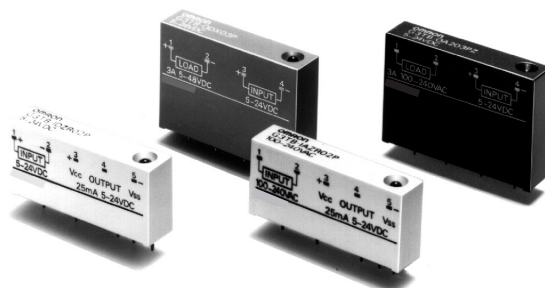


# Solid State Relay G3TB

## I/O SSR Used as Interface between Logic Circuitry and Load

- A variety of AC/DC input and output modules classified by color.
- Operation can be monitored easily through an LED indicator.
- Dielectric strength of 4,000 V between input and output terminals.
- Certified by UL and CSA.



## Ordering Information

### Input Modules

Isolation	Indicator	Logic level		Rated input voltage	Model
		Supply voltage	Supply current		
Photocoupler	Yes	4 to 32 VDC	25 mA	100 to 240 VAC	G3TB-IAZR02P-US
				4 to 24 VDC	G3TB-IDZR02P-US

### Output Modules

Isolation	Zero cross function	Indicator	Rated output voltage (Applicable output load)	Rated input voltage	Model	
Photocoupler	Yes	Yes	3 A at 100 to 240 VAC (3 A at 75 to 264 VAC)	5 to 24 VDC	G3TB-OA203PZ-US	
		No		4 to 24 VDC	G3TB-OA203PZM-US	
	No	Yes		5 to 24 VDC	G3TB-OA203PL-US	
		No		4 to 24 VDC	G3TB-OA203PLM-US	
	---	Yes	No	3 A at 5 to 48 VDC (3 A at 4 to 60 VAC)	5 to 24 VDC	G3TB-ODX03P-US
					4 to 24 VDC	G3TB-ODX03PM-US
		Yes	No	1.5 A at 48 to 200 VDC (1.5 A at 40 to 200 VDC)	5 to 24 VDC	G3TB-OD201P-US
					4 to 24 VDC	G3TB-OD201PM-US

**Note:** When ordering, specify the rated input voltage.

# Specifications

## ■ Ratings (at an Ambient Temperature of 25°C)

### Input Module

#### Input

Model	Rated voltage	Operating voltage	Input current	Voltage level	
				Must operate voltage	Must release voltage
G3TB-IAZR02P-US	100 to 240 VAC	80 to 264 VDC	5 mA max.	80 VAC max.	10 VAC min.
G3TB-IDZR02P-US	4 to 24 VDC	3 to 32 VDC		3 VDC max.	1 VDC min.

#### Output

Model	Logic level supply voltage	Output breakdown voltage	Output current
G3TB-IAZR02P-US	4 to 32 VDC	32 VDC max.	25 mA max.
G3TB-IDZR02P-US			

### Output Module

#### Input

Model	Rated voltage	Operating voltage	Input current	Voltage level	
				Must operate voltage	Must release voltage
G3TB-OA203PZ-US	5 to 24 VDC	4 to 32 VDC	5 mA max.	4 VDC max.	1 VDC min.
G3TB-OA203PZM-US	4 to 24 VDC	3 to 32 VDC		3 VDC max.	
G3TB-OA203PL-US	5 to 24 VDC	4 to 32 VDC		4 VDC max.	
G3TB-OA203PLM-US	4 to 24 VDC	3 to 32 VDC		3 VDC max.	
G3TB-ODX03P-US	5 to 24 VDC	4 to 32 VDC		4 VDC max.	
G3TB-ODX03PM-US	4 to 24 VDC	3 to 32 VDC		3 VDC max.	
G3TB-OD201P-US	5 to 24 VDC	4 to 32 VDC		4 VDC max.	
G3TB-OD201PM-US	4 to 24 VDC	3 to 32 VDC		3 VDC max.	

