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Solid State Relays for Heaters

G3PE-Single-phase

CSM_G3PE-Single-phase_DS_E_2_6

Compact, Slim-profile SSRs with Heat Sinks. Models with No Zero Cross for a Wide Range of Applications.

- RoHS compliant.
- Models also available with no zero cross
- Surge pass protection improved surge dielectric strength for output currents. (OMRON testing)
- Compact with a slim profile.
- Mount to DIN Track or with screws.
- Conforms to UL, CSA, and EN standards (TÜV certification).



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

⚠ Refer to *Safety Precautions for All G3PE Models.*

Ordering Information

List of Models

Number of phases	Insulation method	Operation indicator	Rated input voltage	Zero cross function	Applicable load ✻	Model
Single-phase	Phototriac coupler	Yes (yellow)	12 to 24 VDC	Yes	15 A, 100 to 240 VAC	**G3PE-215B DC12-24**
					25 A, 100 to 240 VAC	**G3PE-225B DC12-24**
					35 A, 100 to 240 VAC	**G3PE-235B DC12-24**
					45 A, 100 to 240 VAC	**G3PE-245B DC12-24**
				No	15 A, 100 to 240 VAC	**G3PE-215BL DC12-24**
					25 A, 100 to 240 VAC	**G3PE-225BL DC12-24**
					35 A, 100 to 240 VAC	**G3PE-235BL DC12-24**
					45 A, 100 to 240 VAC	**G3PE-245BL DC12-24**
				Yes	15 A, 200 to 480 VAC	**G3PE-515B DC12-24**
					25 A, 200 to 480 VAC	**G3PE-525B DC12-24**
					35 A, 200 to 480 VAC	**G3PE-535B DC12-24**
					45 A, 200 to 480 VAC	**G3PE-545B DC12-24**
				No	15 A, 200 to 480 VAC	**G3PE-515BL DC12-24**
					25 A, 200 to 480 VAC	**G3PE-525BL DC12-24**
					35 A, 200 to 480 VAC	**G3PE-535BL DC12-24**
					45 A, 200 to 480 VAC	**G3PE-545BL DC12-24**

✻ The applicable load current depends on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in *Engineering Data* on page 3.

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Specifications

Certification

UL (File No.E64562), CSA (File No.LR35535), and TÜV (File No.R50124433, EN60947-4-3)

Ratings

Input (at an Ambient Temperature of 25°C)

Item / Model	Rated voltage	Operating voltage range	Rated input current	Voltage level	
				Must operate voltage	Must release voltage
G3PE-□□□B	12 to 24 VDC	9.6 to 30 VDC	7 mA max.	9.6 VDC max.	1.0 VDC max.
G3PE-□□□BL			15 mA max.		

Output

Model / Item	G3PE-215B(L)	G3PE-225B(L)	G3PE-235B(L)	G3PE-245B(L)	G3PE-515B(L)	G3PE-525B(L)	G3PE-535B(L)	G3PE-545B(L)
Rated load voltage	100 to 240 VAC (50/60 Hz)				200 to 480 VAC (50/60 Hz)			
Load voltage range	75 to 264 VAC (50/60 Hz)				180 to 528 VAC (50/60 Hz)			
Applicable load current *	0.1 to 15 A (at 40°C)	0.1 to 25 A (at 40°C)	0.5 to 35 A (at 25°C)	0.5 to 45 A (at 25°C)	0.1 to 15 A (at 40°C)	0.1 to 25 A (at 40°C)	0.5 to 35 A (at 25°C)	0.5 to 45 A (at 25°C)
Inrush current resistance	150 A (60 Hz, 1 cycle)	220 A (60 Hz, 1 cycle)	440 A (60 Hz, 1 cycle)		150 A (60 Hz, 1 cycle)	220 A (60 Hz, 1 cycle)	440 A (60 Hz, 1 cycle)	
Permissible I^2t (reference value)	121A^2s	260A^2s	1,260A^2s		128A^2s	1,350A^2s		6,600A^2s
Applicable load (resistive load)	3 kW (at 200 VAC)	5 kW (at 200 VAC)	7 kW (at 200 VAC)	9 kW (at 200 VAC)	6 kW (at 400 VAC)	10 kW (at 400 VAC)	14 kW (at 400 VAC)	18 kW (at 400 VAC)

* The applicable load current depends on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in *Engineering Data* on page 3.

