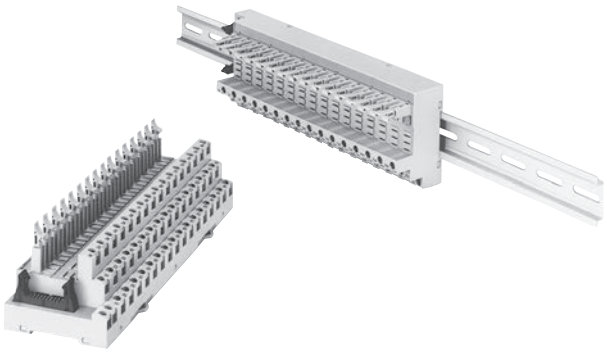
# I/O Terminal Socket
## G70A

## 16-point I/O Terminal Socket accepts Various Devices such as G2R Relays, Solid State Relays, and Timers for More System Flexibility.



- Connects to a PLC with a simple snap-in connector.
- The G70A-ZOC16-3 cab be combined with a DRT1-OD32ML I/O Terminal for DeviceNet connectivity.
- SPDT relays can be mounted.
- Conforms to VDE (VDE0160) and CE standards.
- Electric-shock preventive (finger-touch protection ✻) terminal socket.
- High-capacity (10 A) terminal socket.
- Built-in diodes for coil surge suppression.

✻ Round terminals cannot be used. Use Y terminals or ferrule terminals instead.

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

## Ordering Information

### I/O Terminal Socket

| Classification | Internal I/O common | Rated voltage | Model |
|---|---|---|---|
| Output | NPN (+ common) | 24 VDC | **G70A-ZOC16-3** |
| | PNP (– common) | 24 VDC | **G70A-ZOC16-4** |

✻ Each relay to be mounted must incorporate a coil that has proper specifications within the maximum rated voltage range.

### Suitable Relay/Solid State Relay/Solid-State Timer

| Classification | I/O Terminal Socket | Relay | Solid State Relay (SSR) | Solid-State Timer |
|---|---|---|---|---|
| Output | NPN: G70A-ZOC16-3<br>PNP: G70A-ZOC16-4 | G2R-1-S<br>G2R-1-SN<br>G2R-1-S (S)<br>G2R-1-SN (S) | G3R-OA202SZN-UTU<br>G3R-OA202SLN-UTU<br>G3R-ODX02SN-UTU<br>G3R-OD201SN-UTU<br><br>G3RZ-201SLN | H3RN-1<br>H3RN-11 |

## Accessories (Order Separately)

### Short Bar

| Applicable model | Model |
|---|---|
| G70A-ZOC16-3<br>G70A-ZOC16-4 | G78-16-E |

### Connecting Sockets for I/O Terminal Expansion

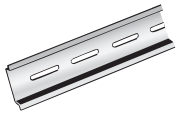
| Number of poles | Model |
|---|---|
| 1 pole (G2R: 1 pole usage) | P2RFZ-05-E |
| 2 poles (G2R: 2 poles usage) | P2RFZ-08-E |

### Cables for I/O Relay Terminals XW2Z-R

- Cable with Loose Wire and Crimp Terminals: XW2Z-RY□C
- Cable with Loose Wires: XW2Z-RA□C
- Cable with connectors
  - Fujitsu/Otax connectors (1:1): XW2Z-R□C
    (1:2): XW2Z-RI□C-□
    XW2Z-RO□C-□
    (1:3): XW2Z-R□C-□-□
  - MIL connectors (1:1): XW2Z-RI□C
    XW2Z-RO□C
    (1:2): XW2Z-RI□-□-D□
    XW2Z-RM□-□-D□
    XW2Z-RO□-□-D1

Refer to “Connecting Cables” on page 12 for details.

