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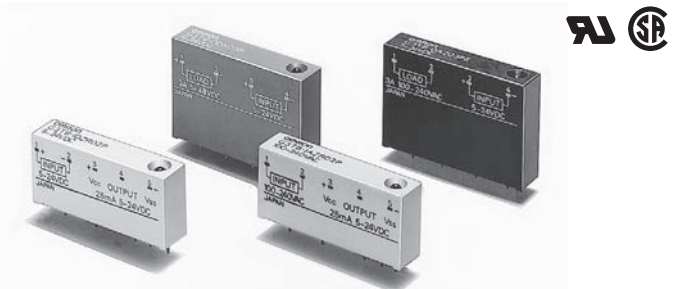



G3TB

I/O Solid State Relay

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

- A variety of AC/DC input and output modules are classified by color.
- Operation can be monitored easily by LED indicator.
- Dielectric strength of 4,000 V between input and output terminals.
- Lineup includes models with UL and CSA certification (model numbers ending in "-US").



 Refer to "Solid State Relays Common Precautions".

RoHS Compliant

List of Models

Input Modules

| Isolation | Indicator | Logic level Supply voltage | Logic level Supply current | Rated input voltage | Model | Minimum packing unit |
|--------------|-----------|----------------------------|----------------------------|---------------------|--------------|----------------------|
| Photocoupler | Yes | 4 to 32 VDC | 25 mA | 100 to 240 VAC | G3TB-IAZR02P | 20 pcs |
| | | | | 5 to 24 VDC | G3TB-IDZR02P | |

Output Modules

| Isolation | Zero cross function | Indicator | Rated output voltage | Rated input voltage | Model | Minimum packing unit | |
|--------------|---------------------|-----------|-----------------------|------------------------|---------------|----------------------|---------------|
| Photocoupler | Yes | Yes | 3 A at 100 to 240 VAC | 5 to 24 VDC | G3TB-OA203PZ | 20 pcs | |
| | | No | | 4 to 24 VDC | G3TB-OA203PZM | | |
| | | No | | Yes | 5 to 24 VDC | | G3TB-OA203PL |
| | | | | No | 4 to 24 VDC | | G3TB-OA203PLM |
| | - | Yes | No | 3 A at 5 to 48 VDC | 5 to 24 VDC | | G3TB-ODX03P |
| | | | | | 4 to 24 VDC | | G3TB-ODX03PM |
| | | No | Yes | 1.5 A at 48 to 200 VDC | 5 to 24 VDC | | G3TB-OD201P |
| | | | | | 4 to 24 VDC | | G3TB-OD201PM |

Ratings

Input Module

Input

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

Output Module

Input

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

Output

| Model | Item | Applicable load | | | |
|---------------|------|--------------------|--------------------|---------------------|-----------------------|
| | | Rated load voltage | Load voltage range | Load current | Inrush current |
| G3TB-OA203PZ | | 100 to 240 VAC | 75 to 264 VAC | 0.05 to 3 A *1, 2 | 45 A (60 Hz, 1 cycle) |
| G3TB-OA203PZM | | | | | |
| G3TB-OA203PL | | | | | |
| G3TB-OA203PLM | | | | | |
| G3TB-ODX03P | | 5 to 48 VDC | 4 to 60 VDC | 0.01 to 3 A *1, 2 | 18 A (10 ms) |
| G3TB-ODX03PM | | | | | |
| G3TB-OD201P | | 48 to 200 VDC | 40 to 200 VDC | 0.01 to 1.5 A *1, 2 | 9 A (10 ms) |
| G3TB-OD201PM | | | | | |

Output

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

- *1. The minimum current value is measured at 10°C min.
- *2. The applicable output load current varies depending on the ambient temperature. Refer to reference data the "Load Current vs. Ambient Temperature" rating characteristic for details.

