

# PCB Relay G4W

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

- Creepage distance of 8 mm min. meets VDE C250.
- Dielectric strength of 4,000 VAC min.
- SPST-NO types conform to TV-8 rating.
- DPST-NO types conform to TV-5 rating.
- International 2.54-mm terminal pitch.
- RoHS Compliant



## Ordering Information

Mounting style	Terminals	SPST-NO	DPST-NO
General purpose	PCB (straight)	G4W-1112P-US-TV8	G4W-2212P-US-TV5

**Note:** When ordering, add the rated coil voltage to the model number.  
 Example: G4W-1112P-US-TV8 DC12  
 \_\_\_\_\_ Rated coil voltage

### Model Number Legend

G4W -     -  -  DC   
 1 2 3 4 5 6 7

- |  |   |   |
|--|---|---|
| <b>1. Contact Form</b><br>11: SPST-NO<br>22: DPST-NO | <b>4. Terminals</b><br>P: Straight PCB                | <b>6. TV Ratings</b><br>TV5: TV-5<br>TV8: TV-8  |
| <b>2. Contact Type</b><br>1: Single button           | <b>5. Approved Standards</b><br>US: UL, CSA certified | <b>7. Rated Coil Voltage</b><br>12, 24, 100 VDC |
| <b>3. Enclosure Ratings</b><br>2: Unsealed           |   |   |

## Specifications

### Coil Ratings

<b>Rated voltage</b>	12 VDC	24 VDC	100 VDC
<b>Rated current</b>	66.7 mA	33.3 mA	8 mA
<b>Coil resistance</b>	180 Ω	720 Ω	12,500 Ω
<b>Coil inductance (H) (ref. value)</b>	<b>Armature OFF</b>	0.93	3.7
	<b>Armature ON</b>	1.65	6.4
<b>Must operate voltage</b>	80% max. of rated voltage		
<b>Must release voltage</b>	10% min. of rated voltage		
<b>Max. voltage</b>	130% of rated voltage (at 23°C)		
<b>Power consumption</b>	Approx. 800 mW		

- Note:**
1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±15%.
  2. Operating characteristics are measured at a coil temperature of 23°C.
  3. The Max. Voltage refers to the maximum value in a varying range of operating power voltages, not a continuous voltage.

## ■ Contact Ratings

Item	SPST-NO		DPST-NO	
	Resistive load ( $\cos\phi = 1$ )	Inductive load ( $\cos\phi = 0.4$ ; L/R = 7 ms)	Resistive load ( $\cos\phi = 1$ )	Inductive load ( $\cos\phi = 0.4$ ; L/R = 7 ms)
Rated load	15 A at 250 VAC; 15 A at 24 VDC	10 A at 250 VAC; 7.5 A at 24 VDC	10 A at 250 VAC; 10 A at 24 VDC	7.5 A at 250 VAC; 5 A at 24 VDC
Contact material	Ag Alloy			
Rated carry current	15 A		10 A	
Max. switching voltage	250 VAC, 125 VDC			
Max. switching current	15 A		10 A	
Max. switching power	3,750 VA, 375 W	2,500 VA, 255 W	2,500 VA, 240 W	1,850 VA, 120 W
Min. Permissible Load (reference value - see note)	100 mA at 5 VDC			

Note: P level:  $\lambda_{60} = 0.1 \times 10^{-6}$  operations

## ■ Characteristics

Contact resistance	30 m $\Omega$ max.
Operate time	20 ms max. (mean value: approx. 13 ms)
Release time	5 ms max. (mean value: approx. 2.5 ms)
Bounce time	Operate: approx. 3 ms
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)
Insulation resistance	100 M $\Omega$ max. (at 500 VDC)
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between coil and contacts 2,000 VAC, 50/60 Hz for 1 min between contacts of different polarities (DPST-NO) 1,500 VAC, 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	10,000 V (1.2 x 50 $\mu$ s) between coil and contacts
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 150 m/s <sup>2</sup>
Service Life	Mechanical: 5,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Ambient temperature	Operating: -25°C to 55°C (with no icing)
Ambient humidity	Operating: 5% to 85% RH
Weight	Approx. 29 g

## ■ Approved Standards

### UL508 (File No. E41643)/CSA C22.2 No.14 (File No.LR31928)

Model	Contact form	Coil ratings	Contact ratings
G4W-1112P-US-TV8	SPST-NO	6 to 120 VDC	15 A, 250 VAC (general use) 15 A, 24 VDC TV-8 1/2 hp, 125 VAC 1 hp, 250 VAC 3/4 hp, 240 VAC
G4W-2212P-US-TV5	DPST-NO		15 A, 250 VAC (general use) 10 A, 250 VAC (general use) 15 A, 24 VDC TV-5 1/2 hp, 250 VAC 1/3 hp, 125/250 VAC

### SEMKO (File No. 204772)

Contact form	Coil ratings	Contact ratings
SPST-NO	6-100 VDC	15/120 A, 250 VAC
DPST	6-120 VDC	10/80 A, 250 VAC

