

OMRON

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 the color.
- Operation can be monitored easily through an LED indicator.
- Dielectric strength of 4,000 V between input and output terminals.



RCE

Ordering Information

Input Module

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 32 VDC	G3TB-IDZR02P-US

Output Module

Isolation	Zero cross function	Indicator	Applicable output load	Rated input voltage	Model
Photocoupler	Yes	Yes	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	3 A at 4 to 60 VDC	5 to 24 VDC	G3TB-ODX03P-US
		No		4 to 24 VDC	G3TB-ODX03PM-US
		Yes	1.5 A at 40 to 200 VDC	5 to 24 VDC	G3TB-OD201P-US
		No		4 to 24 VDC	G3TB-OD201PM-US

Specifications

■ Ratings

Input Module

Input

Model	Rated voltage	Operating voltage	Input current	Voltage level	
				Must operate voltage	Must release voltage
G3TB-IAZR02P	100 to 240 VAC	80 to 264 VDC	5 mA max.	80 VAC max.	10 VAC min.
G3TB-IDZR02P	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	4 to 32 VDC	32 VDC max.	25 mA max.
G3TB-IDZR02P			

Item	G3TB-OA 203PZ	G3TB-OA 203PZM	G3TB-OA 203PL	G3TB-OA 203PLM	G3TB-OD X03P	G3TB-OD X03PM	G3TB-OD 201P	G3TB-OD 201PM
Operate time	1/2 of load power source cycle + 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 MW min. (at 500 VDC)							
Dielectric strength	4,000 VAC for 1 min between input and output							
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude							
Shock resistance	Malfunction: 1,000 m/s ² (approx. 100G)							
Ambient temperature	Operating: -30% to 80°C (with no icing) Storage: -30% to 100°C (with no icing)							
Ambient humidity	Operating: 45% to 85%							
Weight	Approx. 25 g							

■ Approved Standards

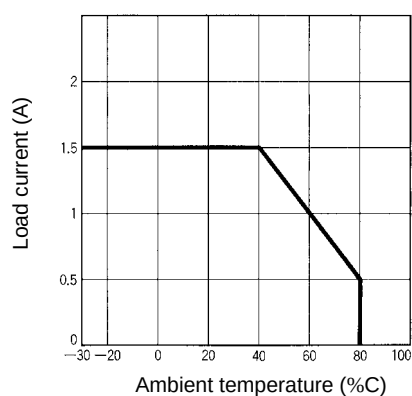
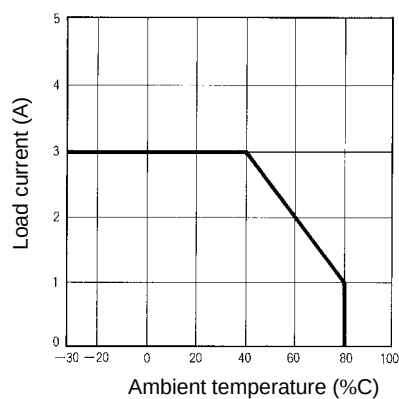
UL508 File No.E64562/CSA C22.2 (No.0, No.14) File No. LR35535/TÜV R90381 (VDE0806)

Model	Ratings
G3TB-IAZR02P-US G3TB-IDZR02P-US	0.02 A at 5 to 24 VDC
G3TB-OA203PZ(M)-US G3TB-OA203PL(M)-US	3 A at 100 to 240 VAC
G3TB-ODX03P(M)-US	3 A at 5 to 48 VAC
G3TB-OD201P(M)-US	1 A at 48 to a200 VDC

Engineering Data

Load Current vs. Ambient Temperature Characteristics

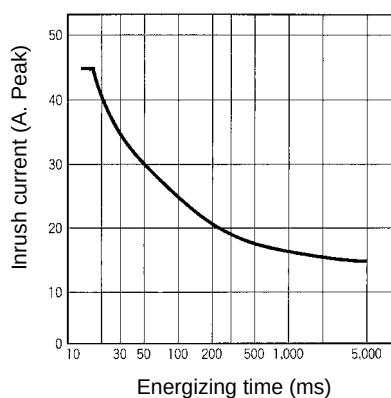
G3TB-OA203PZ/-OA203PZM/-OA203PL/-OA203PLM/
G3TB-ODX03P/-ODX03PM/-OD201P/-OD201PM



