

# Power Relay G2A-434

CSM\_G2A-434\_DS\_E\_4\_1

## Fully Sealed Version of G2A that Displays Its Power in Adverse Environments

- Exhibits stable performance in an adverse atmosphere of harmful gas, moisture, or powdery dust due to its hermetically sealed construction.
- All the mechanical components of the Relay have been annealed to prevent gas generation inside the Relay.
- Economical as compared with a hermetically sealed relay in a metallic enclosure.



## Ordering Information

Contact form	Classification	Plug-in terminals	PCB terminals
4PDT	Standard model	G2A-434A(-D)(-N)(-N1)	G2A-4341P

**Note:** When placing your order, add the coil voltage rating to the model number as shown below.

Example: G2A-434A-VS 200/220 VAC

Rated coil voltage

## Model Number Legend

G2A-□□□□□-□  
1 2 3 4 5 6

### 1. Number of Poles and Contact Form

4: 4PDT

### 2. Contact Type

3: Crossbar bifurcated

### 3. Enclosure Construction

4: Fully sealed

### 4. Terminal Shape

A: Plug-in

1P: PCB

### 5. Safety Breaking Mechanism

None: No

Y: Arc barrier

### 6. Special Elements

None: Standard

D: Built-in diode

N: Built-in operation indicator

N1: Built-in operation indicator and diode

## Accessories (Order Separately)

### Sockets

Classification	DIN Track-mounting Socket	Back-connecting Socket			
	Screw terminals	Solder terminals	Wire-wrap terminals	PCB terminals	
Without Hold-down Clip	PYF14A(-E) PYF14A-TU PYF14T	PY14 PY14-3	PY14QN(2)	PY14-0	PY14-02
With Hold-down Clip	---	PY14-Y2	PY14QN(2)-Y2	---	---

**Note:** See the G2A datasheet for detailed information on Relay Hold-down Clips and Socket Mounting Plates.

# Specifications

## ■ Coil Ratings

Rated voltage	Current		Coil resistance	Coil inductance (ref. value)		Must operate	Must release	Max. voltage	Power consumption
	50 Hz	60 Hz		Armature OFF	Armature ON				
6 VAC	295 mA	233 mA	8.9 Ω	0.048 H	0.065 H	80 % max.	30 % min.	110 %	Approx. 1.4 VA
24 VAC	73 mA	58 mA	136 Ω	0.691 H	1.04 H				
100/ 110 VAC	17.7/ 21.4 mA	14/ 16.8 mA	2,200 Ω	12.42/ 12.38 H	18/16.4 H				
200/ 220 VAC	8.9/ 10.8 mA	7/8.4 mA	8,800 Ω	42.2/ 41.8 H	72/65.5 H				
12 VDC	88 mA		136 Ω	0.6 H	1.0 H	10 % min.			Approx. 1.1 W
24 VDC	45 mA		530 Ω	2.7 H	4.6 H				
48 VDC	22 mA		2,200 Ω	11 H	19 H				
100 VDC	11.4 mA		8,800 Ω	43 H	73 H				

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/–20% for AC rated current and ±15% for DC coil resistance.

2. The AC coil resistance and coil inductance values are for reference only.

3. Performance characteristic data is measured at a coil temperature of 23°C.

4. The maximum voltage is one that is applicable instantaneously to the Relay coil at 23°C and not continuously.

5. For built-in operation indicator models rated at 6, 12, and 24 VDC, add an LED current of approx. 5 mA to the rated currents.