#### Output

Model	Applicable load			
	Rated load voltage	Load voltage range	Load current (See note.)	Inrush current
G3TB-OA203PZ-US	100 to 240 VAC	75 to 264 VAC	0.05 to 3 A	45 A (60 Hz, 1 cycle)
G3TB-OA203PZM-US				
G3TB-OA203PL-US				
G3TB-OA203PLM-US				
G3TB-ODX03P-US	5 to 48 VDC	4 to 60 VDC	0.01 to 3 A	18 A (10 ms)
G3TB-ODX03PM-US				
G3TB-OD201P-US	48 to 200 VDC	40 to 200 VDC	0.01 to 1.5 A	12 A (10 ms)
G3TB-OD201PM-US				

Note: The minimum current value is measured at 10°C min.

## ■ Characteristics

### Input Module

Item	G3TB-IAZR02P-US	G3TB-IDZR02P-US
Operate time	20 ms max.	1 ms max.
Release time	20 ms max.	1 ms max.
Output ON voltage drop	0.4 V max.	
Leakage current	100 μA max.	
Insulation resistance	100 MΩ min. (at 500 VDC)	
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between input and output	
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm single amplitude	
Shock resistance	Malfunction: 1,000 m/s <sup>2</sup>	
Ambient temperature	Operating: -30°C to 80°C (with no icing or condensation) Storage: -30°C to 100°C (with no icing or condensation)	
Ambient humidity	Operating: 45% to 85%	
Certified standards	UL File No. E41515/CSA File No. LR35535/TÜV R90381 (VDE0806)	
Weight	Approx. 22 g	

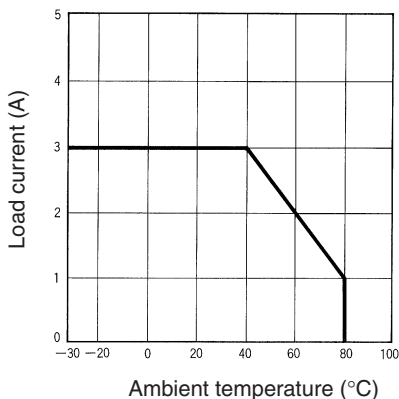
### Output Module

Item	G3TB-OA203PZ-US	G3TB-OA203PZM-US	G3TB-OA203PL-US	G3TB-OA203PLM-US	G3TB-ODX03P-US	G3TB-ODX03PM-US	G3TB-OD201P-US	G3TB-OD201PM-US
Operate time	1/2 of load power source cycle + 1 ms max.		1 ms max.		0.5 ms max.			
Release time	1/2 of load power source cycle + 1 ms max.				2 ms max.			
Output ON voltage drop	1.6 V max.						2.5 V max.	
Leakage current	5 mA max. (at 200 VAC)				1 mA max.			
Insulation resistance	100 MΩ min. (at 500 VDC)							
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between input and output							
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm single amplitude							
Shock resistance	Malfunction: 1,000 m/s <sup>2</sup>							
Ambient temperature	Operating: -30°C to 80°C (with no icing or condensation) Storage: -30°C to 100°C (with no icing or condensation)							
Ambient humidity	Operating: 45% to 85%							
Certified standards	UL File No. E64562/CSA File No. LR35535/TÜV R90381 (VDE0806)							
Weight	Approx. 32 g							