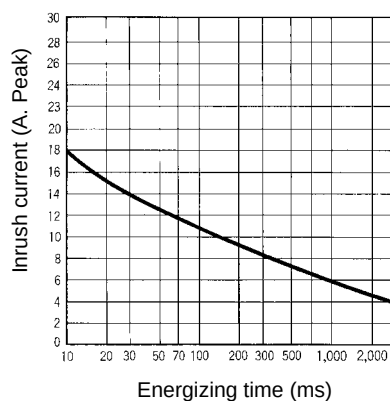
Inrush Current Resistivity

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

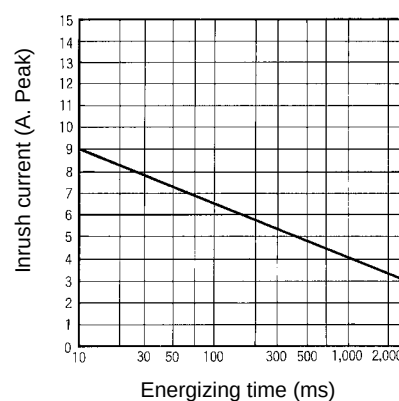
G3TB-OA203PZ/-OA203PZM/
-OA203PL/-OA203PLM



G3TB-ODX03P/-ODX03PM



G3OD201P/-OD201PM



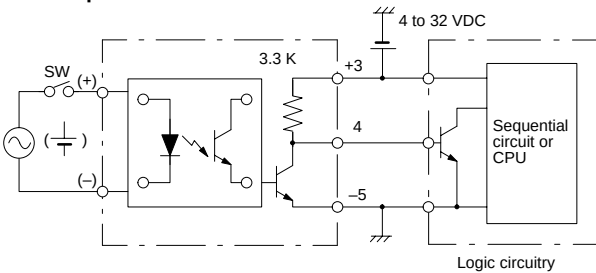
Operation

■ Circuit Configuration

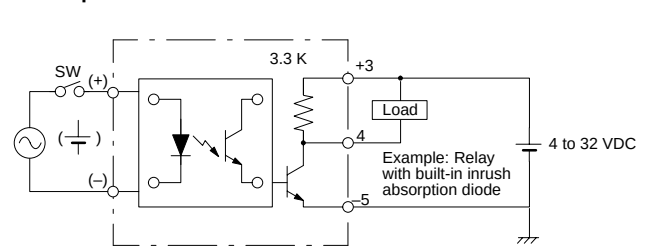
Type	Model	Case color	Indicator	Circuit
AC input	G3TB-IAZR02P	Yellow	Yes	Rectification circuit → Constant-current circuit → Amplification circuit
DC input	G3TB-IDZR02P	White	Yes	Constant-current circuit → Amplification circuit
AC output	G3TB-OA203PZ G3TB-OA203PL	Black	Yes	Constant-current circuit → Zero cross circuit → Drive circuit
	G3TB-OA203PZM G3TB-OA203PLM		No	
DC output	G3TB-ODX03P G3TB-OD201P	Red	Yes	Constant-current circuit → Amplification circuit
	G3TB-ODX03PM G3TB-OD201PM		No	

Example of Logic Output Circuit

Example 1



Example 2



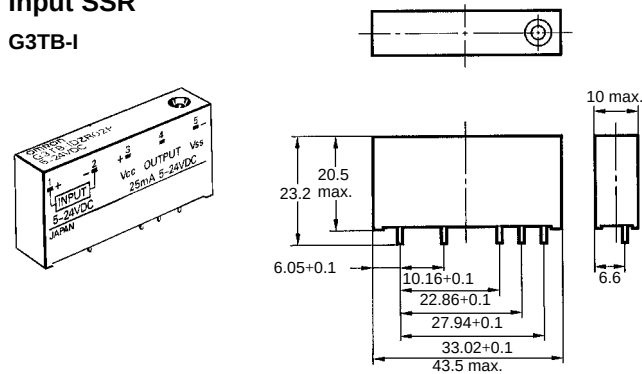
Note: AC- and DC-input versions are available.

Dimensions

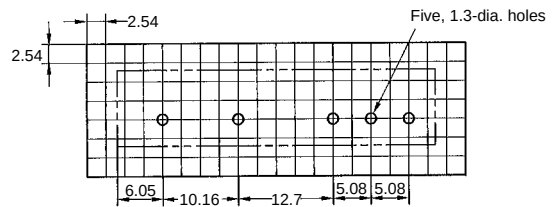
Note: All units are in millimeters unless otherwise indicated.

Input SSR

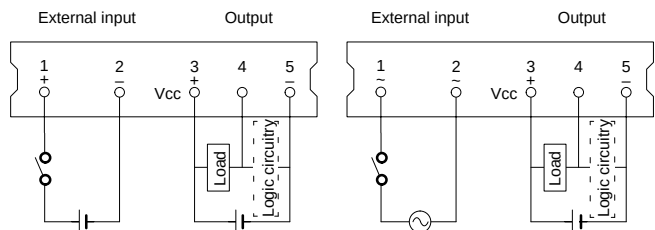
G3TB-I



PCB Dimensions (Bottom View)

