GE1A Series — ON Delay Timers

Single Function

Key features:

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

CE

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File No. E55996

TÜV Rheinland

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		±0.2% ±10msec maximum
Voltage Error		±0.5% ±10msec maximum
Temperature Error		±3% maximum
Setting Error		±10% maximum
Reset Time		0.1 sec maximum
Insulation Resistance		100MΩ 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
		220V AC type: 7.7 VA
	GE1A-C	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)

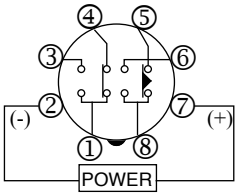
Part Numbering List

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

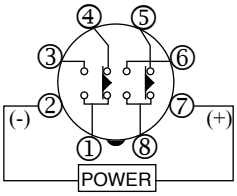
Timing Diagrams/Schematics

Operation Mode Selection

GE1A-B
Delayed SPDT + Instantaneous SPDT



GE1A-C
Delayed DPDT



ON-Delay 1

MODE

A

Item	Terminal Number		Operation
Set Time			
Power	2 - 7 (8p)		
Delayed Contact	5 - 8 (8p)	(NC)	
	6 - 8 (8p)	(NO)	
Instantaneous Contact	1 - 4	(NC)	
	1 - 3	(NO)	
Indicator	POWER		
	OUT		

Item	Terminal Number		Operation
Set Time			
Power	2 - 7 (8p)		
Delayed Contact	5 - 8 (8p)	(NC)	
	6 - 8 (8p)	(NO)	
Indicator	POWER		
	OUT		

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

Accessories

Mounting Accessories & Sockets

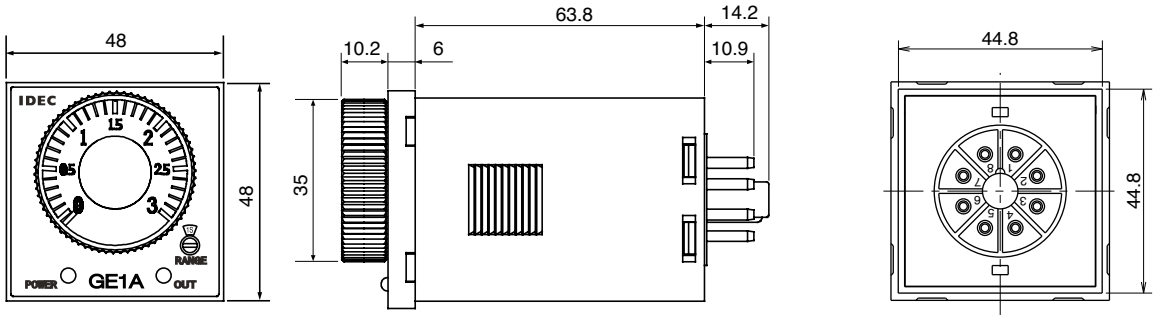
	Item	Appearance	Part No.
DIN Rail/Surface Mounting Accessories	8-Pin Screw Terminal (dual tier)		SR2P-05
	8-Pin Fingersafe Socket		SR2P-05C
	8-Pin Screw Terminal		SR2P-06
	DIN Mounting Rail Length 1000mm		BNDN1000
Panel Mounting Accessories	8-Pin Solder Terminal		SR2P-51
	Screw Terminal Socket		SR6P-M08G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

Other Accessories

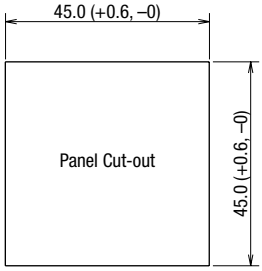
Item	Appearance	Part No.
Dust Cover		GE9Z-C48

Dimensions

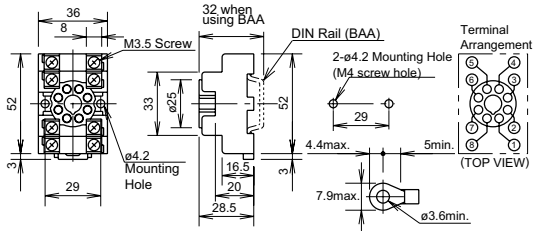
GE1A Timer



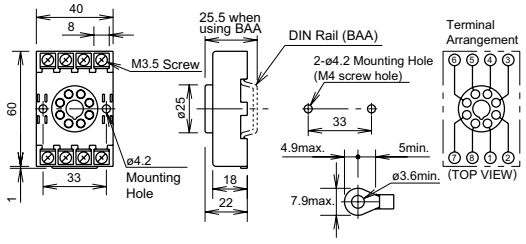
GE1A Timer Panel Cutout



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:

Repeat Error

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

Voltage Error

$$= \pm \frac{Tv - Tr \times 100\%}{Tr}$$

Tv: Average of measured values at voltage V
Tr: Average of measured values at the rated voltage

Temperature Error

$$= \pm \frac{Tt - T20 \times 100\%}{T20}$$

Tt: Average of measured values at °C
T20: Average of measured values at 20°C

Setting Error

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