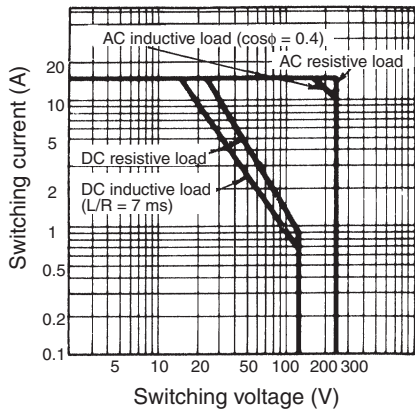
VDE0435 (File No.1907)

Contact form	Coil ratings	Contact ratings
SPST-NO	6, 12, 24, 48, 100 VDC	15 A, 250 VAC ( $\cos\phi = 1.0$ ) 10 A, 250 VAC ( $\cos\phi = 0.4$ ) 15 A, 24 VDC (0 ms) 7.5 A, 24 VDC (40 ms)
DPST-NO		10 A, 250 VAC ( $\cos\phi = 1.0$ ) 7.5 A, 250 VAC ( $\cos\phi = 0.4$ ) 10 A, 24 VDC (0 ms) 5 A, 24 VDC (40 ms)

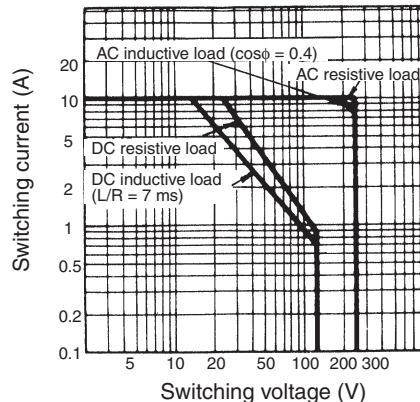
## Engineering Data

### Maximum Switching Power

G4W-1112P-US-TV8

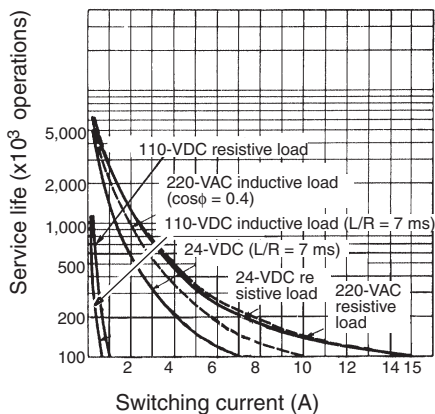


G4W-2212P-US-TV5

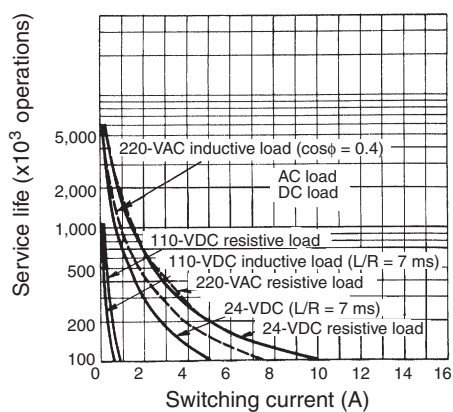


### Service Life

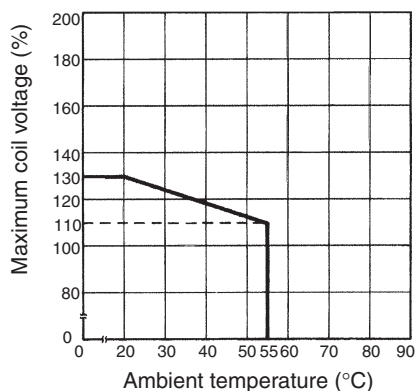
G4W-1112P-US-TV8



G4W-2212P-US-TV5



### Ambient Temperature vs. Maximum Coil Voltage

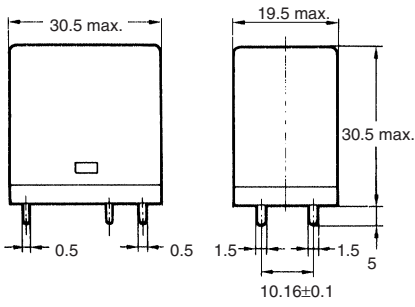


**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

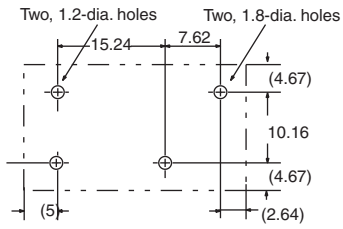
# Dimensions

Note: All units are in millimeters unless otherwise indicated.

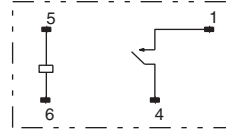
## G4W-□12P-US-TV



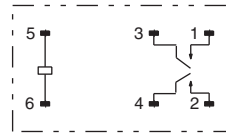
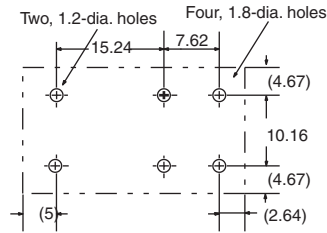
### Mounting Holes (Bottom View) G4W-1112P-US-TV-8



### Terminal Arrangement/Internal Connections (Bottom View)



### Mounting Holes (Bottom View) G4W-2212P-US-TV-5





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**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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