: Timed-out 2 Form C 4C: Timed-out 4 Form C	0.5S: 0.05 to 0.5 s 1S: 0.1 to 1 s 3S: 0.1 to 3 s 5S: 0.2 to 5 s 10S: 0.5 to 10 s 30S: 1 to 30 s	60S: 3 to 60 s 3M: 0.1 to 3 min 10M: 0.5 to 10 min 30M: 1 to 30 min 60M: 3 to 60 min 3H: 0.1 to 3 h	AC24V: 24V AC AC120V: 100 to 120V AC AC240V: 220 to 240V AC DC12V: 12V DC DC24V: 24V DC

*For other time range types and operating voltage types, please consult us.

Note: Not all ordering code combinations are available. Refer to Price List for a listing of typical models or consult the factory for availability.

2. Solid State output type

Ex. S1DX- A T 5S DC24V

Operation mode	Control output * arrangement	Time range *		Operating voltage
A: Power ON-delay F: Power Flicker S: Power One-shot C: Power One-cycle	T: Transistor Timed-out Normally OFF S: Triac Non Zero-Cross Timed-out Normally OFF SZ: Triac Zero-Cross Timed-out Normally OFF	0.5S: 0.05 to 0.5 s 1S: 0.1 to 1 s 3S: 0.1 to 3 s 5S: 0.2 to 5 s 10S: 0.5 to 10 s 30S: 1 to 30 s	60S: 3 to 60 s 3M: 0.1 to 3 min	DC12V: 12V DC DC24V: 24V DC

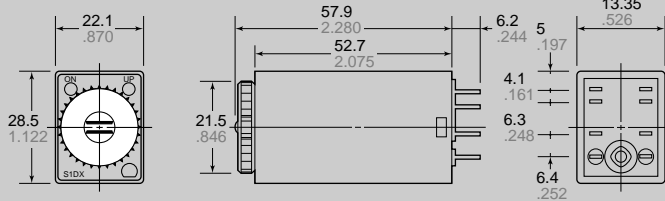
*For other time range types and other control output types, please consult us.

Note: Not all ordering code combinations are available. Refer to Price List for a listing of typical models or consult the factory for availability.

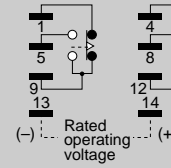
DIMENSIONS

mm inch

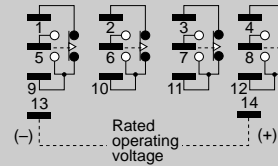
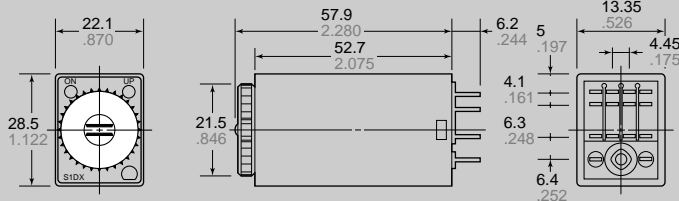
Relay Timed-out 2 Form C type



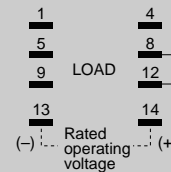
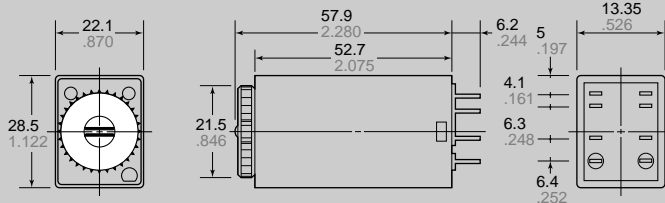
• Wiring diagram



Relay Timed-out 4 Form C type




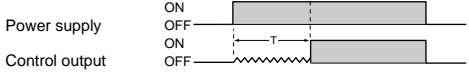

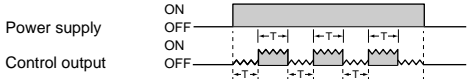

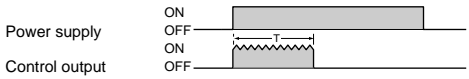

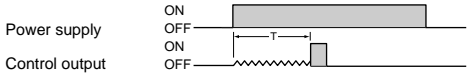
Solid State Output type



(For the DC operating type, terminal 14 is +, and terminal 13 is -.)

