

Solid State Relays G3□-VD


G3H/G3HD

CSM_G3H_G3HD_DS_E_5_1

New Models with International Standards Added to G3H Series (-VD in model number). Same Profile as LY1 and LY2 Bi-power Relays



- Certified by UL, CSA, and VDE (models numbers with a suffix of "-VD").
- Socket type, same size as LY Power Relays.
- Operation indicator provided to confirm input (models numbers with "N" before the suffix).

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



Note: The socket is optional.

Model Number Structure

■ Model Number Legend

G3H-□□□□□□-□
1 2 3 4 5 6 7 8

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Basic Model Name
G3H: Solid State Relay</p> <p>2. Rated Load Power Supply Voltage
2: 200 VAC</p> <p>3, 4. Rated Load Current
03: 3 A</p> <p>5. Terminal Type
S: Plug-in terminals</p> | <p>6. Zero Cross Function
Blank: Equipped with zero cross function
L: Not equipped with zero cross function</p> <p>7. Operation Indicator
Blank: Not equipped with operation indicator
N: Equipped with operation indicator</p> <p>8. Certification
VD: Certified by UL, CSA, and VDE standards</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

G3HD-□□□□□-□
1 2 3 4 5 6 7

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Basic Model Name
G3H: Solid State Relay</p> <p>2. Load Power Supply Type
D: DC</p> <p>3. Rated Load Power Supply Voltage
X: 50 VDC</p> <p>4. Rated Load Current
03: 3 A</p> | <p>5. Terminal Type
S: Plug-in terminals</p> <p>6. Operation Indicator
Blank: Not equipped with operation indicator
N: Equipped with operation indicator</p> <p>7. Certification
VD: Certified by UL, CSA, VDE</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Ordering Information

List of Models

Isolation	Zero cross function	Indicator	Rated output load	Rated input voltage	Model
Photocoupler	Yes	Yes	3 A at 100 to 240 VAC (See note 1.)	5 to 24 VDC	G3H-203SN-VD
Phototriac coupler	No			5 VDC	G3H-203SLN-VD
				12 VDC	
	24 VDC				
Photocoupler	---		3 A at 4 to 48 VDC (See note 2.)	5 to 24 VDC	G3HD-X03SN-VD
Photocoupler	Yes	No	3 A at 100 to 240 VAC (See note 1.)	4 to 24 VDC	G3H-203S-VD
Phototriac coupler	No			5 VDC	G3H-203SL-VD
				12 VDC	
				24 VDC	
Photocoupler	---		3 A at 4 to 48 VDC (See note 2.)	4 to 24 VDC	G3HD-X03S-VD
Photodiode array	---	Yes	2.5 A at 24 to 240 VDC (See note 3.)	12 to 24 VDC	G3HD-202SN-VD

- Note:**
1. Product is labelled "240 VAC".
 2. Product is labelled "48 VDC".
 3. Product is labelled "240 VDC".
 4. When ordering, specify the rated input voltage.

Accessories (Order Separately)

Connecting Sockets

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 (at an Ambient Temperature of 25°C)

Input

Model	Rated voltage	Operating voltage	Impedance	Voltage level	
				Must operate voltage	Must release voltage
G3H-203SN-VD	5 to 24 VDC	4 to 28 VDC	15 mA max. (See note 2.)	4 VDC max.	1 VDC min.
G3H-203SLN-VD	5 VDC	4 to 6 VDC	390 $\Omega \pm 20\%$	4 VDC max.	1 VDC min.
	12 VDC	9.6 to 14.4 VDC	900 $\Omega \pm 20\%$	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 k $\Omega \pm 20\%$	19.2 VDC max.	
G3HD-X03SN-VD	5 to 24 VDC	4 to 28 VDC	1.5 k Ω ^{+20%} / _{-10%} (See note 1.)	4 VDC max.	1 VDC min.
G3H-203S-VD	4 to 24 VDC	3 to 28 VDC	15 mA max. (See note 2.)	3 VDC max.	1 VDC min.
G3H-203SL-VD	5 VDC	4 to 6 VDC	390 $\Omega \pm 20\%$	4 VDC max.	1 VDC min.
	12 VDC	9.6 to 14.4 VDC	900 $\Omega \pm 20\%$	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 k $\Omega \pm 20\%$	19.2 VDC max.	
G3HD-X03S-VD	4 to 24 VDC	3 to 28 VDC	1.5 k Ω ^{+20%} / _{-10%} (See note 1.)	3 VDC max.	1 VDC min.
G3HD-202SN-VD	12 to 24 VDC	9.6 to 28.8 VDC	25 mA max. (at 24 VDC) (See note 2.)	9.6 VDC max.	1 VDC min.