### Accessories for DIN Track Mounting

| Appearance | Name | | Model |
|---|---|---|---|
|  | DIN Tracks | 1 m | **PFP-100N** |
| | | 0.5 m | **PFP-50N** |
|  | End Plate | | **PFP-M** |
|  | Spacer | | **PFP-S** |

# Specifications

## Ratings/Characteristics

| Item | G70A-ZOC16-3 | G70A-ZOC16-4 |
|---|---|---|
| **Contact resistance** | 10 mΩ (excluding the resistance of the relay to be used) | |
| **Permissible current** | 10 A | |
| **Max. operating voltage** | 380 VAC, 125 VDC | |
| **Dielectric strength** | 4,000 VAC, 50/60 Hz for 1 min between connector and output terminals<br>2,000 VAC, 50/60 Hz for 1 min between output terminals<br>250 VAC, 50/60 Hz for 1 min between connectors | |
| **Insulation resistance** | Between connector and I/O terminals: 1,000 MΩ (at 500 V)<br>Other: 100 MΩ (at 500 V) | |
| **Vibration resistance** | Malfunction: 10 to 61.2 to 10 Hz, 0.1-mm single amplitude (0.2-mm double amplitude); 61.2 to 150 to 61.2 Hz, 14.7 $m/s^2$ | |
| **Shock resistance** | Malfunction: 200 $m/s^2$ | |
| **Noise immunity** | Noise level: 2.0 kV; pulse width: 100 ns to 1 μs | |
| **Ambient temperature** | Operating: 0 to 55°C (with no condensation or icing) | |
| **Ambient humidity** | Operating: 35% to 85% | |
| **Coil surge absorption element** | Diode: 1 A, 400 V | |
| **Protection diode for inverse connection** | Diode (2 A, withstand inverse voltage: 40 V) | |
| **Tensile strength** | No damage when a tensile force of 49 N is applied for 1 second in any direction | |
| **I/O terminal tightening torque** | Tightening strength: 0.59 N·m; Tensile strength 49 N for 1 min. | |
| **Weight** | Approx. 400 g | |

✻ Use a DC relay with a built-in diode because a DC relay without a built-in diode does not absorb any coil surge.

## Approved Standards

The rated values for safety standard certification are not the same as individually defined performance values. Always check the specifications before use.

### UL standard certification (File No. E95399)

| Model | Ratings | Standard number | Category | Listed/Recognized | Contact ratings |
|---|---|---|---|---|---|
| G70A-ZOC16-3<br>G70A-ZOC16-4 | --- | UL508 | NRAQ2 | Recognized | 10 A 250 VAC |

### CSA certified (File No. LR35535)

| Model | Ratings | Standard number | Class number | Contact ratings |
|---|---|---|---|---|
| G70A-ZOC16-3<br>G70A-ZOC16-4 | --- | CSA C22.2 No.14 | 3211 04 | 10 A 250 VAC<br>10 A 30 VDC |

### VDE Standards

| Model | Standard number | Certification No. |
|---|---|---|
| G70A-ZOC16-3<br>G70A-ZOC16-4 | VDE0160 | 124796 |

## ●Relay (G2R-1-S, G2R-1-SN, G2R-1-S (S), G2R-1-SN (S))

### Coil Ratings

| | | |
|---|---|---|
| **Rated voltage** | | 24 VDC |
| **Rated current** | | 21.8 mA |
| **Coil resistance** | | 1,100 Ω |
| **Coil inductance** | **Armature OFF** | 4.27 |
| **(H) (ref. value)** | **Armature ON** | 8.55 |
| **Must operate voltage** | | 70% min. of rated voltage |
| **Must release voltage** | | 15% min. of rated voltage |
| **Max. voltage** | | 110% of rated voltage |
| **Power consumption** | | Approx. 0.53 W |

### Contact Ratings

| | | |
|---|---|---|
| **Number of poles** | 1 pole | |
| **Load** | Resistive load (cosϕ = 1) | Inductive load (cosϕ = 0.4; L/R = 7 ms) |
| **Rated load** | 10 A at 250 VAC; 10 A at 30 VDC | 7.5 A at 250 VAC; 5 A at 30 VDC |
| **Rated carry current** | 10 A | |
| **Max. operating voltage** | 380 VAC, 125 VDC | |
| **Max. operating current** | 10 A | |
| **Max. switching capacity** | 2,500 VA, 300 W | 1,875 VA, 150 W |
| **Min. permissible load** | 100 mA at 5 VDC | |

## ●Relay (G2R-1A3-SN (SND), G2R-13-SN (SND))

### Coil Ratings

| | | | | |
|---|---|---|---|---|
| **Rated voltage** | | 230 VAC | 12 VDC | 24 VDC |
| **Rated current** | **50 Hz** | 3.7 mA | 43.6 mA | 21.8 mA |
| | **60 Hz** | 3.1 mA | | |
| **Coil resistance** | | 30,000 Ω | 275 Ω | 1,100 Ω |
| **Must operate voltage** | | 80% max. of rated voltage | 70% max. of rated voltage | |
| **Must release voltage** | | 30% min. of rated voltage | 15% min. of rated voltage | |
| **Max. voltage** | | 110% of rated voltage | | |
| **Power consumption** | | Approx. 0.7 W (60 Hz) | Approx. 0.53 W | |

**Note: 1.** The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $^{+15\%}/_{-20\%}$ (AC rated current) or ±10% (DC coil resistance).

