Impulse Withstand Voltage as High as 10kV with 4kV Dielectric Strength: Ideal for Power Supply Switching

- Input and output (between coil and contacts) are completely separated, with impulse withstand voltage of 10,000 V.
- Insulation distance of 8 mm min. between coil and contacts satisfies the VDE Standard C/250 insulation requirements, and conforms to Electrical Appliance and Material Safety Law with dielectric strength of 4,000 VAC min. Standard model conforms to UL/CSA standards.
- VDE standard approved models are also available. Consult your Omron sales representative for availability.
- SPST-NO (1a) types conform to TV-8 rating, and DPST-NO (2a) types conform to TV-5 rating.
- Full-wave bridge rectifier compatible models are also available.

RoHS Compliant

Model Number Legend

G4W-□-□-□□□-□-□

1. Number of poles
   1: 1-pole/SPST-NO (1a)
   2: 2-pole/DPST-NO (2a)

2. Contact Form
   1: SPST-NO (1a)
   2: DPST-NO (2a)

3. Contact Type
   1: Single
   2: Unsealed

4. Enclosure rating
   1: Unsealed

5. Terminals
   P: Straight PCB

6. Approved Standards
   US: UL, CSA

7. TV Ratings
   TV5: TV-5
   TV8: TV-8

8. Classification
   None: Standard
   Z : Full-wave rectifier

Ordering Information

General-purpose Models (UL, CSA certified)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Contact form</th>
<th>SPST-NO (1a)</th>
<th>DPST-NO (2a)</th>
<th>Minimum packing unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>24 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Contact your OMRON sales representative for fully sealed models.

Full-wave Rectifier Models (UL, CSA certified)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Contact form</th>
<th>SPST-NO (1a)</th>
<th>DPST-NO (2a)</th>
<th>Minimum packing unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>24 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: When ordering, add the rated coil voltage to the model number. Example: G4W-1112P-US-TV8 12 VDC
## Ratings

### Coil

<table>
<thead>
<tr>
<th>Item</th>
<th>Rated voltage</th>
<th>Coil resistance (Ω)</th>
<th>Must operate voltage (V)</th>
<th>Must release voltage (V)</th>
<th>Max. voltage (V)</th>
<th>Power consumption (mW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>66.7</td>
<td>180</td>
<td>80% max.</td>
<td>10% min.</td>
<td>130% (at 23°C)</td>
<td>Approx. 0.8 W</td>
</tr>
<tr>
<td>24 VDC</td>
<td>33.3</td>
<td>720</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 VDC</td>
<td>12,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±15%.

2. The operating characteristics are measured at a coil temperature of 23°C.

3. The “Max. voltage” is the maximum voltage that can be applied to the relay coil.

### Contacts

<table>
<thead>
<tr>
<th>Contact form Load</th>
<th>SPST-NO (1a)</th>
<th>DPST-NO (2a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Resistive load</td>
<td>Inductive load</td>
</tr>
<tr>
<td>Contact material</td>
<td>(cos φ = 1)</td>
<td>(cos φ = 0.4)</td>
</tr>
<tr>
<td>Rated load</td>
<td>15 A at 250 VAC</td>
<td>10 A at 250 VAC</td>
</tr>
<tr>
<td>Rated carry current</td>
<td>15 A at 24 VDC</td>
<td>10 A at 24 VDC</td>
</tr>
<tr>
<td>Max. switching voltage</td>
<td>250 VAC, 125 VDC</td>
<td>10 A</td>
</tr>
<tr>
<td>Max. switching current</td>
<td>15 A</td>
<td>10 A</td>
</tr>
</tbody>
</table>

### Engineering Data

#### Maximum Switching Capacity

**SPST-NO (1a)**

- Switching voltage vs. Switching current (A)
- Switching voltage vs. Switching current (B)

**DPST-NO (2a)**

- Switching voltage vs. Switching current (A)
- Switching voltage vs. Switching current (B)

#### Durability

**SPST-NO (1a) DC Load**

- Durability vs. Operating current
- Durability vs. Operating voltage

**DPST-NO (2a) DC Load**

- Durability vs. Operating current
- Durability vs. Operating voltage

#### Ambient Temperature vs. Must Operate and Must Release Voltage G4W-2212P-US-TV5

- Ambient temperature vs. Must operate voltage
- Ambient temperature vs. Must release voltage

Note: The above values are initial values.

*1. The contact resistance was measured with 1 A at 5 VDC with a fall-of-potential method.