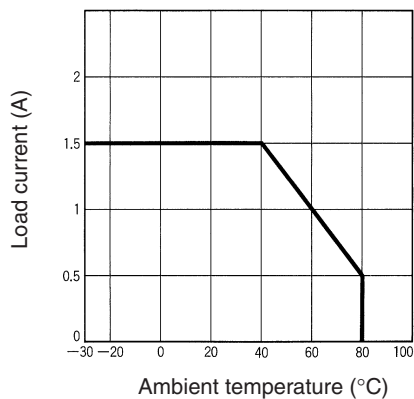
# Engineering Data

## Load Current vs. Ambient Temperature Characteristics

G3TB-OA203PZ-US/-OA203PZM-US  
 /-OA203PL-US/-OA203PLM-US/  
 G3TB-ODX03P-US/-ODX03PM-US



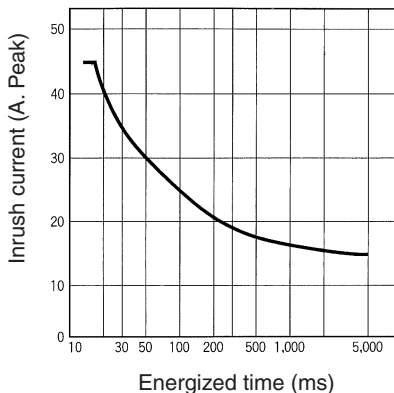
G3TB-OD201P-US/-OD201PM-US



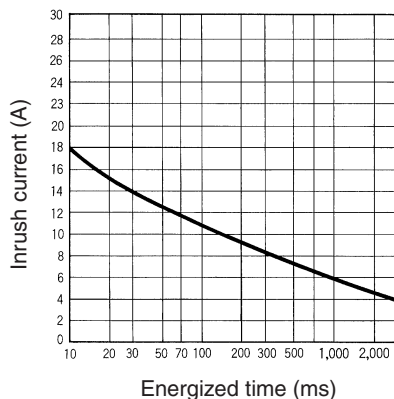
## One Cycle Surge Current: Non-repetitive

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

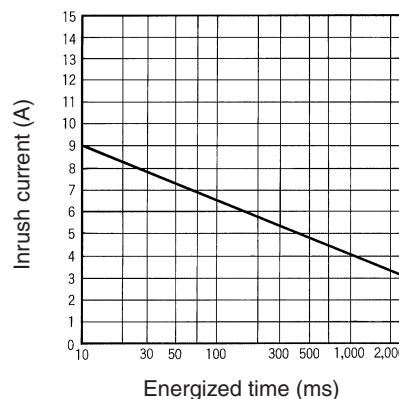
G3TB-OA203PZ-US/-OA203PZM-US/  
 -OA203PL-US/-OA203PLM-US



G3TB-ODX03P-US/-ODX03PM-US



G3TB-OD201P-US/-OD201PM-US



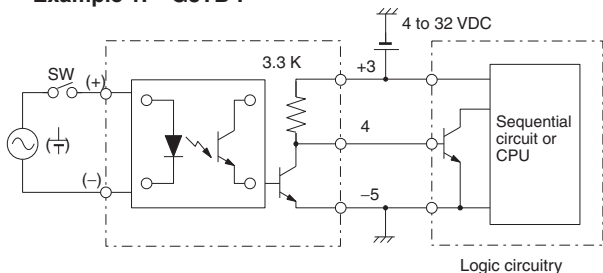
# Operation

## ■ Circuit Configuration

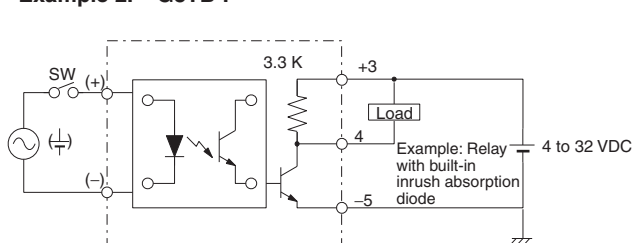
Type	Model	Case color	Indicator	Circuit
AC input	G3TB-IAZR02P-US	Yellow	Yes	
DC input	G3TB-IDZR02P-US	White	Yes	
AC output	G3TB-OA203PZ-US G3TB-OA203PL-US	Black	Yes	
	G3TB-OA203PZM-US G3TB-OA203PLM-US		No	
DC output	G3TB-ODX03P-US G3TB-OD201P-US	Red	Yes	
	G3TB-ODX03PM-US G3TB-OD201PM-US		No	