OPERATION MODES

T: Set time

Operation mode	Time unit indicator color	Description	Time chart
Power ON-delay	 Yellow	Timing operation will start when the power is supplied. The control output turns on after the setting time.	
Power Flicker	 Blue	When power is supplied, the control output turns on after the setting time and then turns off after the setting time. This operation is repeated.	
Power One-shot	 Green	When power is supplied, the control output turns on for the setting time.	
Power One-cycle	 Red	When power is supplied, the control output turns on for one pulse after the setting time.	

One pulse time: Approx. 1 s

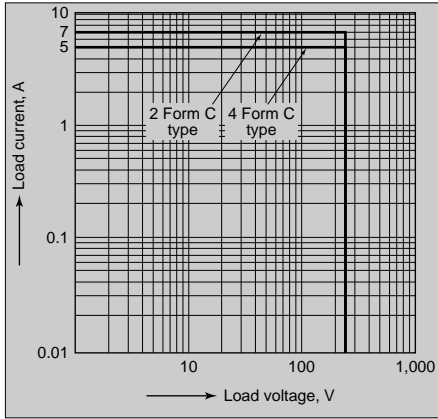
Notes: • Even if timer is set to "0" graduation, the timing operation is performed at least for min. operation time.
• Once power is cut off or the timing operation is completed, a minimum power off time of 0.1s is needed to start the operation again.

DATA

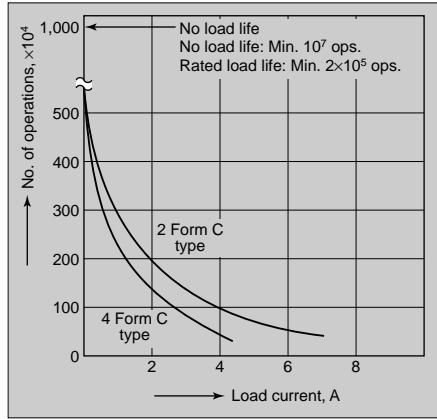
1. Relay Output types

1-1) Load control capacity and life

- Switching capacity



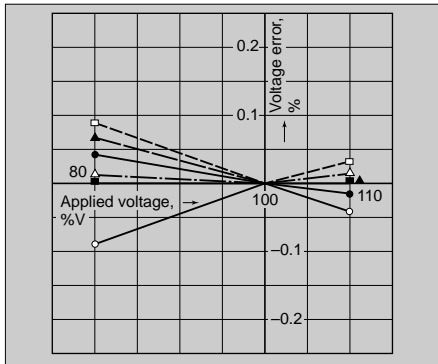
- Life curve



1-2) Time accuracy

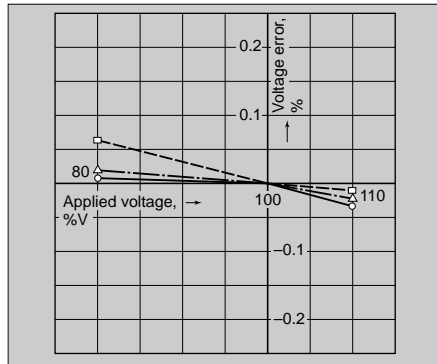
- Voltage error test 1

3 s range, 120V AC operation — 6 pcs.



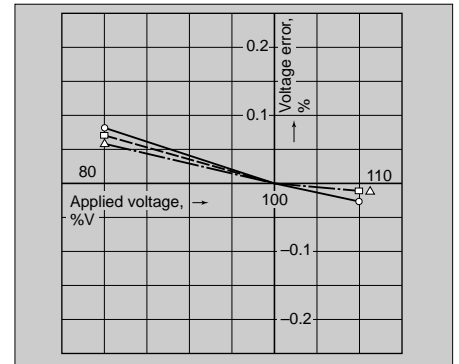
- Voltage error test 2

3 s range, 220V AC operation — 3 pcs.