- Note:**
1. The input impedance is given for the maximum operating voltage. For details, refer to the *Technical Guide for Solid State Relays*.
 2. With constant current input system.

Output

Model	Applicable load			
	Rated load voltage	Load voltage range	Load current	Inrush current
G3H-203SN-VD G3H-203S-VD G3H-203SLN-VD G3H-203SL-VD	100 to 240 VAC	75 to 264 VAC	0.1 to 3 A at 40°C	45 A 60 Hz, 1 cycle
G3HD-X03SN-VD G3HD-X03S-VD	4 to 48 VDC	3 to 52.8 VDC	0.1 to 3 A at 40°C	18 A (10 ms)
G3HD-202SN-VD	24 to 240 VDC	19.2 to 264 VDC	0.001 to 2.5 A at 40°C	20 A (10 ms)

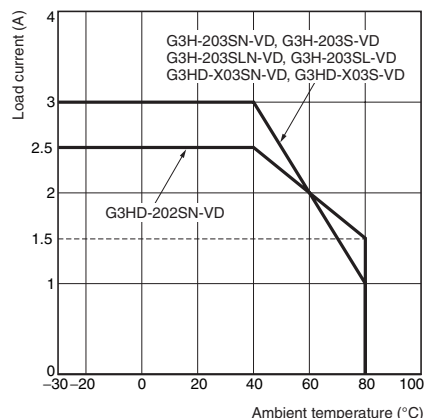
Characteristics

Model	G3H-203SN-VD/203S-VD	G3H-203SLN-VD/203SL-VD	G3HD-X03SN-VD/X03S-VD	G3HD-202SN-VD
Operate time	1/2 cycle of load power source + 1 ms max.	1 ms max.	0.5 ms max.	5 ms max.
Release time	1/2 cycle of load power source + 1 ms max.		2 ms max.	10 ms max.
Output ON voltage drop	1.6 V (RMS) max.			3 V max. (output ON-resistance: 1.25 Ω 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)	0.1 mA max. (at 200 VDC)
Insulation resistance	100 MΩ min. (at 500 VDC)			
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min		1,500 VAC, 50/60 Hz for 1 min	
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude			
Shock resistance	Destruction: 1,000 m/s ²			
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%			
Certified standards	G3H: UL508, CSA C22.2 No. 14, EN60947-4-3 G3HD: UL508, CSA C22.2 No. 14, EN60950-1			
EMC	Emission: EN55011 Group 1 Class B Immunity: EN61000-6-2			
Weight	Approx. 50 g			