Characteristics

Model / Item	G3PE -215B	G3PE -225B	G3PE -235B	G3PE -245B	G3PE -215BL	G3PE -225BL	G3PE -235BL	G3PE -245BL
Operate time	1/2 of load power source cycle + 1 ms max.				1 ms max.			
Release time	1/2 of load power source cycle + 1 ms max.							
Output ON voltage drop	1.6 V (RMS) max.							
Leakage current	10 mA max. (at 200 VAC)							
Insulation resistance	100 MΩ min. (at 500 VDC)							
Dielectric strength	2,500 VAC, 50/60 Hz for 1 min							
Vibration resistance	10 to 55 to10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude) (Mounted to DIN track)							
Shock resistance	Destruction: 294 m/s^2 (Mounted to DIN track)							
Ambient storage temperature	–30 to 100°C (with no icing or condensation)							
Ambient operating temperature	–30 to 80°C (with no icing or condensation)							
Ambient operating humidity	45% to 85%							
Weight	Approx. 240 g		Approx. 400 g		Approx. 240 g		Approx. 400 g	

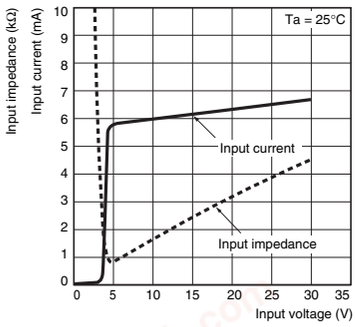
Model / Item	G3PE -515B	G3PE -525B	G3PE -535B	G3PE -545B	G3PE -515BL	G3PE -525BL	G3PE -535BL	G3PE -545BL
Operate time	1/2 of load power source cycle + 1 ms max.				1 ms max.			
Release time	1/2 of load power source cycle + 1 ms max.							
Output ON voltage drop	1.8 V (RMS) max.							
Leakage current	20 mA max. (at 480 VAC)							
Insulation resistance	100 MΩ min. (at 500 VDC)							
Dielectric strength	2,500 VAC, 50/60 Hz for 1 min							
Vibration resistance	10 to 55 to10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude) (Mounted to DIN track)							
Shock resistance	Destruction: 294 m/s^2 (Mounted to DIN track)							
Ambient storage temperature	–30 to 100°C (with no icing or condensation)							
Ambient operating temperature	–30 to 80°C (with no icing or condensation)							
Ambient operating humidity	45% to 85%							
Weight	Approx. 240 g		Approx. 400 g		Approx. 240 g		Approx. 400 g	

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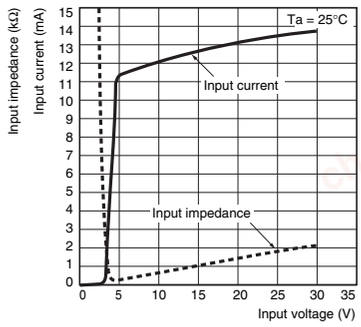
Engineering Data