## ■ Contact Ratings

<b>Load</b>	Resistive load ( $\cos\phi = 1$ )	Inductive load ( $\cos\phi = 0.4$ ) (L/R = 7 ms)
<b>Contact mechanism</b>	Crossbar bifurcated	
<b>Contact material</b>	Movable:AgAu-clad AgPd Fixed:AgPd	
<b>Rated load</b>	0.3 A at 110 VAC 0.5 A at 24 VDC	0.2 A at 110 VAC 0.3 A at 24 VDC
<b>Rated carry current</b>	2 A	
<b>Max. switching voltage</b>	250 VAC, 125 VDC	
<b>Max. switching current</b>	AC: 0.7 A DC: 2 A	AC: 0.5 A DC: 1 A

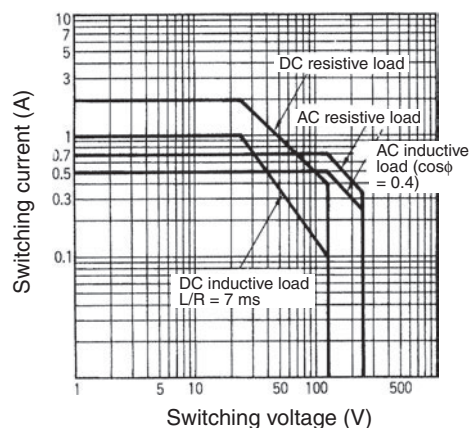
## ■ Characteristics

<b>Contact resistance (see note 2)</b>	100 mΩ max.
<b>Operate time (see note 3)</b>	15 ms max.
<b>Release time (see note 3)</b>	15 ms max.
<b>Max. operating frequency</b>	Mechanical: 18,000 operations/hour Electrical: 1,800 operations/hour (under rated load)
<b>Insulation resistance (see note 4)</b>	100 MΩ min. (at 500 VDC)
<b>Dielectric strength</b>	1,500 VAC, 50/60 Hz for 1 minute between coil and contact and between contacts of different polarities (700 VAC between contacts of same polarities)
<b>Vibration resistance</b>	Destruction: 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)
<b>Shock resistance</b>	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 100 m/s <sup>2</sup>
<b>Error rate (level P) (Reference value) (see note 5)</b>	1 mA at 100 mVDC
<b>Endurance</b>	Mechanical: 100,000,000 operations min. (at operating frequency of 18,000 operations/hour) Electrical: 5,000,000 operations min. (under rated load and at operating frequency of 1,800 operations/hour) (see note 6)
<b>Ambient temperature</b>	Operating: -10°C to 40°C (with no icing or condensation)
<b>Ambient humidity</b>	Operating: 5% to 85%
<b>Weight</b>	Approx. 39 g

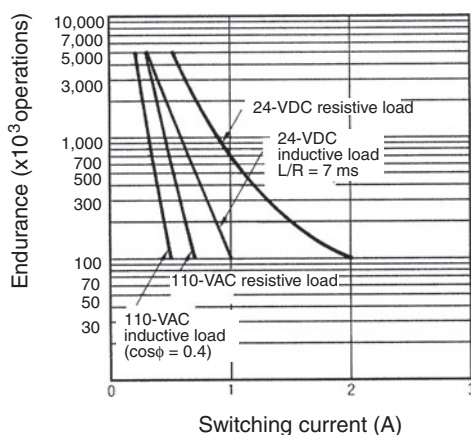
- Note:**
- The data shown above are initial values.
  - The contact resistance was measured with 0.1 A at 5 VDC using the voltage drop method.
  - The operate and release times were measured with the rated voltage imposed with any contact bounce ignored at an ambient temperature of 23°C.
  - The insulation resistance was measured with a 500-VDC megger applied to the same places as those used for checking the dielectric strength.
  - This value was measured at a switching frequency of 60 operations per minute.
  - The electrical endurance was measured at an ambient temperature of 23°C.

