

G3PE-Single-phase


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



- SCCR of 10kA (UL 508)
- 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 cULus standards 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 4.

Specifications

Certification

cULus (File No.E64562) and TÜV (File No.R50124433, EN60947-4-3)

Ratings

Input (at an Ambient Temperature of 25°C)

Model	Item	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

Item	Model	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 I²t (reference value)		121A ² s	260A ² s	1,260A ² s		128A ² s	1,350A ² s		6,600A ² s
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 4.

Characteristics

Item	Model	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 to 10 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%							
Sealing		IP20							
Weight		Approx. 240 g		Approx. 400 g		Approx. 240 g		Approx. 400 g	
SCCR (UL508) *	Harmonized protection fuse	50 kA							
	Harmonized protection MCCB	10 kA							
MTTFd (Reference value)		1,000 years min.							

Item	Model	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 to 10 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%							
Sealing		IP20							
Weight		Approx. 240 g		Approx. 400 g		Approx. 240 g		Approx. 400 g	
SCCR (UL508) *	Harmonized protection fuse	50 kA							
	Harmonized protection MCCB	---		10 kA		---		10 kA	
MTTFd (Reference value)		1,000 years min.							

* Obtained through coordination with fuses and MCCB under the conditions below.

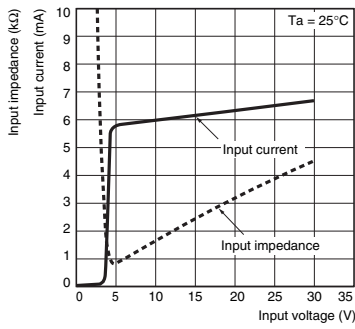
Applicable SSR	SCCR Value	Fuse
G3PE-215B (L)	50 kA	30 A (Class CC) 600 V 60A (Class J, T, CD) 600 V 100 A (Class T) 300 V
G3PE-225B (L)		
G3PE-235B (L)		
G3PE-245B (L)		
G3PE-515B (L)		30 A (Class J, T, CC) 600 V
G3PE-525B (L)		
G3PE-535B (L)		
G3PE-545B (L)		

Applicable SSR	SCCR Value	MCCB (UL certified)
G3PE-215B (L)	10 kA	60 A
G3PE-225B (L)		
G3PE-235B (L)		
G3PE-245B (L)		
G3PE-515B (L)		---
G3PE-525B (L)		
G3PE-535B (L)		
G3PE-545B (L)		

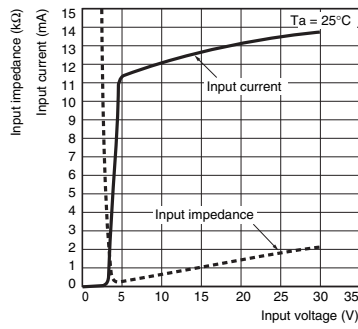
Engineering Data

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

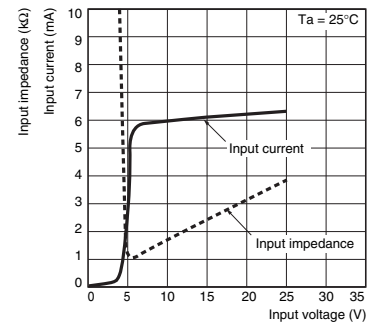
G3PE-2□□B



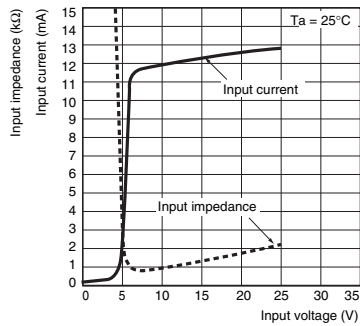
G3PE-2□□BL



G3PE-5□□B

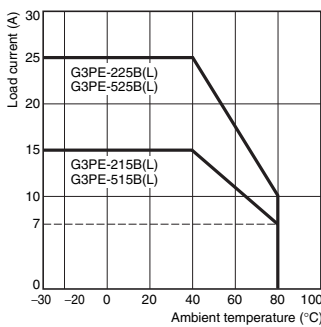


G3PE-5□□BL

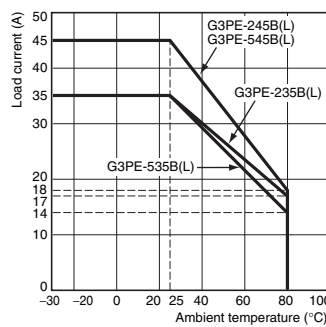


Load Current vs. Ambient Temperature

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



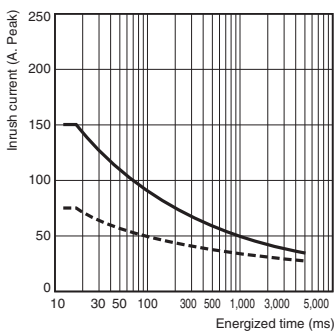
G3PE-235B(L), G3PE-245B(L)
G3PE-535B(L), G3PE-545B(L)