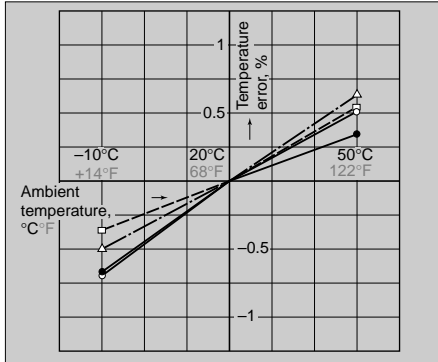
- Voltage error test 3

3 s range, 24V DC operation — 3 pcs.



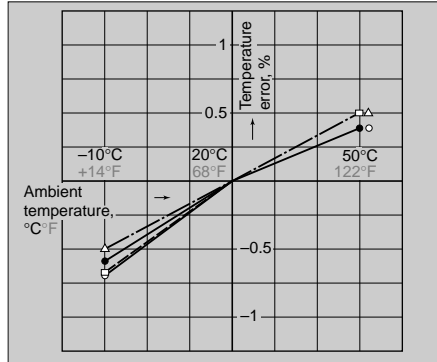
- Temperature error test 1

3 s range, 120V AC operation — 4 pcs.



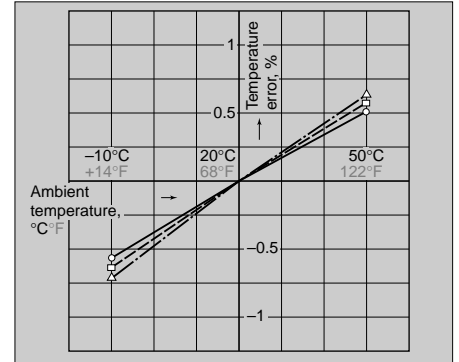
- Temperature error test 2

3 s range, 220V AC operation — 4 pcs.



- Temperature error test 3

3 s range, 24V DC operation — 3 pcs.

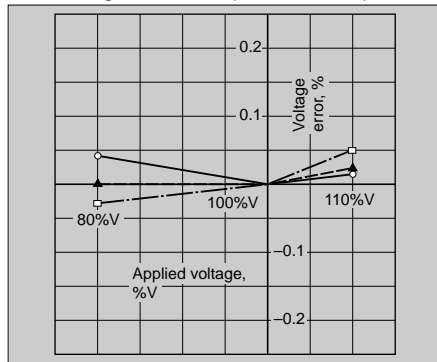


2. Solid State Output types

2-1) Time accuracy

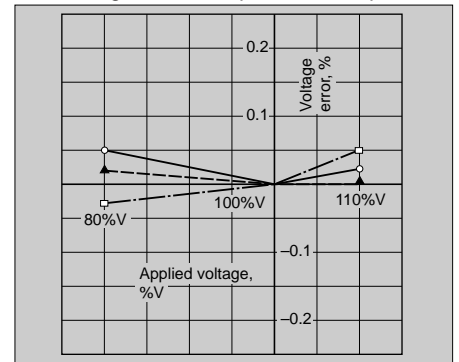
- Voltage error test 1

Transistor output type
10 s range, 24V DC operation — 3 pcs.

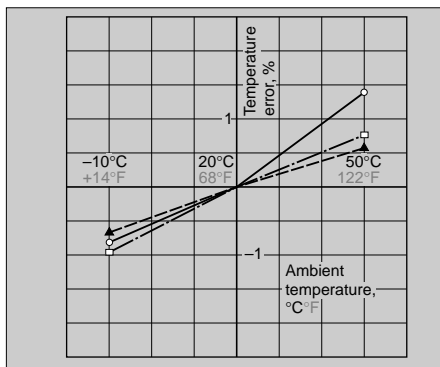


- Voltage error test 2

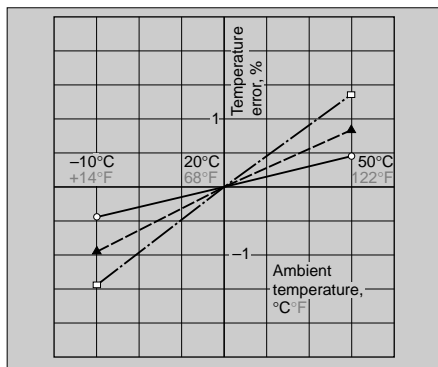
Triac output type
10 s range, 24V DC operation — 3 pcs.