**2.** LEDs are used for the built-in operation indicator. For models equipped with these indications, the VAC rated current must be increased by approximately 1 mA; the VDC rated current, by approximately 4 mA.

**3.** Operating characteristics are measured at a coil temperature of 23°C.

## ●Solid State Relay (G3R-I/O)

### Ratings

#### Input Module

**Input**

| Model | Rated voltage | Operating voltage | Input current | Must operate voltage | Must release voltage |
|---|---|---|---|---|---|
| **G3R-IAZR1SN** | 100 to 240 VAC | 60 to 264 VAC | 15 mA max. | 60 VAC max. | 20 VAC min. |
| **G3R-IDZR1SN** | 5 VDC | 4 to 6 VDC | 8 mA max. | 4 VDC max. | 1 VDC min. |
| | 12 to 24 VDC | 6.6 to 32 VDC | | 6.6 VDC max. | 3.6 VDC min. |
| **G3R-IDZR1SN-1** | 5 VDC | 4 to 6 VDC | | 4 VDC max. | 1 VDC min. |
| | 12 to 24 VDC | 6.6 to 32 VDC | | 6.6 VDC max. | 3.6 VDC min. |

**Output**

| Model | Load voltage | Load current |
|---|---|---|
| **G3R-IAZR1SN** | 4 to 32 VDC | 0.1 to 100 mA |
| **G3R-IDZR1SN** | | |
| **G3R-IDZR1SN-1** | | |

#### Output Module

**Input**

| Model | Rated voltage | Operating voltage | Input current | Must operate voltage | Must release voltage |
|---|---|---|---|---|---|
| **G3R-OA202SZN-UTU** | 5 to 24 VDC | 4 to 32 VDC | 15 mA max. (at 25°C) | 4 VDC max. | 1 VDC min. |
| **G3R-OA202SLN-UTU** | | | | | |
| **G3R-ODX02SN-UTU** | | | 8 mA max. | | |
| **G3R-OD201SN-UTU** | | | | | |

**Output**

| Model | Load voltage | Load current ✻1, ✻2 | Inrush current |
|---|---|---|---|
| **G3R-OA202SZN-UTU** | 75 to 264 VAC | 0.05 to 2 A | 30 A (60 Hz, 1 cycle) |
| **G3R-OA202SLN-UTU** | | | |
| **G3R-ODX02SN-UTU** | 4 to 60 VDC | 0.01 to 2 A | 8 A (10 ms) |
| **G3R-OD201SN-UTU** | 40 to 200 VDC | 0.01 to 1.5 A | 8 A (10 ms) |

**✻1.** Depends on the ambient temperature. Refer to the Engineering Data (Reference Value) *Load Current vs. Ambient Temperature Rating* on page 7 for details.
**✻2.** The minimum current value is measured at 10°C min.

### Characteristics

#### Input Module

| Item | G3R-IAZR1SN | G3R-IDZR1SN | G3R-IDZR1SN-1 |
|---|---|---|---|
| **Operate time** | 20 ms max. | 0.1 ms max. | 15 ms max. |
| **Release time** | 20 ms max. | 0.1 ms max. | 15 ms max. |
| **Response frequency** | 10 Hz | 1 kHz | 10 Hz |
| **Output ON voltage drop** | 1.6 V max. | | |
| **Leakage current** | 5 μA max. | | |
| **Insulation resistance** | 100 MΩ min. between input and output | | |
| **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 (1.5-mm double amplitude) | | |
| **Shock resistance** | 1,000 $m/s^2$ | | |
| **Ambient temperature** | Operating: –30 to 80°C (with no icing)<br>Storage: –30 to 100°C (with no icing) | | |
| **Ambient humidity** | Operating: 45% to 85% | | |
| **Weight** | Approx. 18 g | | |