Input Voltage vs. Input Impedance and Input Voltage vs. Input Current

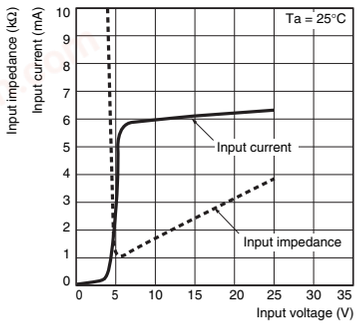
G3PE-2□□B



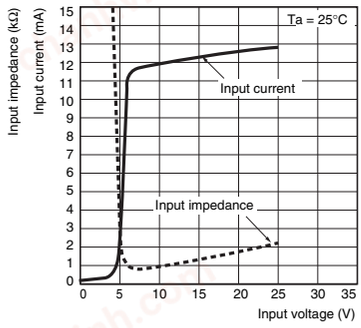
G3PE-2□□BL



G3PE-5□□B

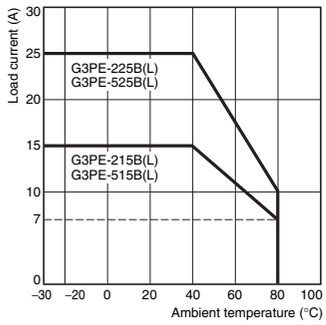


G3PE-5□□BL

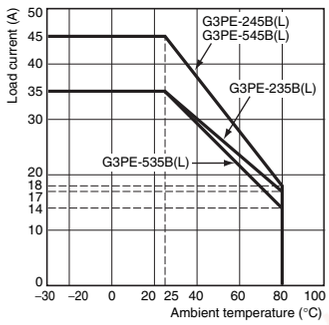


Load Current vs. Ambient Temperature

G3PE-215B(L), G3PE-225B(L)
G3PE-515B(L), G3PE-525B(L)



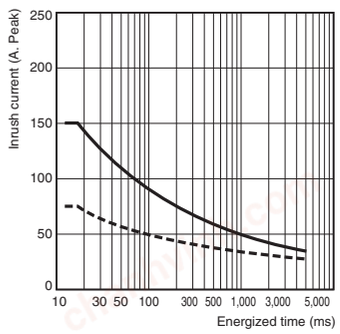
G3PE-235B(L), G3PE-245B(L)
G3PE-535B(L), G3PE-545B(L)



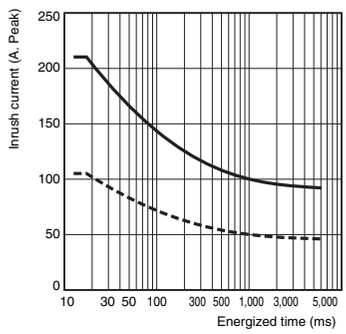
Inrush Current Resistance: Non-repetitive

Keep the inrush current to below the inrush current resistance value (i.e., below the broken line) if it occurs repetitively.

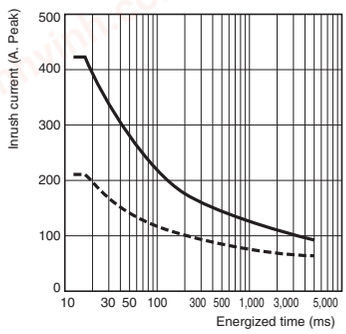
G3PE-215B(L), G3PE-515B(L)



G3PE-225B(L), G3PE-525B(L)



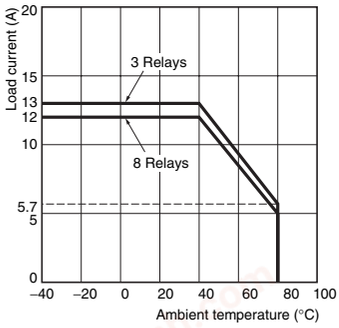
G3PE-235B(L), G3PE-245B(L)
G3PE-535B(L), G3PE-545B(L)



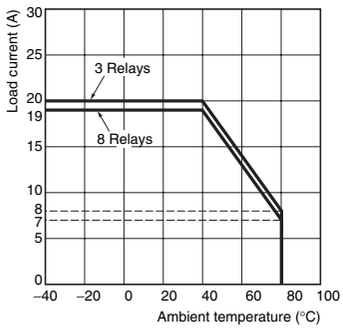
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Close Mounting (3 or 8 SSRs)