Engineering Data

Load Current vs. Ambient Temperature Characteristics

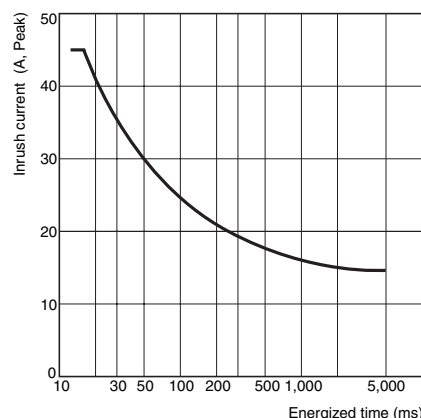
G3H-203SN-VD/203S-VD/203SLN-VD/203SL-VD
G3HD-X03SN-VD/X03S-VD
G3HD-202SN-VD



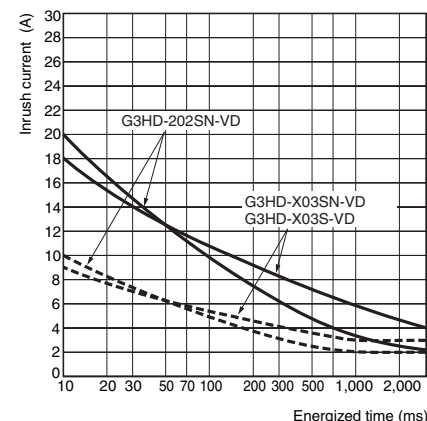
One Cycle Surge Current: Non-repetitive

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

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

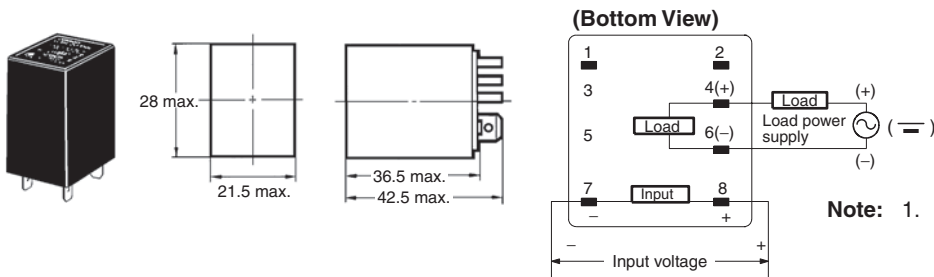


G3HD-X03SN-VD/X03S-VD
G3HD-202SN-VD



Dimensions

Note: All units are in millimeters unless otherwise indicated.



- Note:**
1. The plus and minus symbols shown in the parentheses are for DC loads.
 2. The coil has no polarity.
 3. The load is possible to connect either + side or - side.

Safety Precautions

■ Precautions for Correct Use

Please observe the following precautions to prevent failure to operate, malfunction, or undesirable effect on product performance.

Connection

The SSR for DC switching use can connect to a load regardless of the polarity of the positive and negative output terminals.

Close Mounting of Multiple Relays

If multiple Relays are mounted side by side, be aware that the outer wall of each SSR works as a heat sink.

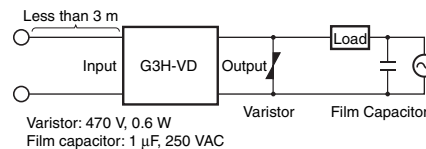
The SSR casing serves to dissipate heat. Install the Relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

Protective Terminal

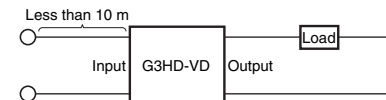
No overvoltage absorption element is built in. (The G3HD-202SN has a built-in varistor.) Be sure to connect an overvoltage absorption element when using the G3H or G3HD with an inductive load.

EMC Directive Compliance

1. AC-switching models comply with EMC Directives under the following conditions ("VD" models only).



- Connect a varistor between the output terminals.
 - Connect a film capacitor to the load power supply.
 - The input cable must be less than 3 m.
2. DC-switching models comply with EMC Directives under the following conditions ("VD" models only).



- The input cable must be less than 10 m.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

In the interest of product improvement, specifications are subject to change without notice.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2011.4

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

<http://www.ia.omron.com/>

(c)Copyright OMRON Corporation 2011 All Right Reserved.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Solid State Relays - Industrial Mount](#) category:

Click to view products by [Omron](#) manufacturer:

Other Similar products are found below :

[D2440-C](#) [H10CA4890](#) [D4875C](#) [1395831-1](#) [1616010-6](#) [BR312BY](#) [A-1326](#) [H10CA4850](#) [H12CA4890VL](#) [RA2410-D06](#) [RA2410HA06T](#)
[D1202F](#) [D53TP50-10](#) [W230E-1-12](#) [W230T-3-12](#) [1-1617030-3](#) [1-1617033-7](#) [MS2-D2420](#) [MS2-D2430](#) [A-1440](#) [RJ1P60V50E](#) [HS501DR-](#)
[D2425](#) [RN1F48I50](#) [70.362.1028.0](#) [7-1393030-8](#) [Z5.509.0828.0](#) [G3DZ-4B DC24](#) [G3DZ-F4B DC12](#) [2912138](#) [SSRDAC10](#) [RV8S-L-A240-](#)
[D24](#) [RV8S-L-A240-D6](#) [RV8S-S-A240-D24](#) [RV8S-S-A240-D6](#) [RV8S-S-A240Z-D24](#) [RV8S-S-D24-A240](#) [RV8S-S-D48-A120](#) [RN1F12V50](#)
[RJ1P60I30E](#) [RJ1P60V30E](#) [SO967860](#) [SMT8628521](#) [SO869970](#) [SOD867180](#) [SAL961360](#) [SO867970](#) [SOB863860](#) [SOB867640](#) [SOB942360](#)
[G3PH-5150B DC5-24](#)