### Output Module

| Item | G3R-OA202SZN-UTU | G3R-OA202SLN-UTU | G3R-ODX02SN-UTU | G3R-OD201SN-UTU |
|---|---|---|---|---|
| **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. | | 2 ms max. | |
| **Response frequency** | 20 Hz | | 100 Hz | |
| **Output ON voltage drop** | 1.6 V max. | | | 2.5 V max. |
| **Leakage current** | 1.5 mA max. | | 1 mA max. | |
| **Insulation resistance** | 100 MΩ min. between input and output | | | |
| **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 (1.5-mm double amplitude) | | | |
| **Shock resistance** | 1,000 m/s$^2$ | | | |
| **Ambient temperature** | Operating: –30 to 80°C (with no icing)<br>Storage: –30 to 100°C (with no icing) | | | |
| **Ambient humidity** | Operating: 45% to 85% | | | |
| **Weight** | Approx. 18 g | | | |

## ●Solid State Relay (G3RZ)

### Ratings

| Item / Model | Input | | | | | Output | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Rated voltage | Operating voltage | Impedance | Voltage level | | Rated load voltage | Load voltage range | Load current ✻ | Surge withstand current |
| | | | | Must-operate voltage | Must-release voltage | | | | |
| **G3RZ-201SLN** | 5 VDC | 4 to 6 VDC | 400 Ω ±20% | 4 VDC max. | 1 VDC min. | 5 to 240 VAC<br>5 to 100 VDC | 3 to 264 VAC<br>3 to 125 VDC | 100 μA to 1.0 A | 10 A (10 ms) |
| | 12 VDC | 9.6 to 14.4 VDC | 1.1 kΩ ±20% | 9.6 VDC max. | | | | | |
| | 24 VDC | 19.2 to 28.8 VDC | 2.2 kΩ ±20% | 19.2 VDC max. | | | | | |

✻ Depends on the ambient temperature. Refer to the reference data *Load Current vs. Ambient Temperature Rating* on page 7 for details.

### Characteristics

| | |
|---|---|
| **Operation time** | 6 ms max. |
| **Release time** | 10 ms max. |
| **Output ON resistance** | 2.4 Ω max. |
| **OFF leakage current** | 10 μA max. (at 125 VDC)<br>100 μA max. (at 200 VAC) |
| **Insulation resistance** | 100 MΩ min. (at 500 VDC) |
| **Dielectric strength** | 2,500 VAC at 50/60 Hz for 1 min. between inputs and outputs |
| **Vibration resistance** | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) |
| **Shock resistance** | 1,000 m/s$^2$ |
| **Storage temperature** | –30 to 100°C (with no icing or condensation) |
| **Ambient operating temperature** | –30 to 85°C (with no icing or condensation) |
| **Ambient operating humidity** | 45% to 85% |
| **Weight** | Approx. 20 g |

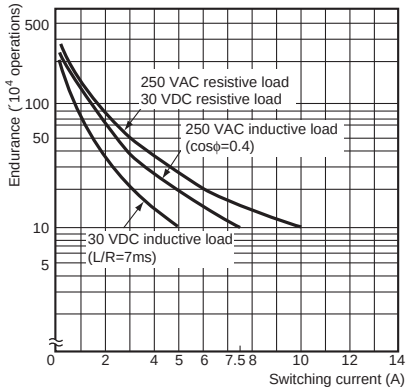
## ●Solid-State Timer (H3RN)

For H3RN specifications, refer to the H3RN Datasheet.

# Engineering Data (Reference Value)

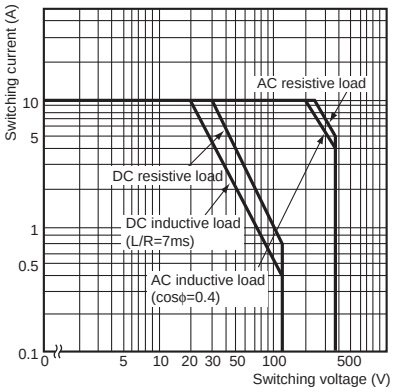
## When Mounted to a G2R

### Endurance




### Maximum Switching Power

**G2R-1-S (24 VDC)**

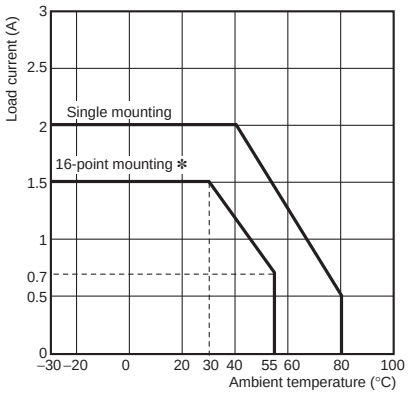



**Note:** The characteristics shown here are for 16-point mounting.
This data was produced from actual values sampled on production lines, and should be used for reference purposes only.
Since relays are mass-produced, a certain amount of tolerance is generally allowed in their application.

