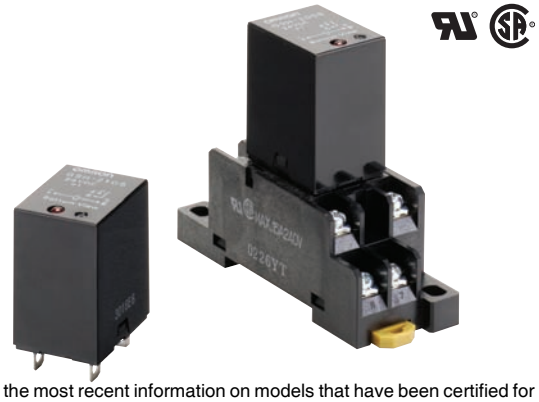
Hybrid Power Relay
G9H

CSM_G9H_DS_E_6_1

Hybridization of a Magnetic Relay and an SSR Achieves 10-A Switching for 10 Million Operations.

- UL/CSA certified (-US models).
- Using a triac to open and close the circuit reduces chattering and arching, thereby increasing the electrical durability to 10 million operations.
- Relays contacts for power ON and 10-A switching with high-capacity are provided in a compact body without the need of radiators. Plus, there is almost no effect on heat generation or ambient temperature.
- Operation indicators to easily check operation.
- Built-in temperature fuse prevents internal burning due to triac or relay malfunctions.
- Socket-type Relays the same size as the 1-pole and 2-pole LY Relays.

⚠ Refer to *Safety Precautions for All Solid State Relays.*



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Ordering Information

■ List of Model

Isolation method	Zero cross function	Operation indicator	Applicable output load (See note.)	Rated input voltage	Model
Relay	No	Yes	5 A 100 to 240 VAC	5 VDC	G9H-205S DC5
					G9H-205S-US DC5
				12 VDC	G9H-205S DC12
					G9H-205S-US DC12
				24 VDC	G9H-205S DC24
					G9H-205S-US DC24
			10 A 100 to 240 VAC	5 VDC	G9H-210S DC5
					G9H-210S-US DC5
				12 VDC	G9H-210S DC12
					G9H-210S-US DC12
				24 VDC	G9H-210S DC24
					G9H-210S-US DC24

Note: 1. The actual product is labeled "250 VAC."

2. For information on products that are certified for international standards, consult your OMRON sales representatives

■ Accessories (Order Separately)

Connecting Socket Mounting Plate

Model	Minimum quantity packaged (units)
PYP-1	10
PYP-18	1

Note: Order the models above in increments of the minimum quantity packaged.

Specifications

■ Ratings

Input

Rated voltage	Item	Operating voltage	Coil resistance	Must operate voltage	Must release voltage	Power consumption
DC	**5 V**	4 to 6 VDC	104 Ω	4 VDC max.	0.5 VDC min.	Approx. 240 mW
	12 V	9.6 to 14.4 VDC	600 Ω	9.6 VDC max.	1.2 VDC min.	
	24 V	19.2 to 28. 8 VDC	2,400 Ω	19.2 VDC max.	2.4 VDC min.	

Note: 1. The coil resistance is measured at a coil temperature of 23°C with a tolerance of ±10%.
2. Performance characteristic data are measured at a coil temperature of 23°C.

Output

Item / Model	Applicable load			
	Rated load voltage	Load voltage range	Load current (See note.)	Inrush current resistance
G9H-205S	100 to 240 VAC	75 to 264 VAC	50 mA to 5 A (at 55°C)	80 A (60 Hz, 1 cycle)
G9H-210S			50 mA to 10 A (at 55°C)	170 A (60 Hz, 1 cycle)

Note: The load current depends on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in Engineering Data.

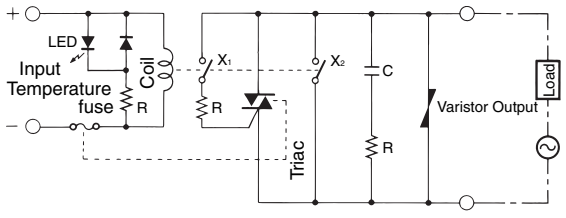
■ Characteristics

Item	Model	G9H-205S	G9H-210S
Operate time		10 ms max.	
Release time		1/2 cycle max. + 10 ms	
Output ON voltage drop		1.6 V max. (RMS) (at 5 A)	1.6 V max. (RMS) (at 10 A)
Leakage current		5 mA max. at 250 VAC	
Inrush current resistance		80 A	170 A
Temperature rise		50°C max. (rated voltage applied using resistance method)	
Insulation resistance		100 MΩ min. (at 500 VDC)	
Dielectric strength		2,000 VAC 50/60 Hz 1 min	
Vibration resistance	Destruction	10 to 55 to 10 Hz, 1-mm single amplitude (2-mm double amplitude)	
	Malfunction	10 to 45 to 10 Hz, 1-mm single amplitude (2-mm double amplitude)	
Shock resistance (See note.)	Destruction	1,000 m/s^2	
	Malfunction	100 m/s^2	
Life expectancy	Mechanical	10 million operations min. (switching frequency: 18,000 operations/hour)	
	Electrical	10 million operations min. (resistive load and switching frequency: 18,000 operations/hour)	
Storage temperature		–25 to 70°C (with no icing or condensation)	
Ambient operating temperature		–25 to 60°C (with no icing or condensation)	
Ambient operating humidity		35% to 85%	
Weight		Approx. 25 g	

Note: Value when excited.

