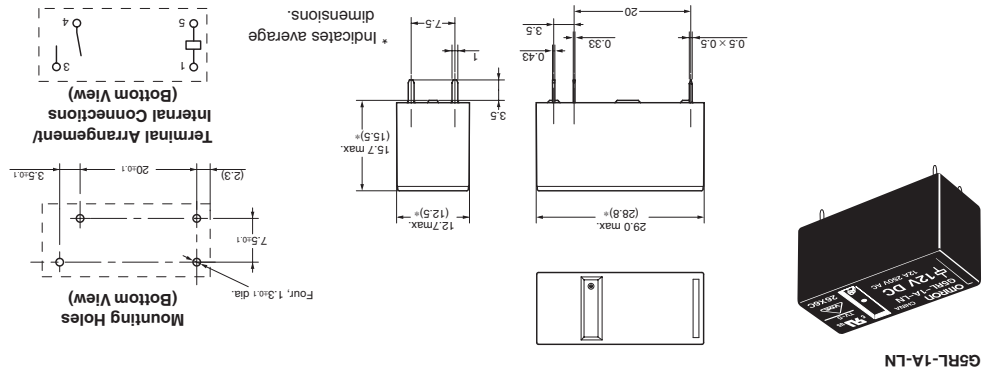


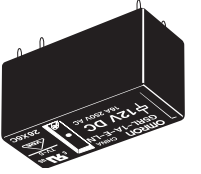
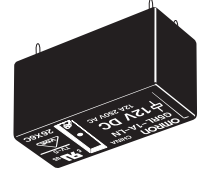
**PCB Power Relay – G5RL**

**Dimensions**

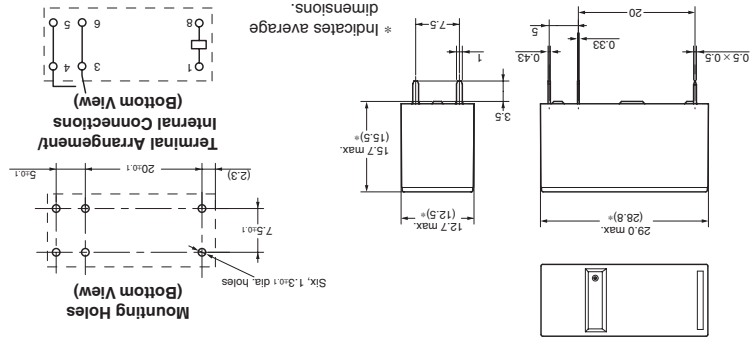
Note: All units are in millimetres unless otherwise indicated.



G5RL-1A-LN



G5RL-1A-E-LN



**Precautions**

**■ Mounting**

When mounting a G5RL-LN Relay (Silent Relay) on a PCB, use a diode for surge absorption for the coil.

**Disclaimer:**

All technical performance data applies to the product as such; specific conditions of individual applications are not considered. Always check the suitability of the product for your intended purpose. Omron does not assume any responsibility or liability for non-compliance herein, and we recommend prior technical clarification for applications where requirements, loading, or ambient conditions differ from

**ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.**  
To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

**PCB Power Relay – G4W**

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

- ROHS compliant.
- Creepage distance of 8 mm min.
- Dielectric strength of 4,000 VAC min.
- SPST-NO types conform to TV-8 rating.
- DPST-NO types conform to TV-5 rating.
- International 2.54mm terminal pitch.



Power Relays

**Ordering Information**

Contacts	Mounting style	General purpose	
		Terminals	PCB (straight)
DPST-NO		G4W-112P-US-TV8	G4W-2212P-US-TV5

Note: When ordering, add the rated coil voltage to the model number.  
Example: G4W-112P-US-TV8 12 VDC

Model Number Legend  
G4W -         -  -       VDC

1. Contact Form  
11: SPST-NO  
22: DPST-NO
2. Contact Type  
1: Single Button
3. Enclosure Ratings  
2: Unsealed  
P: Straight PCB
4. Terminals  
Z: Full-wave rectifier
5. Approved Standards  
US: UL, CSA certified
6. TV Ratings  
TV5: TV-5  
TV8: TV-8
7. Special Function  
None: General purpose
8. Rated Coil Voltage  
12, 24, 100 VDC

**PCB Power Relay – G4W**

**Specifications**

Single-side Stable Type

**Coil Ratings**

Rated voltage	12 VDC	24 VDC	100 VDC
Rated current	66.7 mA	33.3 mA	8 mA
Coil resistance	180 Ω	720 Ω	12,500 Ω
Coil inductance	0.93	3.7	61.8
(H) (ref. value)	1.65	6.4	106
Armature ON			
Must operate voltage	80% max. of rated voltage		
Must release voltage	10% min. of rated voltage		
Max. voltage	130% of rated voltage (at 23°C)		
Power consumption	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.