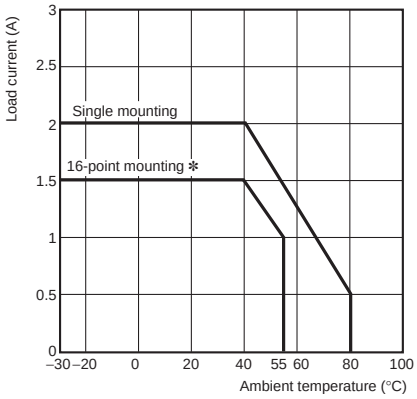
## When Mounted to a G3R-I/O

### Load Current vs. Ambient Temperature Rating

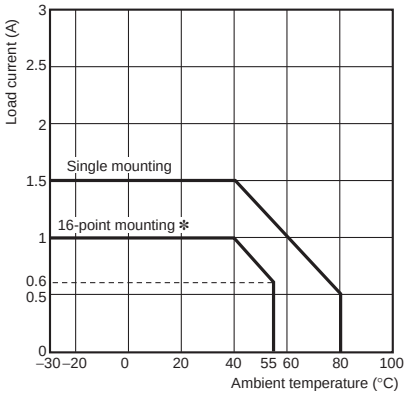
**G3R-OA202SZN-UTU**
**G3R-OA202SLN-UTU**




**G3R-ODX02SN-UTU**




**G3R-OD201SN-UTU**

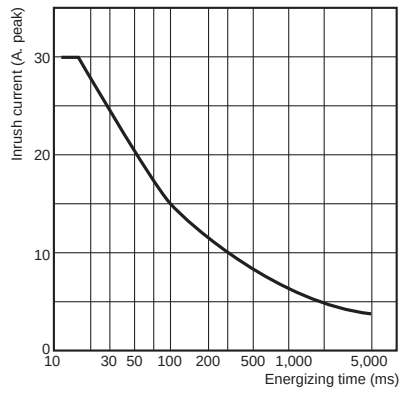



✻On G70A-ZOC16, fully mounted.

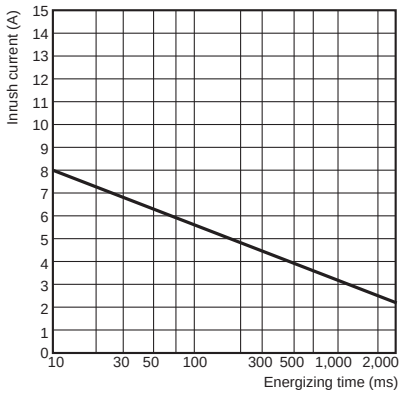
### Inrush Current Resistivity

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

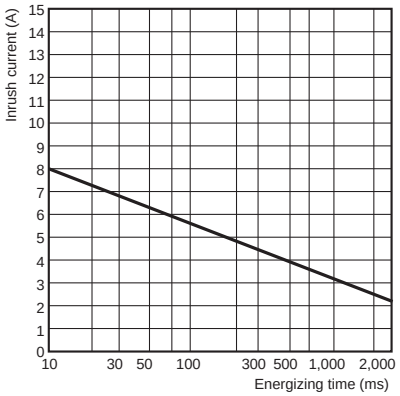
**G3R-OA202SZN-UTU**
**G3R-OA202SLN-UTU**