## Engineering Data

### Maximum Switching Power

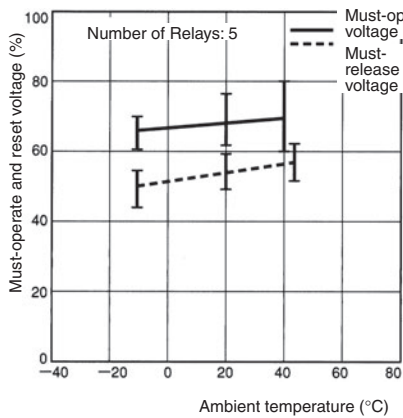


### Endurance

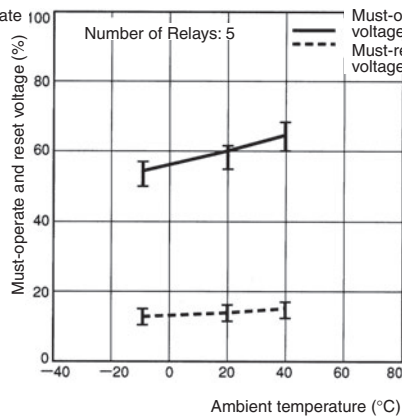


**Ambient Temperature vs. Must-operate and Must-release Voltage**

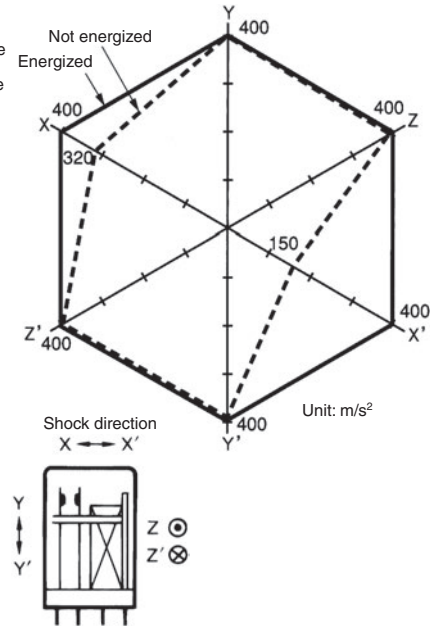
**G2A-434A AC (60 Hz)**



**G2A-434A DC**



**Malfunctioning Shock G2A-434A 100/110 VAC**

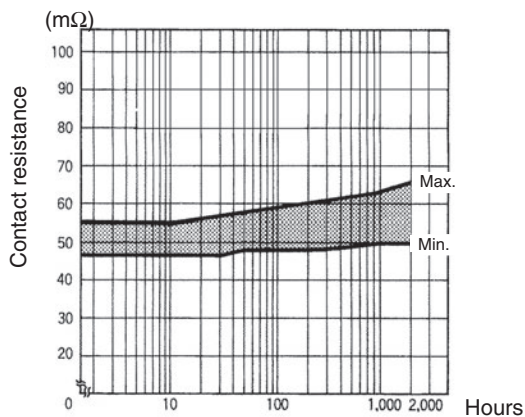


Number of samples: 5

Measurement conditions: Impose a shock of 100 m/s<sup>2</sup> in the ±X, ±Y, and ±Z directions three times each with the Relay energized and not energized to check the shock values that cause the Relay to malfunction.

**H<sub>2</sub>S Gas Data (Reference)**

**G2A-434A 24 VDC**



**Measurement:**

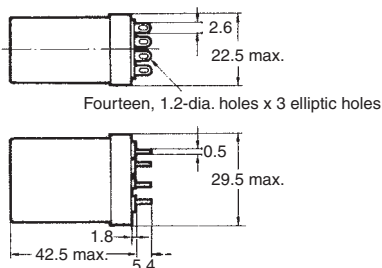
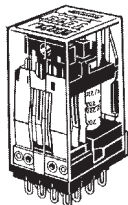
Sample is left in an atmosphere of H<sub>2</sub>S gas with concentration of 2 to 5 ppm at 40°+5°/-0°C and at 75% to 80%, then taken out from the gas atmosphere at fixed time intervals, and left for 30 minutes or more at room temperature and humidity. The contact resistance values before and after the test are measured.