**Contact Ratings**

Item	SPST-NO			DPST-NO		
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)
Rated load	15A at 250 VAC; 15A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	5A at 250 VAC; 5A at 24 VDC	5A at 250 VAC; 5A at 24 VDC
Contact material	AgSnIn					
Rated carry current	15A					
Max. switching voltage	250 VAC, 125 VDC					
Max. switching current	15A					
Max. switching power	3,750 VA, 375 W			2,500 VA, 255 W		
Failure rate (reference value)	100 mA at 5 VDC			1,850 VA, 120 W		

Note: F level: λ<sub>60</sub> = 0.1 x 10<sup>6</sup>/operation

**PCB Power Relay – G4W**

**Characteristics**

Contact resistance	30 mΩ 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 MΩ 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
Insulation	Creepage (Typ) 8.0 mm Distance 8.0 mm
Tracking Resistance (CTI)	175 V
Impulse withstand voltage	10,000 V (1.2 x 50 μs) between coil and contacts
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 150 m/s <sup>2</sup>
Endurance	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) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Ambient humidity	Operating: 5% to 85% RH
Weight	Approx. 29 g

Power Relays

**PCB Power Relay – G4W**

**Specifications**

**Coil Ratings**

Single-side Stable Type

Rated voltage	12 VDC	24 VDC	100 VDC
Rated current	66.7 mA	33.3 mA	8 mA
Coil resistance	180 Ω	720 Ω	12,500 Ω
Coil inductance	0.93	3.7	61.8
(H) (ref. value)	Armature ON	1.65	6.4
Must operate voltage	80% max. of rated voltage		
Must release voltage	10% min. of rated voltage		
Max. voltage	130% of rated voltage (at 23°C)		
Power consumption	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.

**Contact Ratings**

Item	SPST-NO			DPST-NO		
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Inductive load (cosφ = 0.4; L/R = 7 ms)	
Rated load	15A at 250 VAC; 15A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	10A at 250 VAC; 7.5A at 24 VDC	5A at 250 VAC; 5A at 24 VDC	5A at 250 VAC; 5A at 24 VDC
Contact material	AgSnIn					
Rated carry current	15A					
Max. switching voltage	250 VAC, 125 VDC					
Max. switching current	15A					
Max. switching power	3,750 VA, 375 W			2,500 VA, 255 W		
Failure rate (reference value)	100 mA at 5 VDC			1,850 VA, 120 W		

Note: F level: λ<sub>60</sub> = 0.1 x 10<sup>6</sup>/operation

**PCB Power Relay – G4W**

**Characteristics**

Contact resistance	30 mΩ 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 MΩ 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
Insulation	Creepage (Typ) 8.0 mm Distance 8.0 mm
Tracking Resistance (CTI)	175 V
Impulse withstand voltage	10,000 V (1.2 x 50 μs) between coil and contacts
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 150 m/s <sup>2</sup>
Endurance	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) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Ambient humidity	Operating: 5% to 85% RH
Weight	Approx. 29 g

Power Relays

**PCB Power Relay – G4W**

■ 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) 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) 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

