

GE1A Series – ON Delay Timers

Single Function

Key features:

- DPDT or SPDT + instantaneous SPDT
- 8-pin, octal base
- Repeat error $\pm 0.2\%$ maximum
- Large, clear knob for easy setting
- Instant monitoring of operational status by LED indicators



UL, c-UL Listed
File No. E55996



Specifications

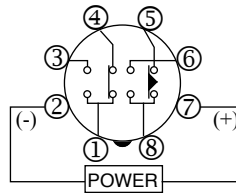
Rated Operating Voltage	24V AC/DC 100 to 120V AC 220 to 240V AC	
Voltage Tolerance	AC: 85 to 110% DC: 90 to 110%	
Contact Rating	240V AC/5A 24V DC/5A	
Contact Form	DPDT or SPDT+ instantaneous SPDT	
Repeat Error	$\pm 0.2\% \pm 10\text{msec}$ maximum	
Voltage Error	$\pm 0.5\% \pm 10\text{msec}$ maximum	
Temperature Error	$\pm 3\%$ maximum	
Setting Error	$\pm 10\%$ maximum	
Reset Time	0.1 sec maximum	
Insulation Resistance	100M Ω minimum (500V DC megger)	
Dielectric Strength	Between power and output terminals: 1,500V AC, 1 minute Between contact circuits: 750V AC, 1 minute	
Vibration Resistance	Damage limits: Amplitude 0.75mm, 10 to 55 Hz Operating extremes: Amplitude 0.5mm, 10 to 55 Hz	
Shock Resistance	Damage limits: 500m/s ² (Approx. 50G)	
Power Consumption	GE1A-B	24V AC type: 1.6 VA
		24V DC type: 1.0W
		110V AC type: 3.8 VA
	GE1A-C	220V AC type: 7.7 VA
		24V AC type: 2.0 VA
		24V DC type: 0.8W
	110V AC type: 3.5 VA	
	220V AC type: 8.0 VA	
	Electrical Life	100,000 operations minimum (at full rated load)
Mechanical Life	10,000,000 operations minimum	
Operating Temperature	-10 to +55°C (without freezing)	
Operating Humidity	35 to 85% RH (without freezing)	

Part Numbering List

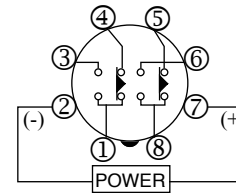
Mode of Operation	Contact	Output	Rated Voltage	Time Range	Complete Part Number		
ON-Delay	Delayed SPDT + Instantaneous SPDT	24V DC/120V AC, 5A 240V AC, 5A	220-240V AC	0.1s - 10h	GE1A-B10HA220		
			110-120V AC		GE1A-B10HA110		
			24V AC/DC		GE1A-B10HAD24		
			220-240V AC	0.3s - 30h	GE1A-B30HA220		
			110-120V AC		GE1A-B30HA110		
			24V AC/DC		GE1A-B30HAD24		
	Delayed DPDT				220-240V AC	0.1s - 10h	GE1A-C10HA220
					110-120V AC		GE1A-C10HA110
					24V AC/DC		GE1A-C10HAD24
					220-240V AC	0.3s - 30h	GE1A-C30HA220
					110-120V AC		GE1A-C30HA110
					24V AC/DC		GE1A-C30HAD24

Timing Diagrams/Schematics

GE1A-B
Delayed SPDT + Instantaneous SPDT



GE1A-C
Delayed DPDT

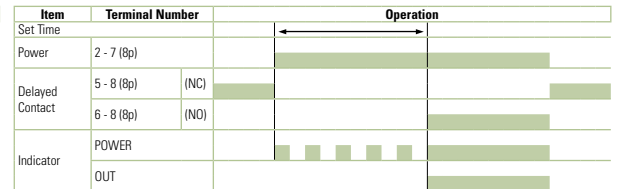
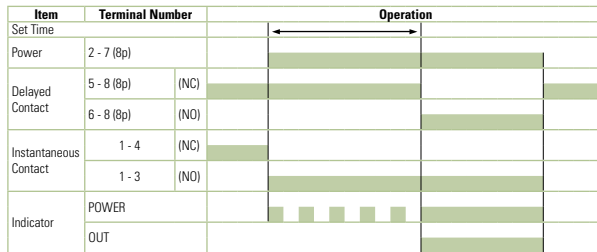


Operation
Mode Selection

ON-Delay 1

MODE

A



Note: Terminals 1, 3, and 4 are for the instantaneous contact



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Accessories

Mounting Accessories & Sockets

Item	Appearance	Part No.
8-Pin Screw Terminal (dual tier)		SR2P-05
8-Pin Fingersafe Socket		SR2P-05C
8-Pin Screw Terminal		SR2P-06
DIN Mounting Rail Length 1000mm		BNDN1000
8-Pin Solder Terminal		SR2P-51
Screw Terminal Socket		SR6P-M08G
Panel Mount Adapter		GE9Z-AD

