

## Solid-state Relay

## G3H/G3HD

### Plug-in Type Power Relays (Same as the LY Series)

- Available in 2 types, DC input-AC input and DC input-DC output.
- Same sizes and terminal arrangement as LY Series.
- Operating indicator provided



### Ordering Information

Isolation	Zero cross function	Indicator	Rated output load (Applicable output load)	Rated input voltage	Model
Photocoupler	Yes	Yes	3 A at 100 to 240 VAC (3 A at 75 to 264 VAC) (see note 2)	5 to 24 VDC	G3H-203SN
Phototriac coupler	No			5 VDC	G3H-203SLN
				12 VDC	
				24 VDC	
Photocoupler	No	No	3 A at 4 to 48 VDC (3 A at 3 to 52.8 VDC) (see note 3)	5 to 24 VDC	G3HD-X03SN
Photocoupler	Yes			4 to 24 VDC	G3H-203S
Phototriac coupler	No			5 VDC	G3H-203SL
				12 VDC	
				24 VDC	
Photocoupler	No		3 A at 4 to 48 VDC (3 A at 3 to 52.8 VDC) (see note 3)	4 to 24 VDC	G3HD-X03S

**Note:** 1. Models to be used with a full-wave rectifier can be ordered by adding "-V" after the model number. This rectifier is available only on models without the zero cross function (e.g., G3H-203SL-V).

2. Product is labelled "250 VAC".

3. Product is labelled "50 VAC".

### ■ Accessories (Order Separately)

#### Connecting Socket

Refer to page 244 for details.

Item	PTF08A-E	PT08	PT08-0	PT08QN
Connecting	Front connecting	Back connecting		
Mounting method/ Terminal type	Track mounted screw terminals	Solder terminals	PCB terminals	Wire-wrapping terminals
Hold-down clip	PYC-A1	PYC-P		

# Specifications

## ■ Ratings

### Input

Model	Rated voltage	Operating voltage	Impedance	Voltage level	
				Must operate voltage	Must release voltage
G3H-203SN	5 to 24 VDC	4 to 28 VDC	1.5 k $\Omega$ <sup>+20%/</sup> <sub>-10%</sub> *	4 VDC max.	1 VDC min.
G3H-203SLN	5 VDC	4 to 6 VDC	390 $\Omega$ ±20%	4 VDC max.	1 VDC min.
	12 VDC	9.6 to 14.4 VDC	900 $\Omega$ ±20%	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 k $\Omega$ ±20%	19.2 VDC max.	
G3HD-X03SN	5 to 24 VDC	4 to 28 VDC	1.5 k $\Omega$ <sup>+20%/</sup> <sub>-10%</sub> *	4 VDC max.	1 VDC min.
G3H-203S	4 to 24 VDC	3 to 28 VDC	1.5 k $\Omega$ <sup>+20%/</sup> <sub>-10%</sub> *	3 VDC max.	1 VDC min.
G3H-203SL	5 VDC	4 to 6 VDC	390 $\Omega$ ±20%	4 VDC max.	1 VDC min.
	12 VDC	9.6 to 14.4 VDC	900 $\Omega$ ±20%	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 k $\Omega$ ±20%	19.2 VDC max.	
G3HD-X03S	4 to 24 VDC	3 to 28 VDC	1.5 k $\Omega$ <sup>+20%/</sup> <sub>-10%</sub> *	3 VDC max.	1 VDC min.

\*Input impedance is the maximum value at the operating voltage.