**G3R-ODX02SN-UTU**



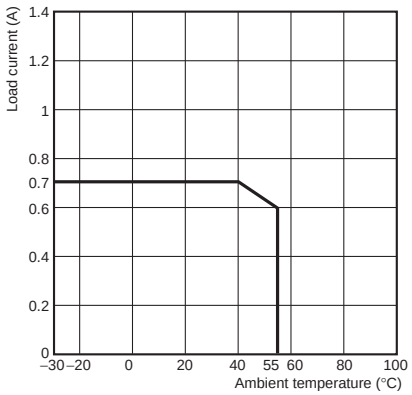

**G3R-OD201SN-UTU**



## When Mounted to a G3RZ

### Load Current vs. Ambient Temperature Rating

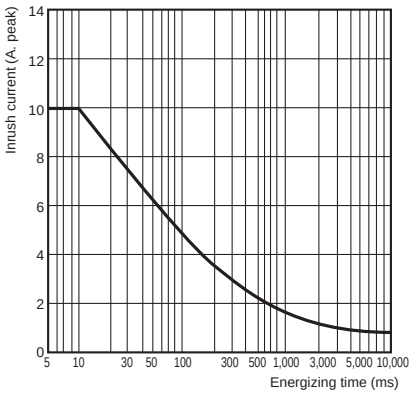
**G3RZ-201SLN**




### Inrush Current Resistivity

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

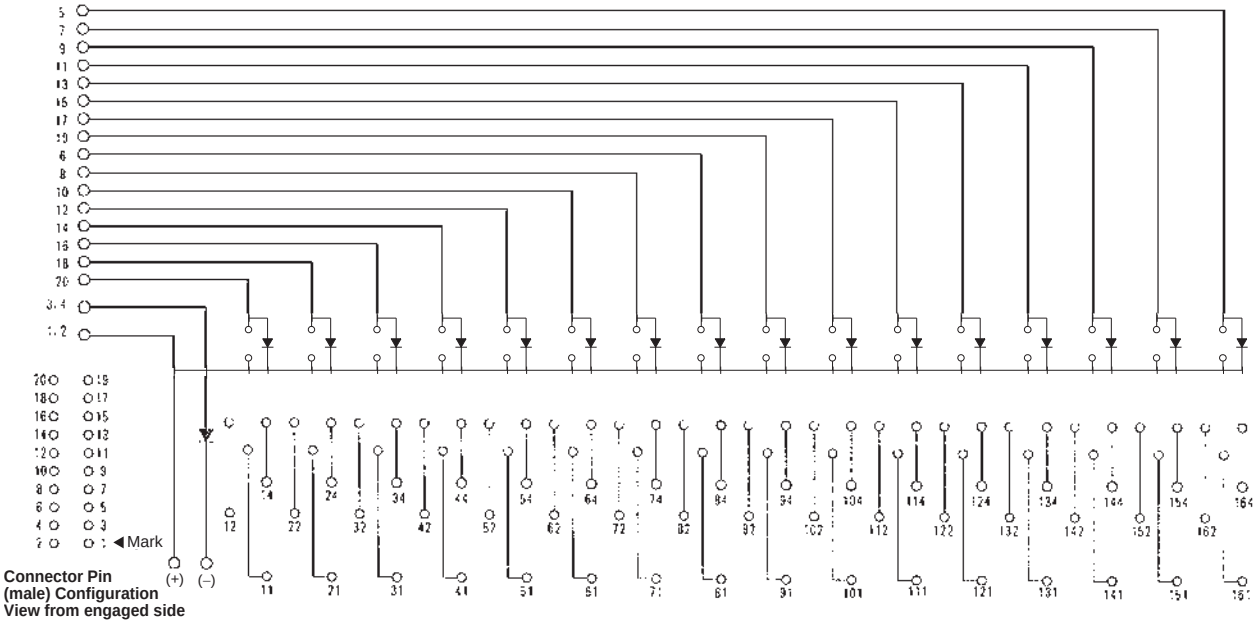
**G3RZ-201SLN**



# Internal Circuits

• G70A-ZOC16-3 (NPN)