## Example of Logic Output Circuit

Example 1. G3TB-I



Example 2. G3TB-I

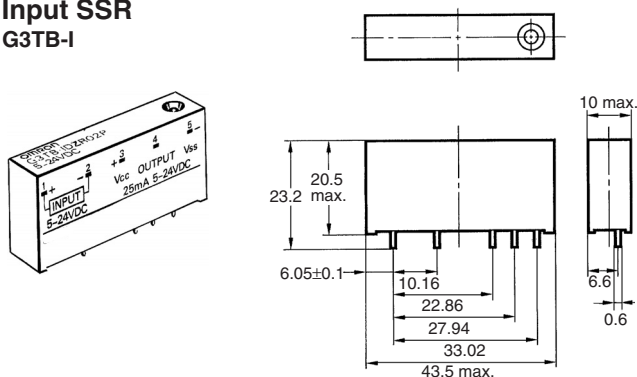


Note: AC- and DC-input versions are available.

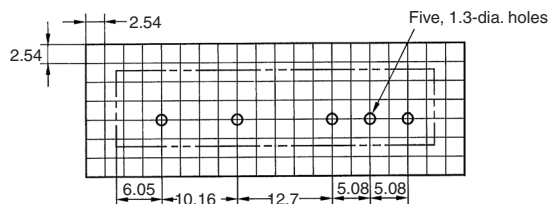
## Dimensions

Note: All units are in millimeters unless otherwise indicated.

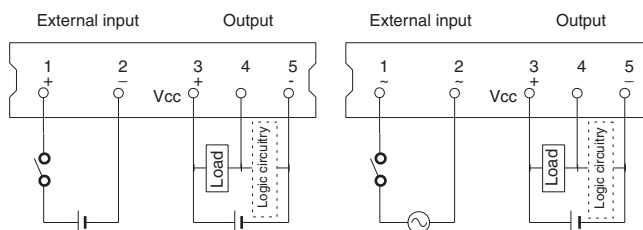
### Input SSR G3TB-I



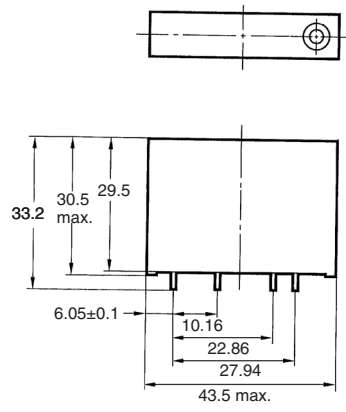
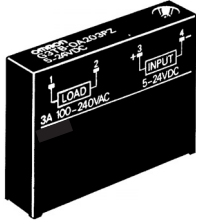
### PCB Dimensions (Bottom View)



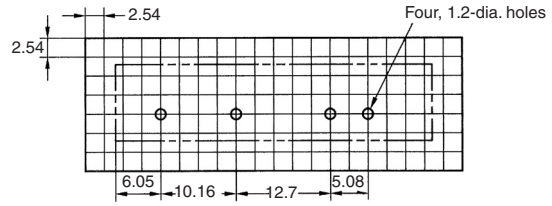
### Terminal Arrangement (Bottom View)