- Temperature error test 1
Transistor output type
10 s range, 24V DC operation — 3 pcs.



- Temperature error test 2
Triac output type
10 s range, 24V DC operation — 3 pcs.

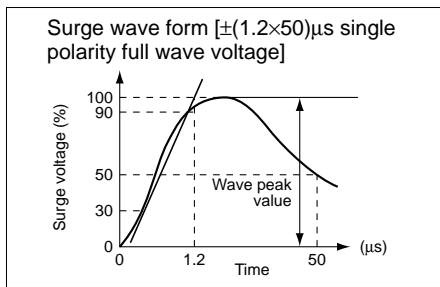


CAUTIONS

[COMMON]

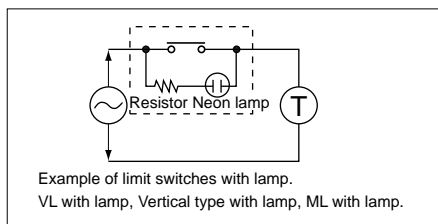
1. Prevent using the timer in such places where flammable or corrosive gas is generated, a lot of dust exists, oil is splashed or considerable shock and vibration occur.
2. Since the main body cover is made of polycarbonate resin, prevent contact with organic solvents such as methyl alcohol, benzene and thinner, or strong alkali materials such as ammonia and caustic soda. In order to maintain the characteristics of the timer, do not remove the cover.
3. External surge protection may be required if the following values are exceeded. Otherwise, the internal circuit will be damaged.

Operation voltage	Surge voltage
100 to 120V AC 220 to 240V AC	4,000V
24V AC 12V DC 24V DC	1,000V



[Relay output type]

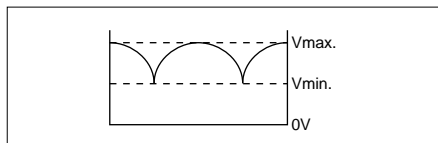
1. When a contact switch having an operation indicating lamp (lamp equipped limit switch, etc.) is used to apply power to the timer, a resistor having a value equal to or greater than the value below shall be connected in series with the lamp.
100 to 120V AC operating type:
Min. 33kΩ
220 to 240V AC operating type:
Min. 82kΩ



[Solid state output type]

1. If ripple is present in the power supply, keep the Vmax. and Vmin. as follows:

Type	Vmin.	Vmax.
DC12V	9.6V	13.2V
DC24V	19.2V	26.4V



2. Transistor output type

- When switching inductive loads with a transistor output type such as DC solenoids, DC motors and DC clutches, it is important to absorb counter emf with a diode as shown in Fig. A.

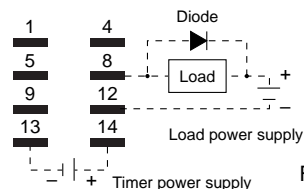


Fig. A

- When switching a load less than control output rating with a transistor output type, add a resistor as shown in Fig. B to keep the load and resistor current 2mA or more.

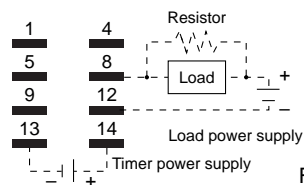


Fig. B

3. Triac output

- When switching a load less than control output rating with a triac output type, add a resistor as shown in Fig. C to keep the load and resistor current 50mA or more.

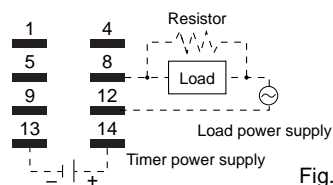


Fig. C