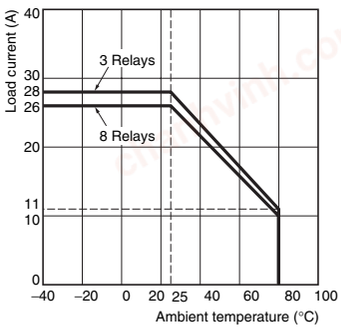
G3PE-215B(L)



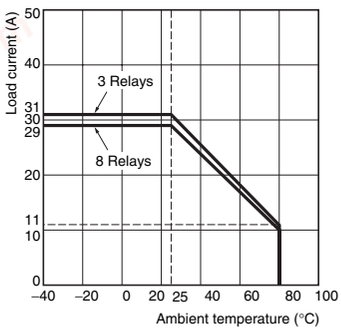
G3PE-225B(L)



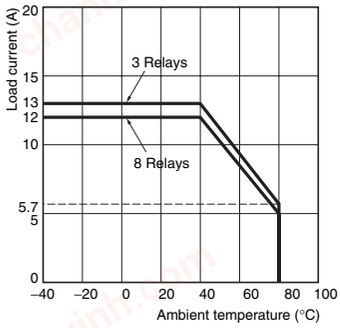
G3PE-235B(L)



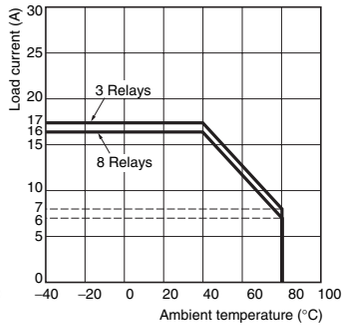
G3PE-245B(L)



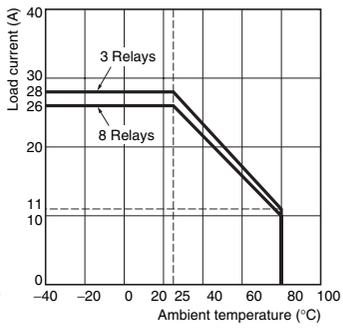
G3PE-515B(L)



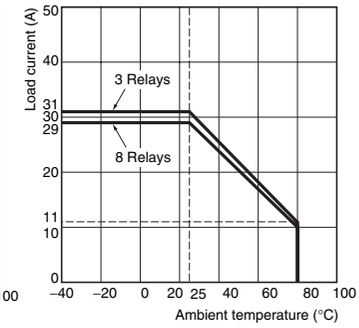
G3PE-525B(L)



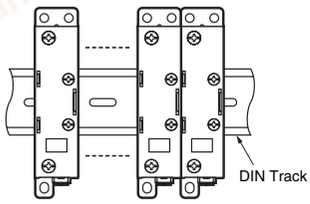
G3PE-535B(L)



G3PE-545B(L)



Close Mounting Example



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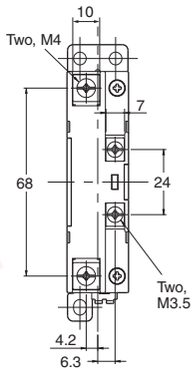
Dimensions

Note: All units are in millimeters unless otherwise indicated.

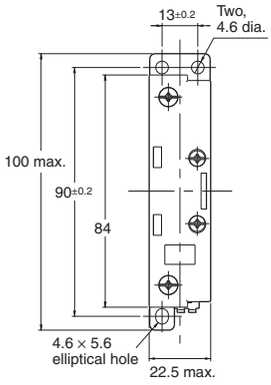
Solid State Relays

G3PE-215B(L)
G3PE-225B(L)
G3PE-515B(L)
G3PE-525B(L)

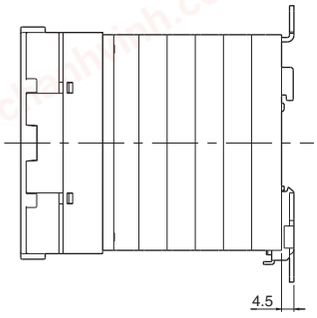




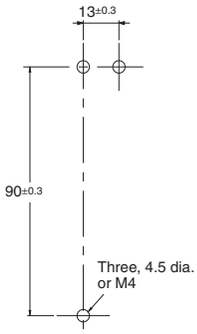
Note: Without terminal cover.

