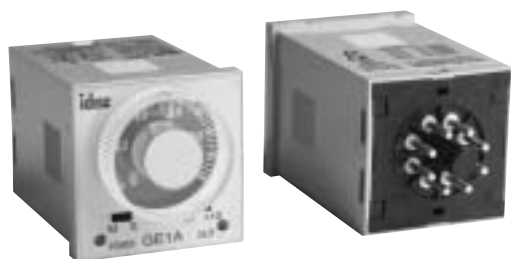


GE1A Series — Single Function ON Delay Timers



Key features of the GE1A series include:

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



TÜV Rheinland

Timers

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) | |

GE1A Table of Contents

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Part Numbering List

| Mode of Operation | Contact | Output | Rated Voltage | Time Range | Complete Part No. |
|-------------------|-----------------------------------|--------------------|---------------|-------------|-------------------|
| ON-Delay | Delayed SPDT + Instantaneous SPDT | 24V DC/120V AC, 5A | 24V AC/DC | 0.1s to 10m | GE1A-B10MAD24 |
| | | | 110-120V AC | | GE1A-B10MA110 |
| | | | 220-240V AC | | GE1A-B10MA220 |
| | | | 24V AC/DC | 0.1m to 10h | GE1A-B10HAD24 |
| | | | 110-120V AC | | GE1A-B10HA110 |
| | | | 220-240V AC | | GE1A-B10HA220 |
| | Delayed DPDT | 240V AC, 5A | 24V AC/DC | 0.1s to 10m | GE1A-C10MAD24 |
| | | | 110-120V AC | | GE1A-C10MA110 |
| | | | 220-240V AC | | GE1A-C10MA220 |
| | | | 24V AC/DC | 0.1m to 10h | GE1A-C10HAD24 |
| | | | 110-120V AC | | GE1A-C10HA110 |
| | | | 220-240V AC | | GE1A-C10HA220 |

Timing Diagrams/Schematics

| | GE1A-B Delayed SPDT + Instantaneous SPDT | GE1A-C Delayed DPDT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|------------------------|--------------|-----------|---------------|----------|--|-----------------|---------------|--|---------------|--|-----------------------|----------|--|----------|--|-----------|-------|--|-----|--|--|------|--------------|-----------|---------------|----------|--|-----------------|--------------------|--|--------------------|--|-----------|-------|--|-----|--|
| Operation Mode Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ON-Delay 1 MODE A | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power (Power)</td> <td>2-7 (8p)</td> <td> </td> </tr> <tr> <td rowspan="2">Delayed Contact</td> <td>(NC) 5-8 (8p)</td> <td> </td> </tr> <tr> <td>(NO) 6-8 (8p)</td> <td> </td> </tr> <tr> <td rowspan="2">Instantaneous Contact</td> <td>(NC) 1-4</td> <td> </td> </tr> <tr> <td>(NO) 1-3</td> <td> </td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td> </td> </tr> <tr> <td>OUT</td> <td> </td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power (Power) | 2-7 (8p) | | Delayed Contact | (NC) 5-8 (8p) | | (NO) 6-8 (8p) | | Instantaneous Contact | (NC) 1-4 | | (NO) 1-3 | | Indicator | POWER | | OUT | | <table border="1"> <thead> <tr> <th>Item</th> <th>Terminal No.</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>Power (Power)</td> <td>2-7 (8p)</td> <td> </td> </tr> <tr> <td rowspan="2">Delayed Contact</td> <td>(NC) 1-4, 5-8 (8p)</td> <td> </td> </tr> <tr> <td>(NO) 1-3, 6-8 (8p)</td> <td> </td> </tr> <tr> <td rowspan="2">Indicator</td> <td>POWER</td> <td> </td> </tr> <tr> <td>OUT</td> <td> </td> </tr> </tbody> </table> | Item | Terminal No. | Operation | Power (Power) | 2-7 (8p) | | Delayed Contact | (NC) 1-4, 5-8 (8p) | | (NO) 1-3, 6-8 (8p) | | Indicator | POWER | | OUT | |
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| Delayed Contact | (NC) 5-8 (8p) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | (NO) 6-8 (8p) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instantaneous Contact | (NC) 1-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | (NO) 1-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Indicator | POWER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | OUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Delayed Contact | (NC) 1-4, 5-8 (8p) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Indicator | POWER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | OUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