Other Accessories

Item	Appearance	Part No.
Dust Cover		GE9Z-C48

Switches & Pilot Lights

Signaling Lights

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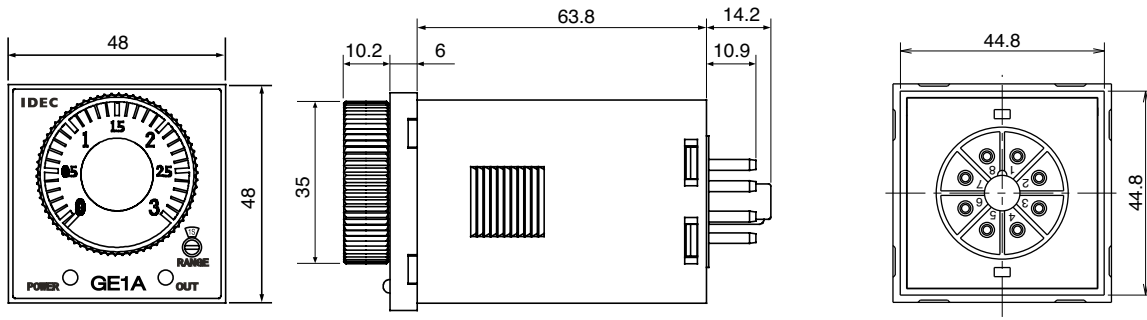
Circuit Breakers

DIN Rail/Surface Mounting Accessories

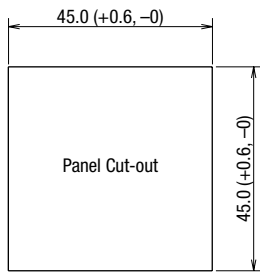
Panel Mounting Accessories

Dimensions

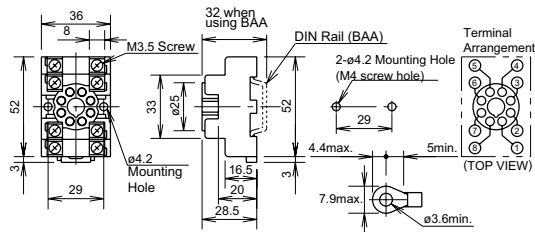
GE1A Timer



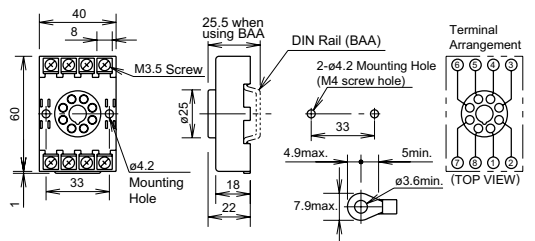
GE1A Timer Panel Cutout



8-Pin SR2P-05



8-Pin SR2P-06



General Instructions for All Timer Series

Load Current

With inductive, capacitive, and incandescent lamp loads, inrush current more than 10 times the rated current may cause welded contacts and other undesired effects. The inrush current and steady-state current must be taken into consideration when specifying a timer.

Contact Protection

Switching an inductive load generates a counter-electromotive force (back EMF) in the coil. The back EMF will cause arcing, which may shorten the contact life and cause imperfect contact. Application of a protection circuit is recommended to safeguard the contacts.

Temperature and Humidity

Use the timer within the operating temperature and operating humidity ranges and prevent freezing or condensation. After the timer has been stored below its operating temperature, leave the timer at room temperature for a sufficient period of time to allow it to return to operating temperatures before use.

Environment

Avoid contact between the timer and sulfurous or ammonia gases, organic solvents (alcohol, benzine, thinner, etc.), strong alkaline substances, or strong acids. Do not use the timer in an environment where such substances are prevalent. Do not allow water to run or splash on the timer.

Vibration and Shock

Excessive vibration or shocks can cause the output contacts to bounce, the timer should be used only within the operating extremes for vibration and shock resistance. In applications with significant vibration or shock, use of hold down springs or clips is recommended to secure a timer to its socket.

Time Setting

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

Input Contacts

Use mechanical contact switch or relay to supply power to the timer. When driving the timer with a solid-state output device (such as a two-wire proximity switch, photoelectric switch, or solid-state relay), malfunction may be caused by leakage current from the solid-state device. Since AC types comprise a capacitive load, the SSR dielectric strength should be two or more times the power voltage when switching the timer power using an SSR.

Generally, it is desirable to use mechanical contacts whenever possible to apply power to a timer or its signal inputs. When using solid state devices, be cautious of inrushes and back-EMF that may exceed the ratings on such devices. Some timers are specially designed so that signal inputs switch at a lower voltage than is used to power the timer (models designated as "B" type).

Timing Accuracy Formulas

Timing accuracies are calculated from the following formulas:

$$\text{Repeat Error} = \pm \frac{1 \times \text{Maximum Measured Value} - \text{Minimum Measured Value} \times 100\%}{2 \text{ Maximum Scale Value}}$$

$$\text{Voltage Error} = \pm \frac{T_v - T_r \times 100\%}{T_r}$$

T_v : Average of measured values at voltage V
 T_r : Average of measured values at the rated voltage

$$\text{Temperature Error} = \pm \frac{T_t - T_{20} \times 100\%}{T_{20}}$$

T_t : Average of measured values at °C
 T_{20} : Average of measured values at 20°C

$$\text{Setting Error} = \pm \frac{\text{Average of Measured Values} - \text{Set Value} \times 100\%}{\text{Maximum Scale Value}}$$