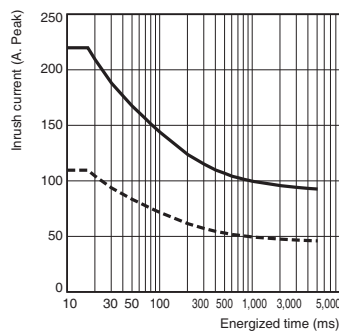
Inrush Current Resistance: Non-repetitive

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

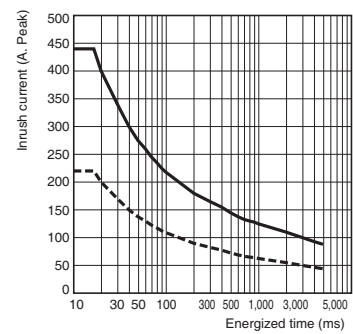
G3PE-215B(L), G3PE-515B(L)



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

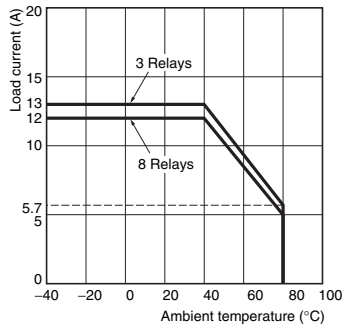


G3PE-235B(L), G3PE-245B(L)
G3PE-535B(L), G3PE-545B(L)

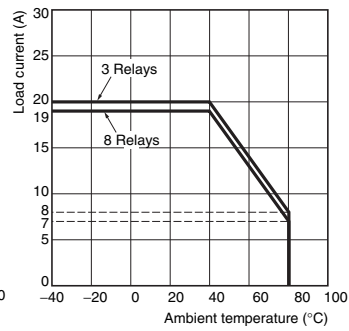


Close Mounting (3 or 8 SSRs)

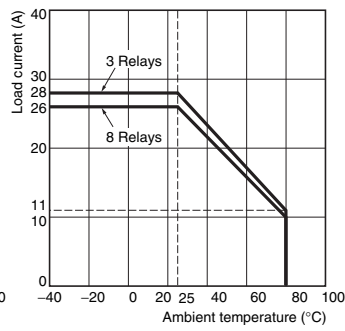
G3PE-215B(L)



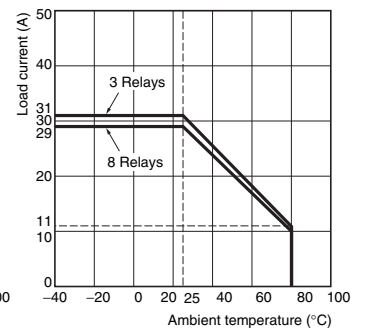
G3PE-225B(L)



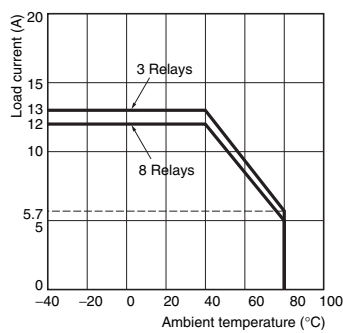
G3PE-235B(L)



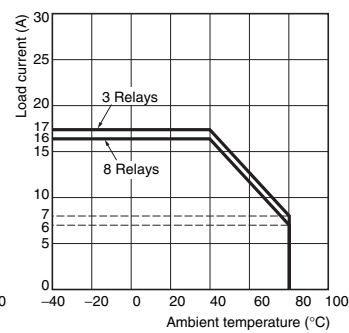
G3PE-245B(L)



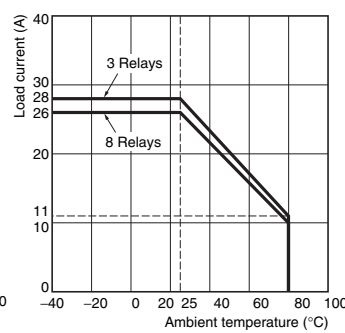
G3PE-515B(L)



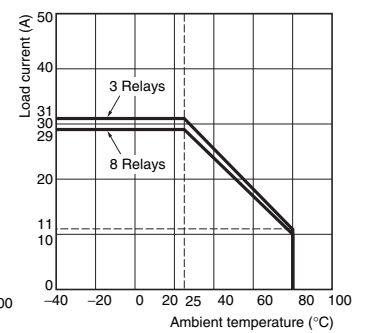
G3PE-525B(L)