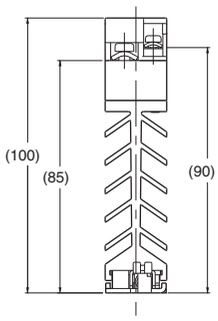


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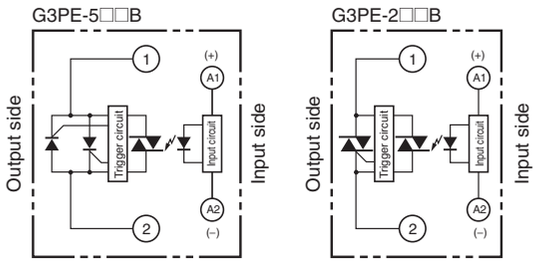


Mounting Holes





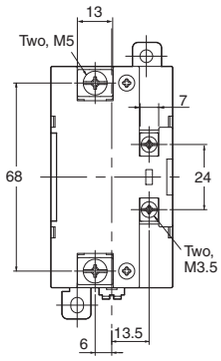
Terminal Arrangement/Internal Circuit Diagram



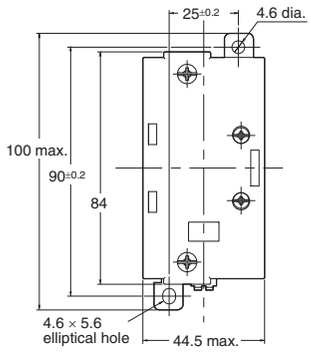
The G3PE-525B is shown above.

G3PE-235B(L)
G3PE-245B(L)
G3PE-535B(L)
G3PE-545B(L)

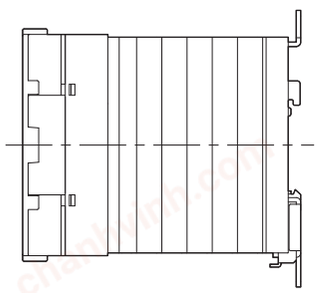




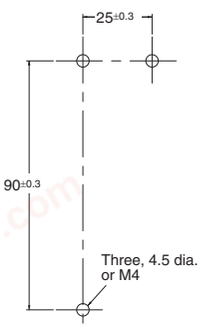
Note: Without terminal cover.

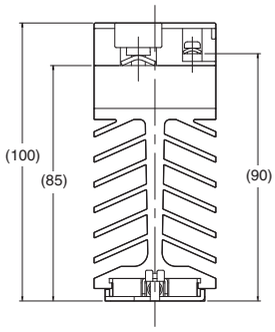


Note: With terminal cover.

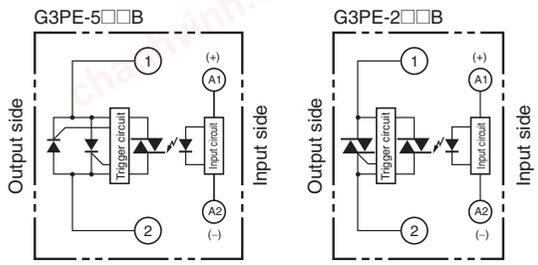


Mounting Holes





Terminal Arrangement/Internal Circuit Diagram



The G3PE-545B is shown above.

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Terms and Conditions Agreement

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.

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Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.
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2021.12

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

OMRON Corporation
Industrial Automation Company

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

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