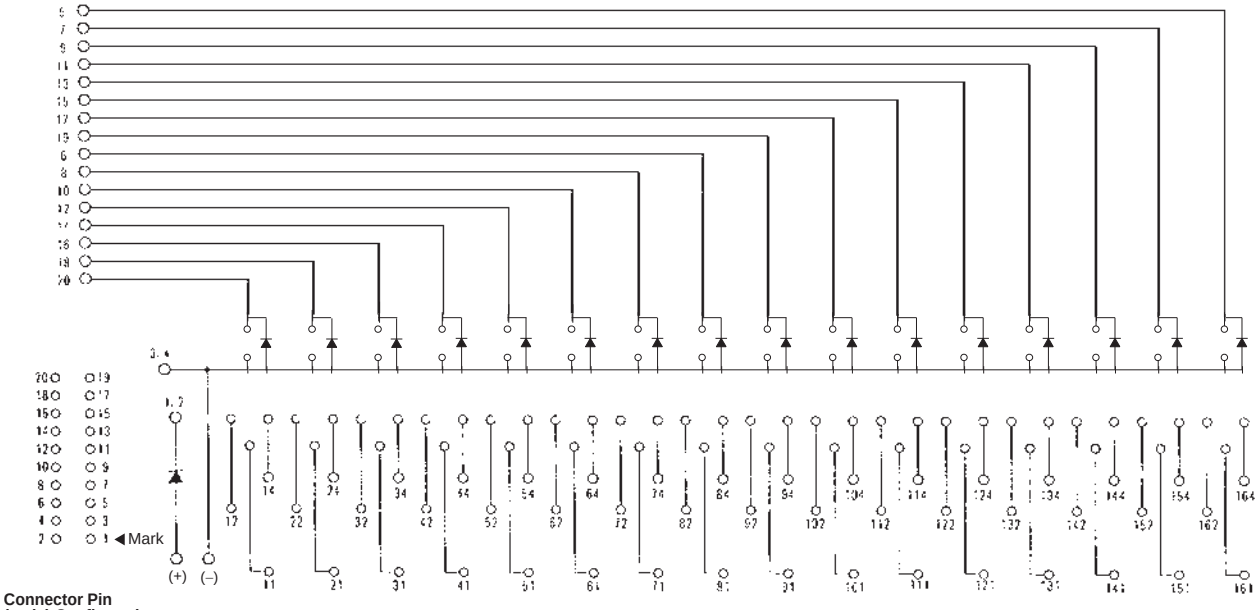
NPN (positive common): The output at the connected controller will have a negative common from an NPN transistor.




**Connector Pin (male) Configuration View from engaged side**

## G70A-ZOC16-4 (PNP)

PNP (negative common): The output at the connected controller will have a positive common from a PNP transistor.



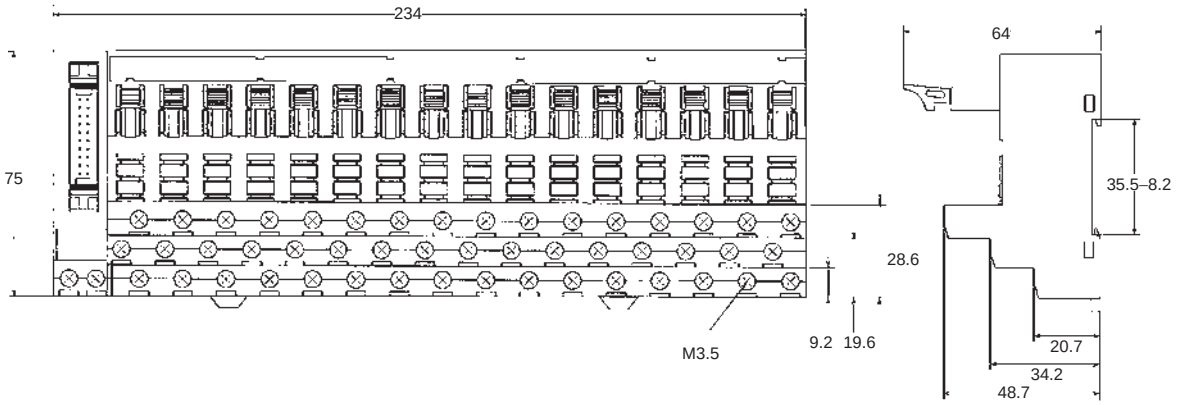

**Connector Pin (male) Configuration View from engaged side**

**Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

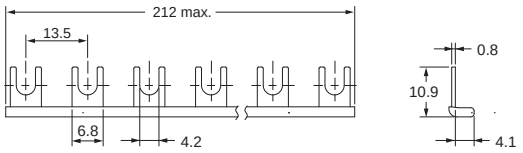
# Dimensions

(Unit: mm)