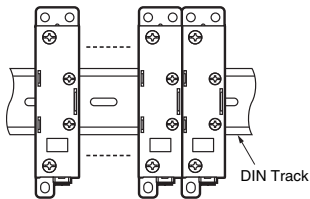
G3PE-535B(L)



G3PE-545B(L)



Close Mounting Example

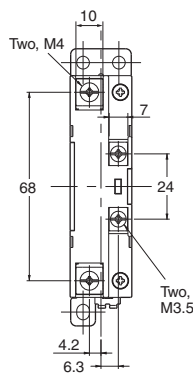


Dimensions

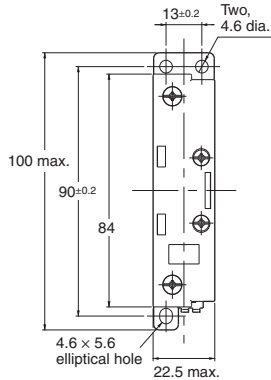
Note: All units are in millimeters unless otherwise indicated.

Solid State Relays

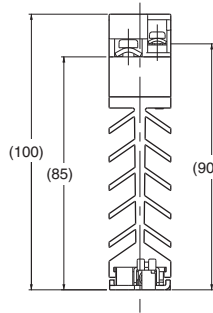
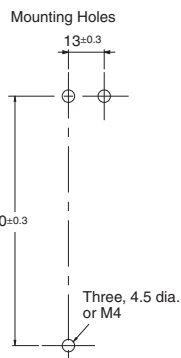
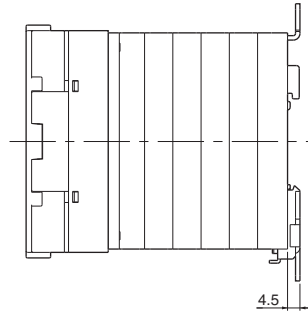
- G3PE-215B(L)
- G3PE-225B(L)
- G3PE-515B(L)
- G3PE-525B(L)



Note: Without terminal cover.

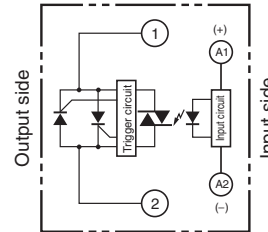


Note: With terminal cover.

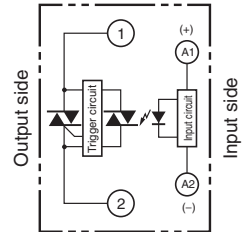


Terminal Arrangement/Internal Circuit Diagram

G3PE-5□□B

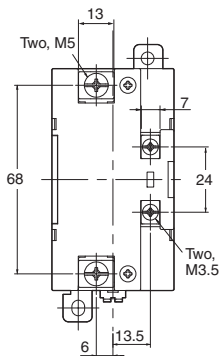


G3PE-2□□B

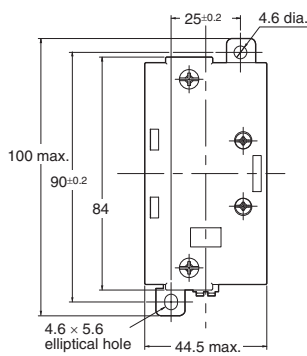


The G3PE-525B is shown above.

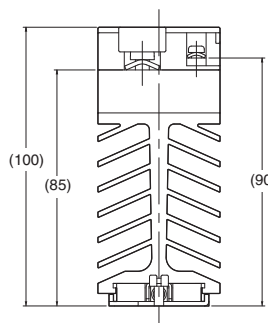
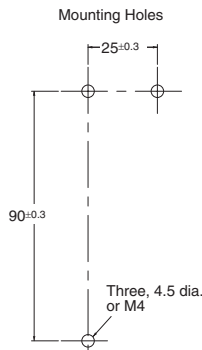
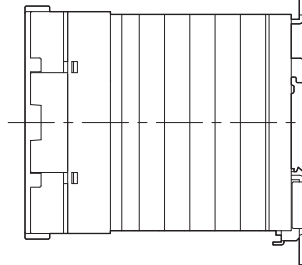
- G3PE-235B(L)
- G3PE-245B(L)
- G3PE-535B(L)
- G3PE-545B(L)



Note: Without terminal cover.

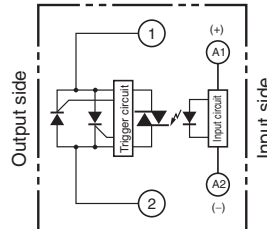


Note: With terminal cover.

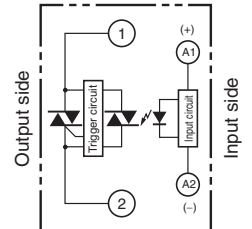


Terminal Arrangement/Internal Circuit Diagram

G3PE-5□□B



G3PE-2□□B



The G3PE-545B is shown above.

Terms and Conditions Agreement

Read and understand this catalog.

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NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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