G Timers

Accessories

Mounting Accessories

| | | Style | 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 | |

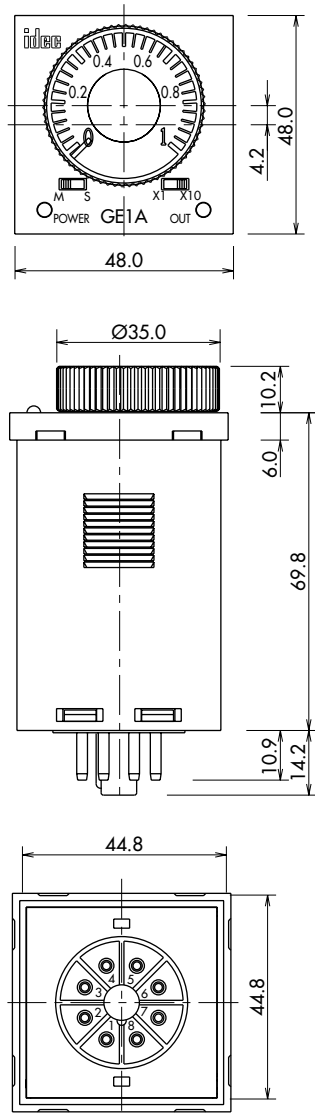
Other Accessories

| | | Style | Appearance | Part No. |
|--|------------|--------------|-------------------|-----------------|
| | Dust Cover | | GE9Z-C48 | |

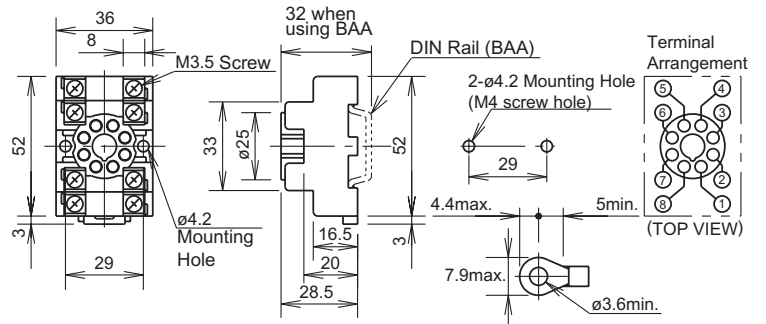
Timers

Dimensions: GE1A Series

GE1A Timer

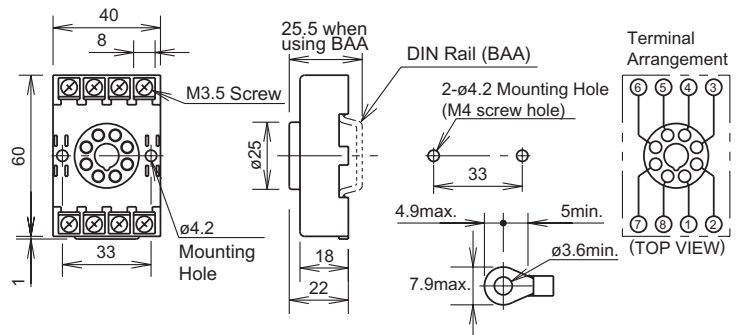


8-Pin SR2P-05

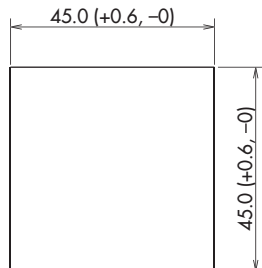


8-Pin SR2P-06

Dimensions in inches (mm)



GE1A Timer Panel Cutout



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, benzene, 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:

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

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

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

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

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

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