# Dimensions

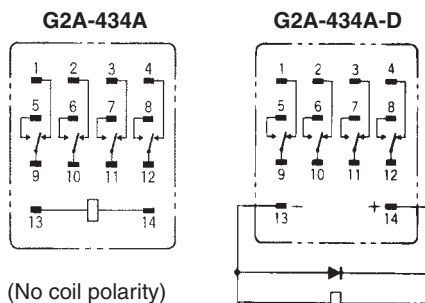
**Note:** 1. All units are in millimeters unless otherwise indicated.  
 2. Dimensional tolerances are  $\pm 0.1$  mm.

## Plug-in Terminal/Solder Terminal Models

G2A-434A  
 G2A-434A-D  
 G2A-434A-N (1)

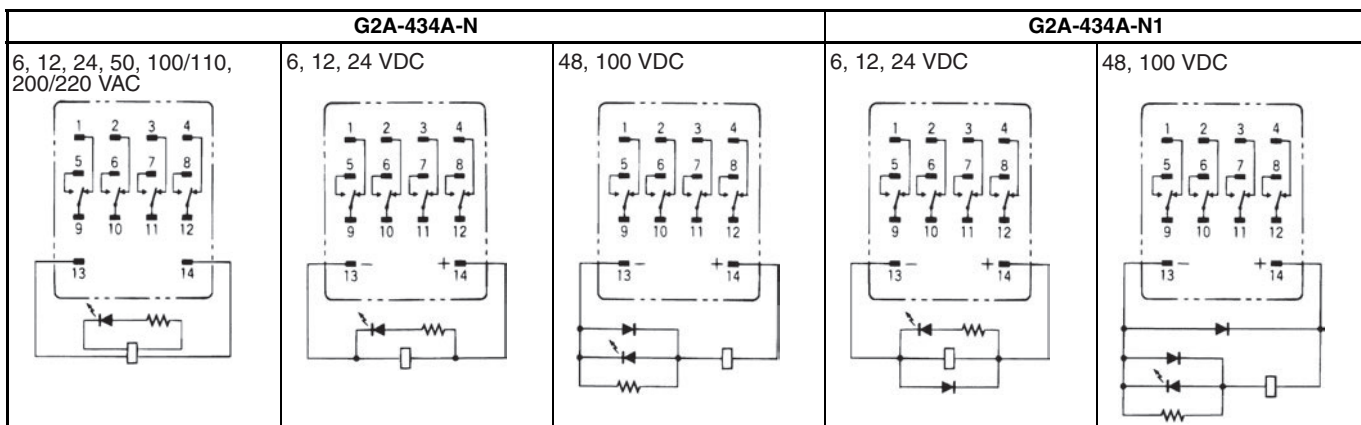


## Terminal Arrangement/Internal Connections (Bottom View)



(No coil polarity)

Be sure to wire the terminals with the correct polarity.

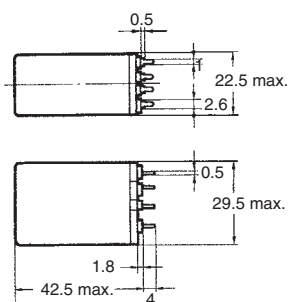
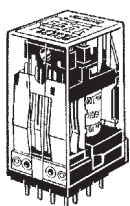


Operation indicator color  
 AC model: Red  
 DC model: Green

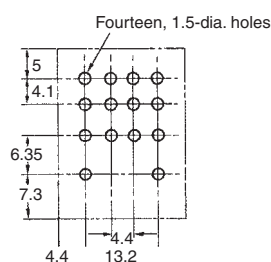
**Note:** DC models have coil polarity. Be sure to wire the terminals with the correct polarity.

## PC Terminal Model

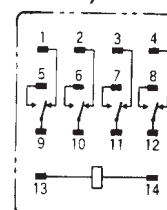
G2A-4341P



## Mounting Holes on PCB (Bottom View)



## Terminal Arrangement (Bottom View)



The coil has no polarity.

# Safety Precautions

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Refer to *Safety precautions for All Relays*.

DC models with a built-in indicator or built-in diode have coil polarity.  
Be sure to wire the terminals with the correct polarity.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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