Characteristics

Input Module

| Item | Model | G3TB-IAZR02P | G3TB-IDZR02P |
|-------------------------------|-------|--|--------------|
| 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 μ A max. | |
| Insulation resistance | | 100 M Ω min. (at 500 VDC) | |
| Dielectric strength | | 4,000 VAC, 50/60 Hz for 1 min between input and output | |
| Vibration resistance | | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5mm double amplitude) | |
| Shock resistance | | 1,000 m/s ² | |
| Storage temperature | | -30°C to 100°C (with no icing or condensation) | |
| Ambient operating temperature | | -30°C to 80°C (with no icing or condensation) | |
| Ambient operating humidity | | 45% to 85%RH | |
| Weight | | Approx. 22 g | |

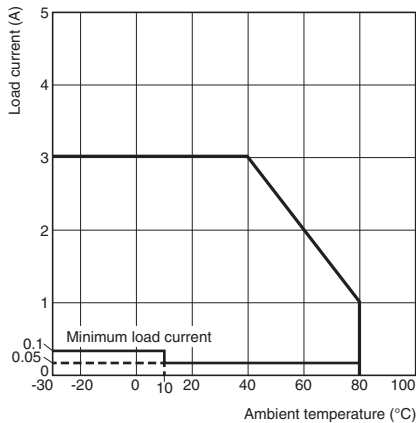
Output Module

| Item | Model | G3TB-OA203PZ | G3TB-OA203PZM | G3TB-OA203PL | G3TB-OA203PLM | G3TB-ODX03P | G3TB-ODX03PM | G3TB-OD201P | G3TB-OD201PM |
|-------------------------------|-------|--|---------------|--------------|---------------|-------------|--------------|-------------|--------------|
| 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 (RMS) max. | | | | 1.6 V max. | | 2.5 V max. | |
| Leakage current | | 5 mA max. (at 200 VAC) | | | | 1 mA max. | | | |
| Insulation resistance | | 100 M Ω min. (at 500 VDC) | | | | | | | |
| Dielectric strength | | 4,000 VAC, 50/60 Hz for 1 min between input and output | | | | | | | |
| Vibration resistance | | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5mm double amplitude) | | | | | | | |
| Shock resistance | | 1,000 m/s ² | | | | | | | |
| Storage temperature | | -30°C to 100°C (with no icing or condensation) | | | | | | | |
| Ambient operating temperature | | -30°C to 80°C (with no icing or condensation) Minimum load current: 10 to 80°C Refer to the <i>Load Current - Ambient Temperature Rating</i> for the minimum load current. | | | | | | | |
| Ambient operating humidity | | 45% to 85%RH | | | | | | | |
| Weight | | Approx. 32 g | | | | | | | |

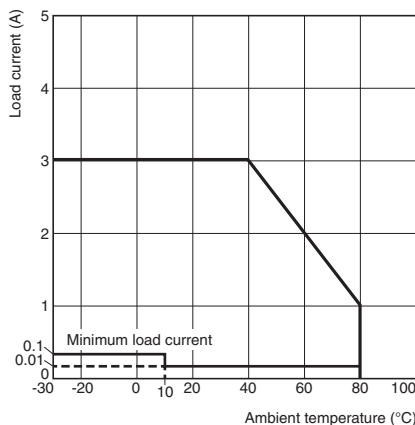
Engineering Data

Load Current vs. Ambient Temperature Characteristics

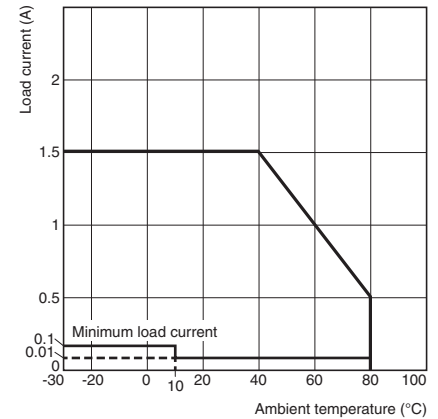
G3TB-OA203PZ G3TB-OA203PLM
G3TB-OA203PZM
G3TB-OA203PL