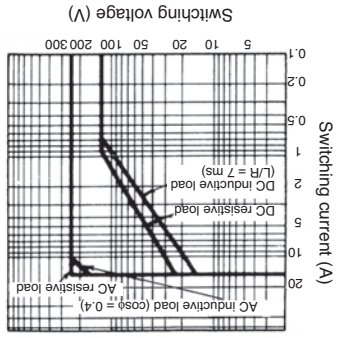
**EN 61810-1 (VDE0435 (File No. 1907)**

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

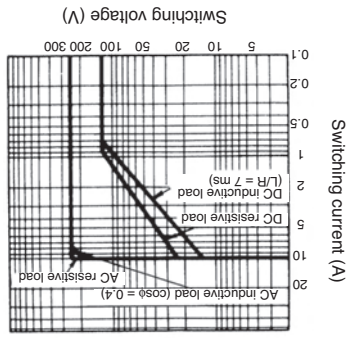
**PCB Power Relay – G4W**

**Engineering Data**

**Maximum Switching Power**

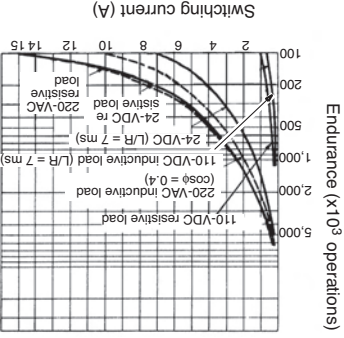


G4W-1112P-US-TV8

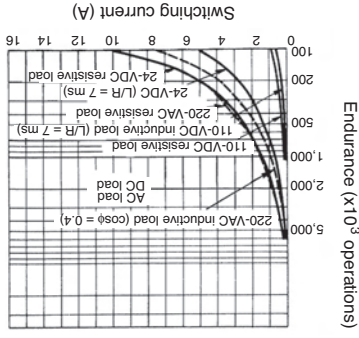


G4W-2212P-US-TV5

**Endurance**

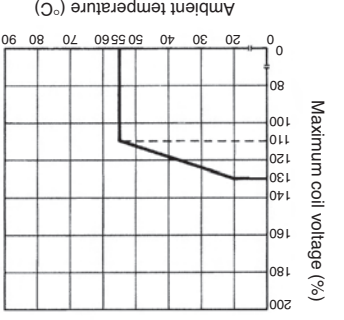


G4W-1112P-US-TV8



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.

Power Relays

**PCB Power Relay – G4W**

■ 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) 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) 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