Connection

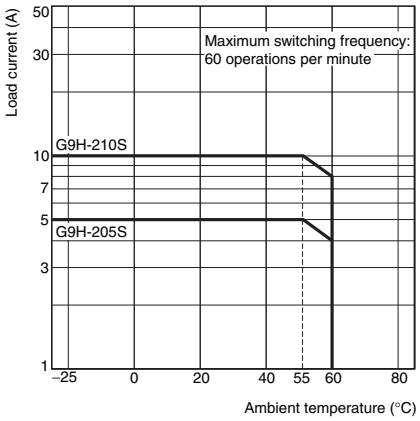
■ Layout



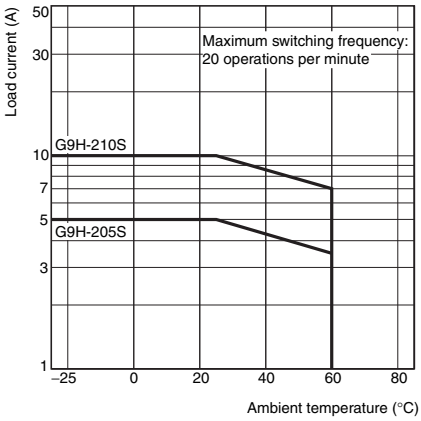
Engineering Data

Load Current vs. Ambient Temperature

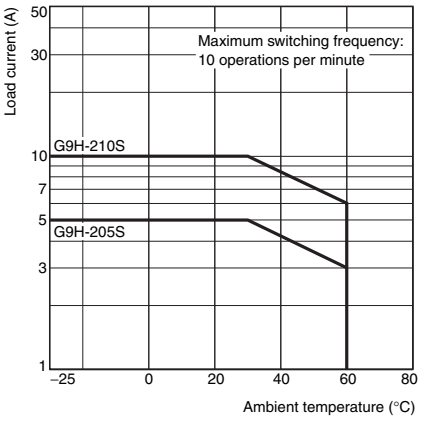
Resistive load



Lamp load (Inrush current: 6 times the rated current, Inrush current time: 2 cycles)

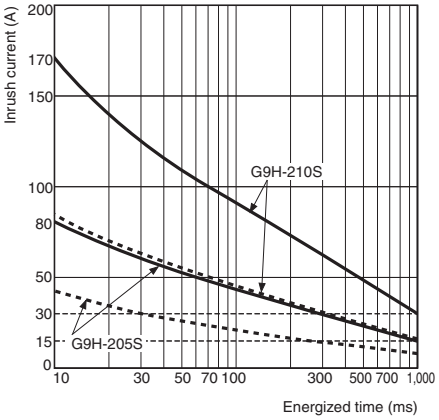


Motor load (Inrush current: 4 times the rated current, Inrush current time: 12 cycles)



Inrush Current Resistance vs. ON Time

Non-repetitive (Keep the inrush current below the dotted line if it occurs repetitively.)

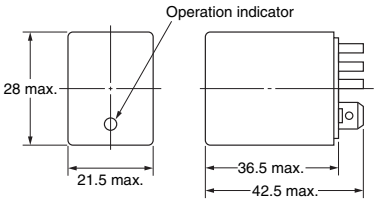


Dimensions

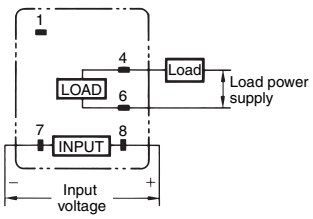
Note: All units are in millimeters unless otherwise indicated.

■ Hybrid Power Relays

G9H-205S
G9H-210S



Terminal Arrangement/Internal Connections (Bottom View)



■ Accessories (Order Separately)

Connecting Socket/Hold-Down Clips

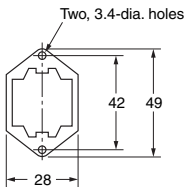
	Front-mounting Sockets	Back-mounting Sockets		
Socket	PTF08A(-E)	PT08	PT08-0	PT08QN
Hold-down Clip	PYC-A1	PYC-P PYC-S	PYC-P	PYC-P PYC-S

Connecting Socket Mounting Plate (t = 1.6)

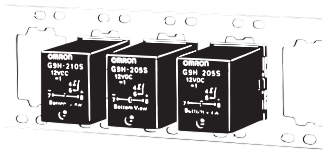
Use a Mounting Plate when two or more Connecting Sockets are mounted side by side.

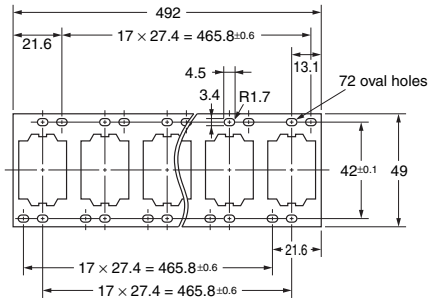
Types of Mounting Plates are available: the PYP-1 (for mounting one Unit) and the PYP-18 (for mounting up to 18 Units). The Mounting Plate for 18 Units can be cut to the desired length before use.

PYP-1



PYP-18





Safety Precautions

Refer to *Safety Precautions for All Solid State Relays*.

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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