*2. The insulation resistance was measured with a 500 VDC Megger Tester applied to the same parts as those for checking the dielectric strength.

*3. This value was measured at a switching frequency of 120 operations/min.

#### Shock Malfunction

- Shock direction
- Shock voltage
- Shock current

G4W-1113P-US-TV8

Number of Relays: 5 pcs

Test Conditions: Shock is applied in ±X, ±Y, and ±Z directions three times each with and without energizing the Relays to check the number of contact malfunctions.

Standard value: 150 m/s²
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### Dimensions

**Standard model**

![Image of PCB Power Relay](image)

This illustration is the G4W-2212P-US-TV5 model.

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### Approved Standards

- The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

**UL Recognized:** [UL Logo] (File No. E41643)

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of poles</th>
<th>Coil ratings</th>
<th>Contact ratings</th>
<th>Number of test operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4W-1112( )-US-TV8(-Z)</td>
<td>1</td>
<td>6 to 120 VDC</td>
<td>15 A, 250 VAC (General Use) at 40°C</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15A, 24 VDC at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TV-8 at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2HP, 125 VAC at 40°C</td>
<td>25,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/4HP, 240 VAC at 40°C</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1HP, 250 VAC at 40°C</td>
<td></td>
</tr>
<tr>
<td>G4W-2212( )-US-TV5(-Z)</td>
<td>2</td>
<td></td>
<td>15 A, 250 VAC (General Use) at 40°C</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15A, 36 VDC at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TV-5 at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/4HP, 125 VAC at 40°C</td>
<td>25,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2HP, 250 VAC at 40°C</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/3HP, 125 VAC at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/4HP, 250 VAC at 40°C</td>
<td></td>
</tr>
</tbody>
</table>

**CSA Certified:** [CSA Logo] (File No. LR31928)

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of poles</th>
<th>Coil ratings</th>
<th>Contact ratings</th>
<th>Number of test operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4W-1112( )-US-TV8(-Z)</td>
<td>1</td>
<td>6 to 120 VDC</td>
<td>15 A, 250 VAC (General Use) at 40°C</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15A, 24 VDC at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TV-8 at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2HP, 125 VAC at 40°C</td>
<td>25,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/4HP, 240 VAC at 40°C</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1HP, 250 VAC at 40°C</td>
<td></td>
</tr>
<tr>
<td>G4W-2212( )-US-TV5(-Z)</td>
<td>2</td>
<td></td>
<td>15 A, 250 VAC (General Use) (Same Polarity) at 40°C</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 A, 250 VAC (General Use) at 40°C</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15A, 24 VDC at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TV-5 at 40°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2HP, 250 VAC at 40°C</td>
<td>25,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/3HP, 125 VAC at 40°C</td>
<td>1,000</td>
</tr>
</tbody>
</table>

---

### Standard model PCB Mounting Holes

- Dimensions
  - 30.5 max. (29.8)*
  - 19.5 max. (18.8)*

- Approved Standards:
  - UL Recognized: [UL Logo] (File No. E41643)
  - CSA Certified: [CSA Logo] (File No. LR31928)

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![Diagram of PCB Power Relay](image)

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### Terminal Arrangement/ Internal Connections

- **G4W-1112P-US-TV8(-Z)**
  - 2.54 Two, 1.2-dia. holes
  - 7.62 Two, 1.8-dia. holes

- **G4W-2212P-US-TV5(-Z)**
  - 2.54 Two, 1.2-dia. holes
  - Four, 1.8-dia. holes

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*Average value

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**NOTE:**

- Standard model PCB Mounting Holes (BOTTOM VIEW) Tolerance: ±0.1 mm

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**G4W**

PCB Power Relay
Precautions

- Please refer to “PCB Relays Common Precautions” for correct use.

### Mounting
- When mounting more than two Relays on a PCB, keep the gap as shown in the following figure.
- No specified mounting direction.
- Not compatible with sockets.

- There is the current-carrying metal part on the coil terminal.
  Do not mount to the PCB with patterned metal surface.

### Correct Use

- 3 mm min.
- 3 mm min.

### Other Precautions
- This Relay is suitable for power load switching of motors, transformers, solenoids, lamps, heaters, etc. Do not use the G4W to switch micro loads less than 100 mA, such as in signal applications.

Note: Do not use this document to operate the Unit.

OMRON Corporation
Electronic and Mechanical Components Company

Contact: www.omron.com/ecb

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