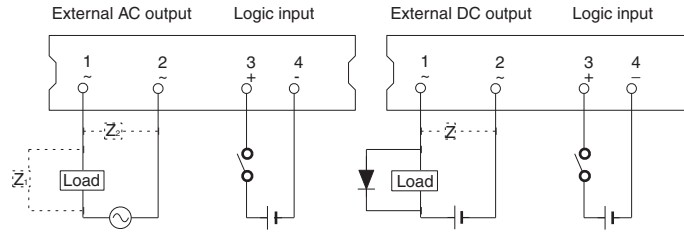
**Output SSR**  
G3TB-O



**PCB Dimensions**  
(Bottom View)



**Terminal Arrangement**  
(Bottom View)



**Note:** Z<sub>1</sub>, Z<sub>2</sub>, and Z refer to overvoltage absorption elements that you should connect.

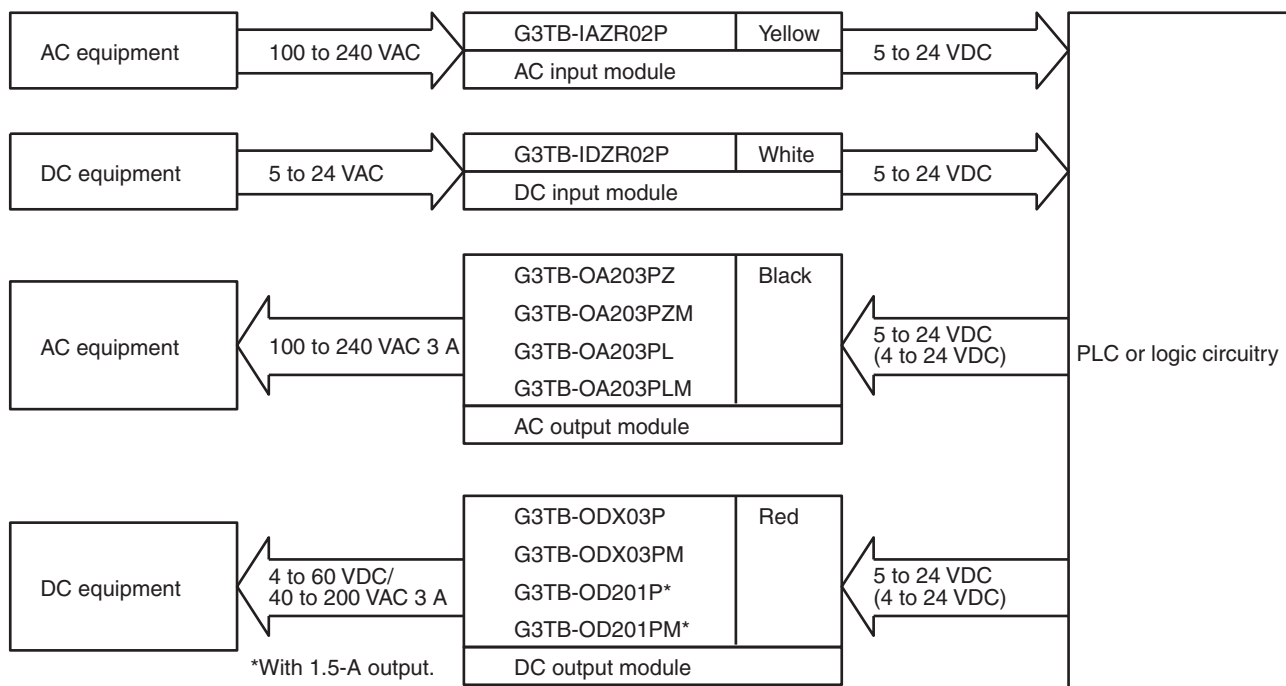
# Safety Precautions

## ■ Precautions for Correct Use

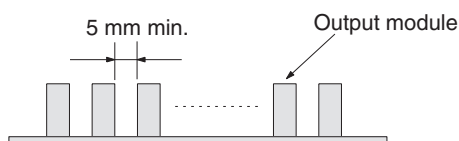
Please observe the following precautions to prevent failure to operate, malfunction, or undesirable effect on product performance.

### G3TB

I/O classification by the color is as follows:



When mounting more than one output module, make a distance of 5 mm minimum between adjacent SSRs. Up to 16-point, 3-A load switching is possible



### 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.

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

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