### Output

Model	Applicable load			
	Rated voltage	Voltage range	Load current	Inrush current
G3H-203SN G3H-203S	100 to 240 VAC	75 to 264 VAC	0.1 to 3 A	45 A 60 Hz, 1 cycle
G3H-203SLN G3H-203SL				
G3HD-X03SN G3HD-X03S	4 to 48 VDC	3 to 52.8 VDC	0.1 to 3 A	18 A (10 ms)

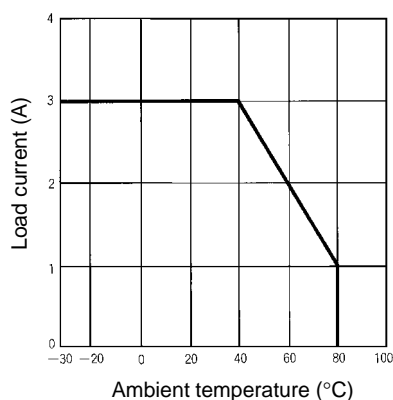
## ■ Characteristics

Model	G3H-203SN/203S	G3H-203SLN/203SL	G3HD-X03SN/X03S
Operate time	1/2 cycle of load power source + 1 ms max.	1 ms max.	0.5 ms max.
Release time	1/2 cycle of load power source + 1 ms max.		2 ms max.
Output ON voltage drop	1.6 V (RMS) max.		1.5 V max.
Leakage current	5 mA max. (at 100 VAC); 10 mA max. (at 200 VAC)	2.5 mA max. (at 100 VAC); 5 mA max. (at 200 VAC)	5 mA max. (at 50 VDC)
Insulation resistance	100 M $\Omega$ min. (at 500 VDC)		
Dielectric strength	1,500 VAC, 50/60 Hz for 1 min		
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude		
Shock resistance	1,000 m/s <sup>2</sup>		
Ambient temperature	Operating: -30°C to 80°C (with no icing) Storage: -30°C to 100°C (with no icing)		
Ambient humidity	45% to 85%		
Weight	Approx. 50 g		

## Engineering Data

### Load Current vs. Ambient Temperature Characteristics

G3H-203SN/203S/203SLN/203SL  
G3HD-X03SN/X03S

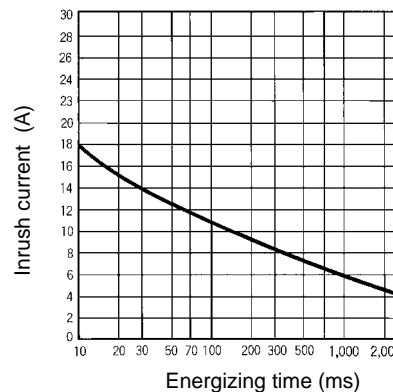
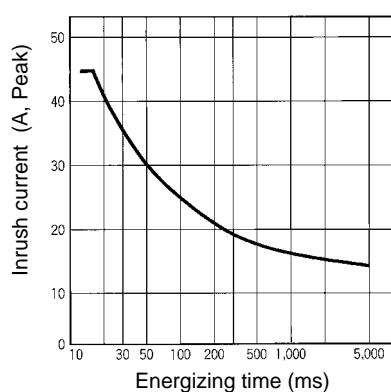


### Inrush Current Resistivity

Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

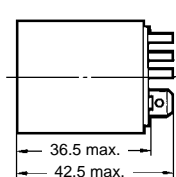
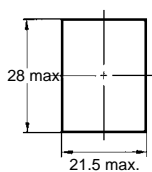
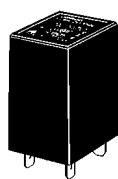
G3H-203SN/203S/203SLN/G3H-203SL

G3HD-X03SN/X03S

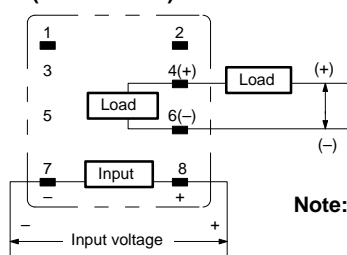


## Dimensions

**Note:** All units are in millimeters unless otherwise indicated.



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



- Note:**
1. The plus and minus symbols shown in the parentheses are for DC loads.
  2. The coil has no polarity.

## Precautions

Refer to pages 11 to 19 for general precautions.

The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

### Connection

With the SSR for DC switching, the load can be connected to either positive or negative output terminal of the SSR.

### Protective Component

Since the SSR does not incorporate an overvoltage absorption component, be sure to connect an overvoltage absorption component when using the SSR under an inductive load.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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