G3TB-ODX03P
G3TB-ODX03PM



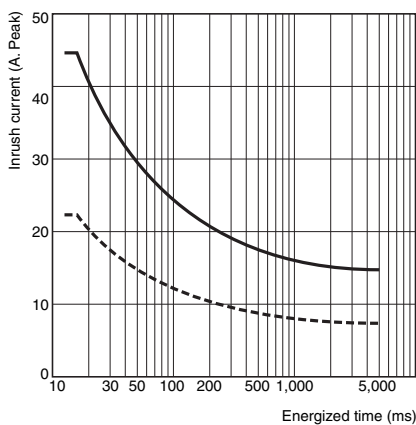
G3TB-OD201P
G3TB-OD201PM



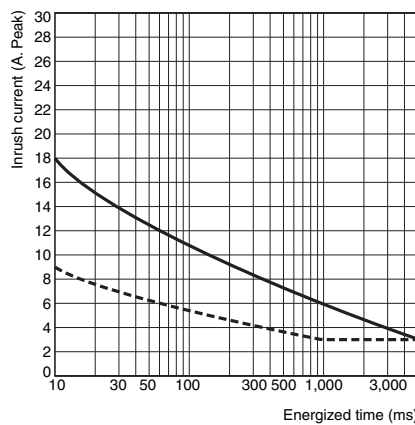
One Cycle Surge Current: Non-repetitive

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

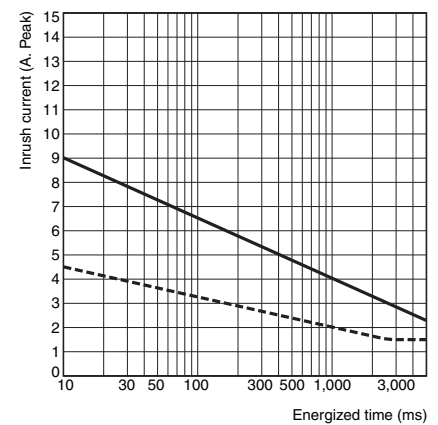
G3TB-OA203PZ G3TB-OA203PL
G3TB-OA203PZM G3TB-OA203PLM



G3TB-ODX03P
G3TB-ODX03PM



G3TB-OD201P
G3TB-OD201PM

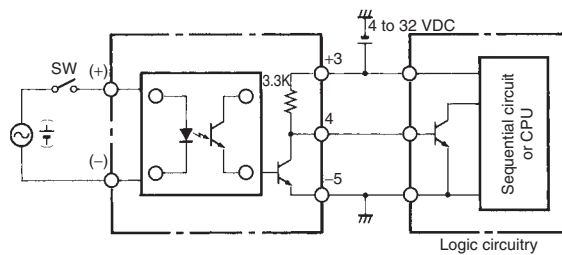


■ Circuit Configuration

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

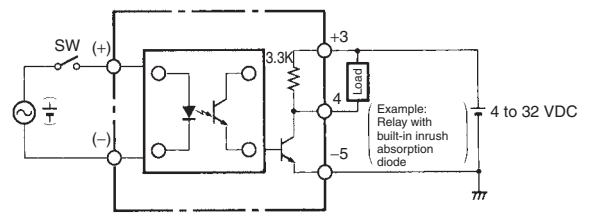
• Example of Logic Output Circuit

Example 1. G3TB-I



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

Example 2. G3TB-I

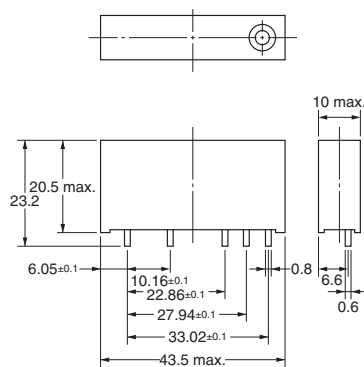
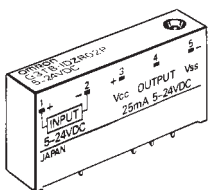


Note: AC- and DC-input versions are available.

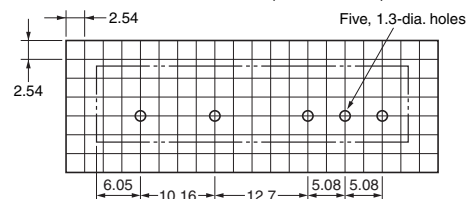
■ Dimensions

(Unit: mm)