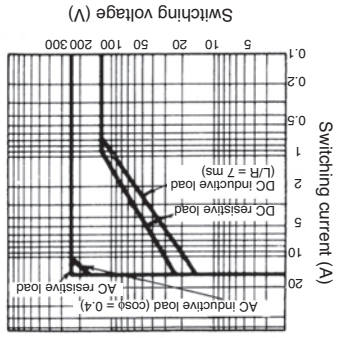
**EN 61810-1 (VDE0435 (File No. 1907)**

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

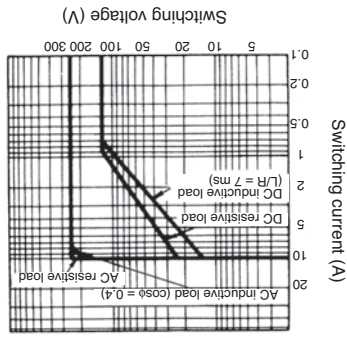
**PCB Power Relay – G4W**

**Engineering Data**

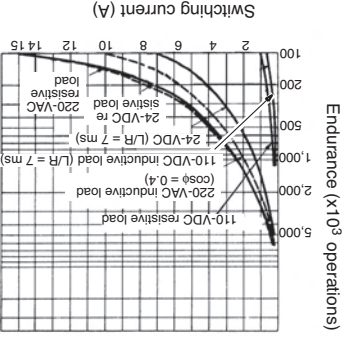
**Maximum Switching Power**



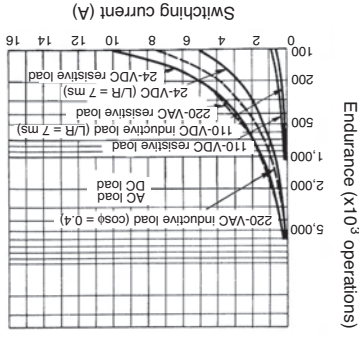
G4W-1112P-US-TV8



G4W-2212P-US-TV5

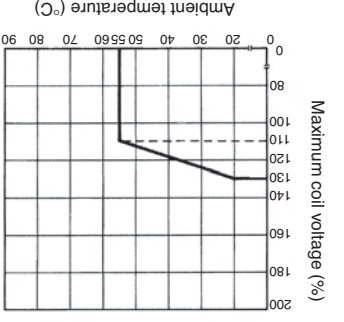


G4W-1112P-US-TV8



G4W-2212P-US-TV5

**Ambient Temperature vs. Maximum Coil Voltage**

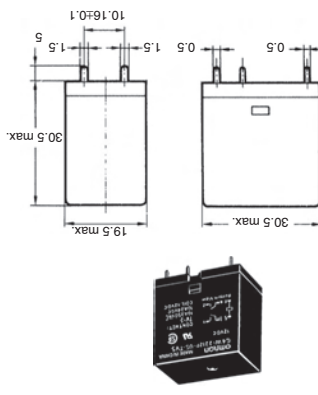


**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

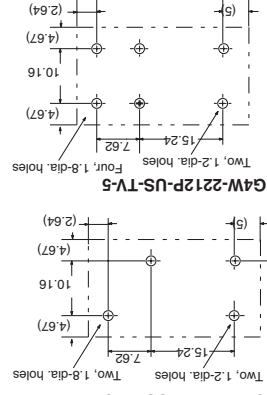
Power Relays

## Pcb Power Relay – G4W

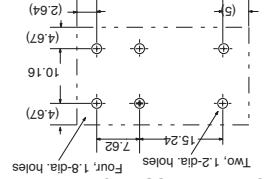
G4W-12P-US-TV



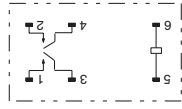
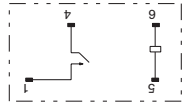
G4W-112P-US-TV-8



G4W-2212P-US-TV-5



Terminal Arrangement/Internal Connections (Bottom View)



## Dimensions

150

CAT. No. J039-E2-09A-X

## Pcb Power Relay – G8P

### Compact, Low-cost 30-A Power Relay for PC Board or Panel-mounted Applications

- ROHS compliant.
- Compact, yet capable of switching up to 30-A loads.
- Complies with UL873 and UL508 column A spacings (3/8" through air, 1/2" over surface).
- UL Class F insulation standard.
- Withstands of up to 6,000 V under 1,250 µs impulse wave or ring wave.
- A selection of contact forms: SPDT and SPST-NO.
- Quick-connect terminals versions ideal for PC board and panel mounting.
- Flanged mounting available.
- Ideal for home and industrial appliances, HVAC (heating, ventilating, and air conditioning), and many other applications.



Power Relays



## Ordering Information

Classification	Contact Form		Enclosure Rating	Mounting style		Mating style	Terminal
	PCB	Quick-connect		PCB	Quick-connect		
PCB mounting	SPST-NO	G8P-1AP	G8P-1A2P	G8P-1A4P	None	None	Open
	SPDT	G8P-1CP	G8P-1C2P	G8P-1C4P	None	None	Open
	SPST-NO	G8P-1ATP	G8P-1A2TP	G8P-1A4TP	Flanged mounting	Flanged mounting	Flanged mounting
Flanged mounting	Quick-connect	G8P-1CTP	G8P-1C2TP	G8P-1C4TP	Flanged mounting	Flanged mounting	Flanged mounting
	Quick-connect	G8P-1CTF	G8P-1A2TF	G8P-1C4TF	Flanged mounting	Flanged mounting	Flanged mounting
	SPDT	G8P-1Q2TF	G8P-1Q2TF	G8P-1Q2TF	Flanged mounting	Flanged mounting	Flanged mounting

Note: 1. The contacts described above are AgCdO.

2. When ordering, add the rated coil voltage to the model number

Example: G8P-1AP 12 VDC

Rated coil voltage

Model Number Legend

G8P -     -        VDC

### 1. Number of Poles

1: 1 pole

### 2. Contact Form

A: SPST-NO

C: SPDT

### 3. Enclosure Ratings

None: Open

2: Unsealed

4: Fully-Sealed

P: Straight PCB for contacts and coil

T: Quick-connect (#250 terminals for coil) and #187 terminals for contacts

TP: Quick-connect (#250 terminals) and straight PCB for contacts, and straight PCB for coil

### 5. Mounting

None: PCB mounting

F: Flanged mounting

### 6. Rated Coil Voltage

5, 9, 12, 24, 48, 110

Other rated coil voltages available.

151

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