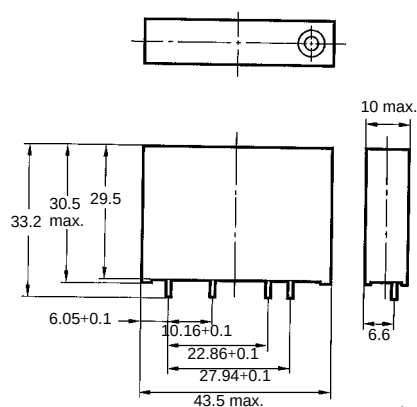
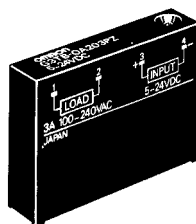
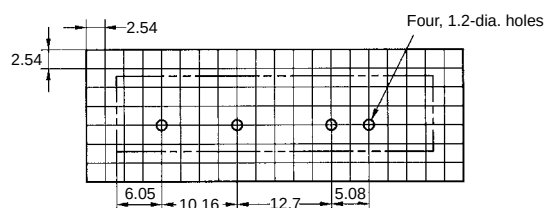
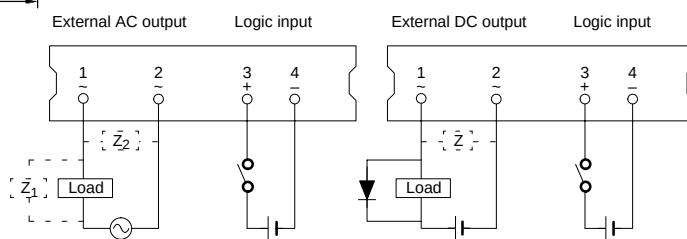


Terminal Arrangement (Bottom View)



Output SSR

G3TB-O

PCB Dimensions
(Bottom View)Terminal Arrangement
(Bottom View)

Note: Z_1 , Z_2 , and Z refer to overvoltage absorption elements that you should connect.

Precautions

Refer to pages 5 to 13 for general precautions.

Mounting

The rated values shown in this data sheet are standard values at an ambient temperature of 40°C.

PWB

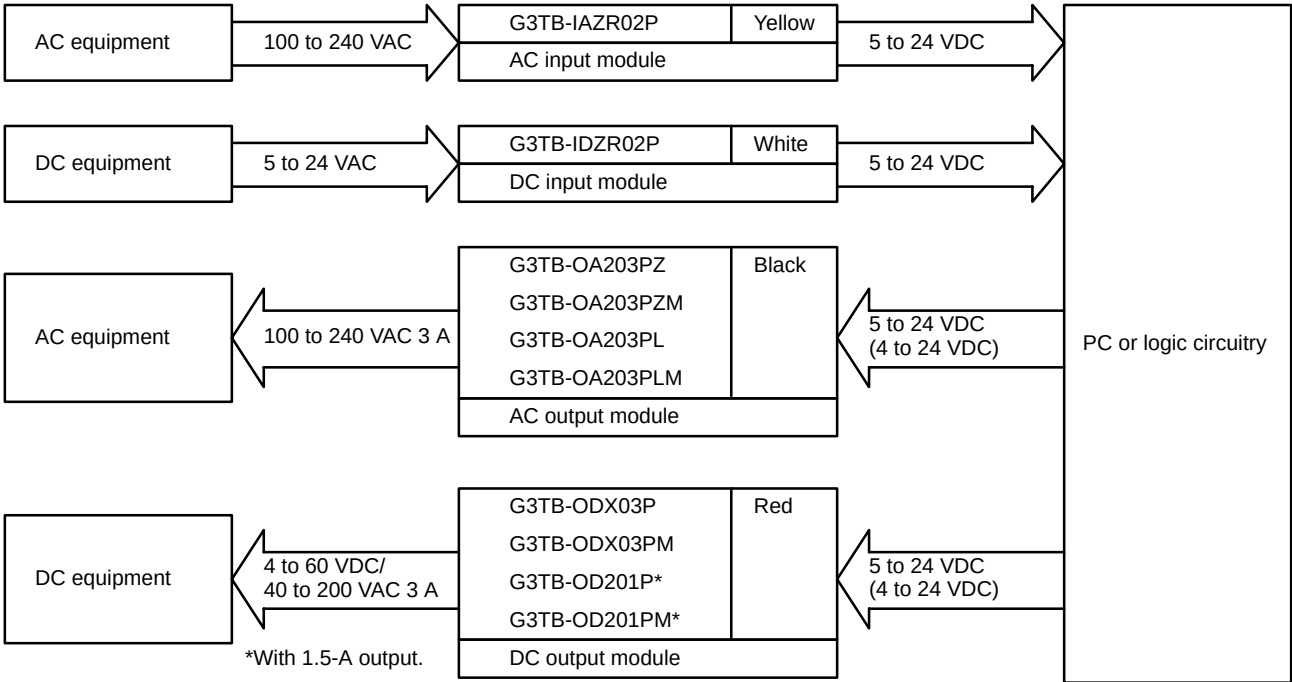
Soldering must be finished within 5 s at a temperature of 250°C.

Close Mounting (G3TB)

Take heat radiation into consideration when mounting.
The distance between adjacent SSRs must be 5 mm minimum.

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.