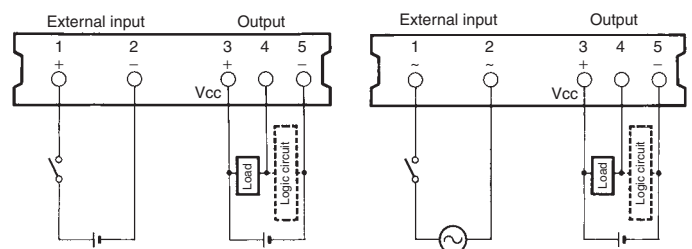
Input SSR G3TB-I



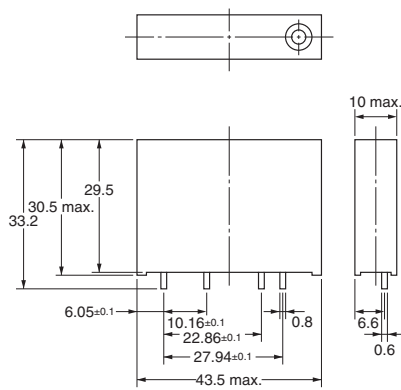
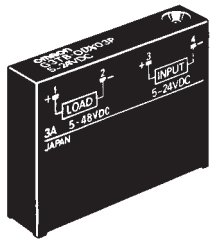
PCB Dimensions (Bottom View)



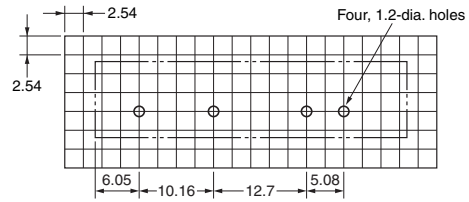
Terminal Arrangement (Bottom View)



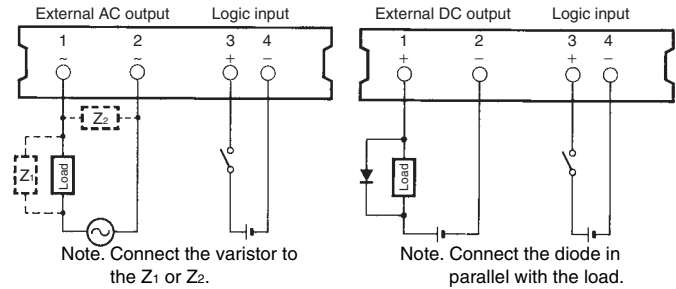
Output SSR G3TB-I



PCB Dimensions (Bottom View)



Terminal Arrangement (Bottom View)

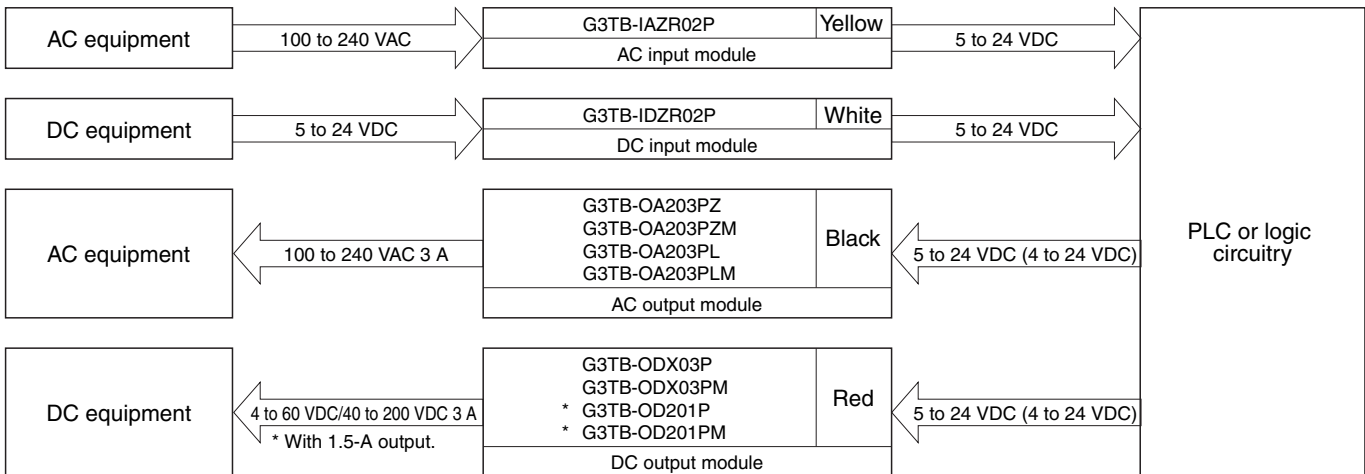


■ Safety Precautions

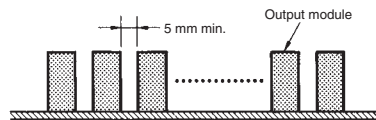
● Please refer to “Solid State Relays Common Precautions” for correct use.

Precautions for Correct Use

• SSR for 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.



- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.