**G70A-ZOC16 (Output)**

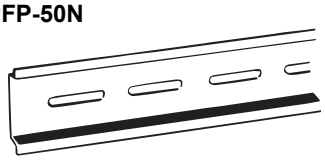


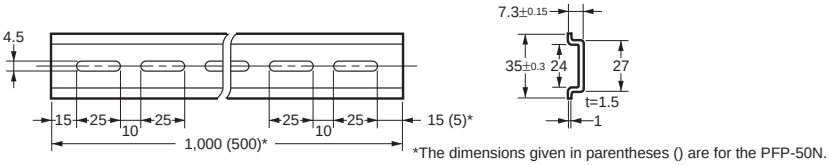

**Short Bar**
**G78-16-E**



## Parts for Rail Mounting

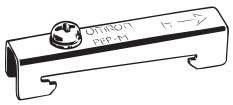
**DIN Track**
**PFP-100N**
**PFP-50N**

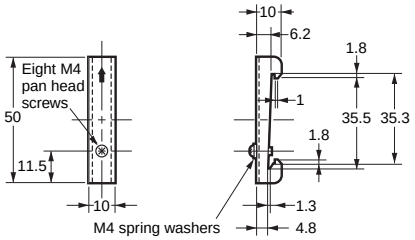




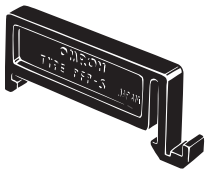

*The dimensions given in parentheses () are for the PFP-50N.

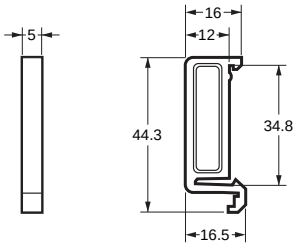
**End Plate**
**PFP-M**



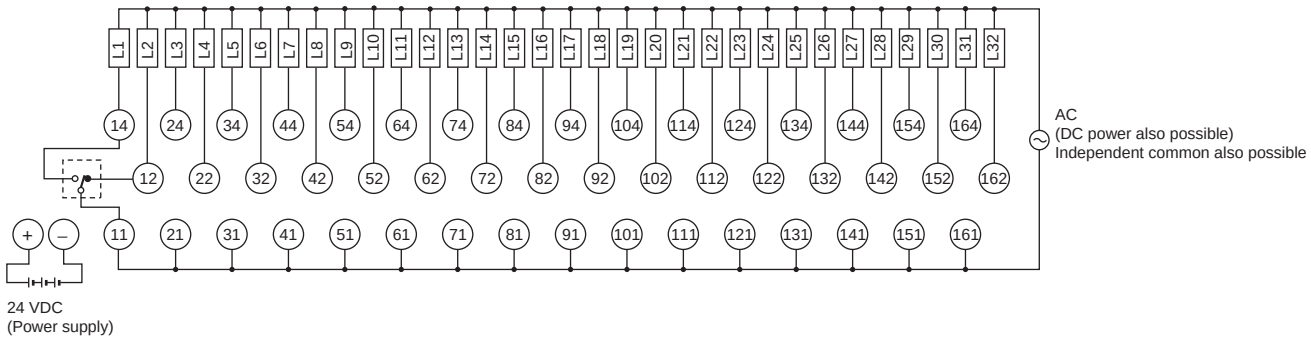



**Spacer**
**PFP-S**






## Terminal Arrangement/Internal Connection



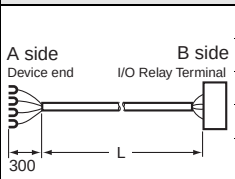
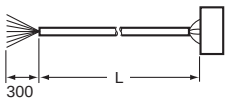
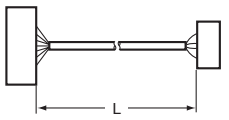
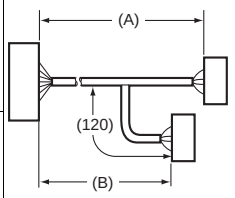
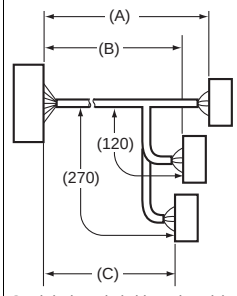
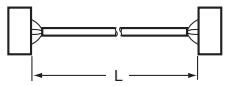

**Note:** The above diagram shows the Unit mounted to a G2R-1-S.
When mounting to a G3R-OA□-UTU or G3RZ-201SLN, pins 11 to 14 are output terminals.
When mounting to a G3R-OD□-UTU, pin 14 is a plus terminal and pin 11 is a minus terminal. When mounting to G3RZ-201SLN, there is no polarity.

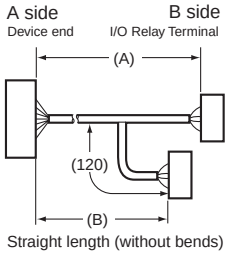
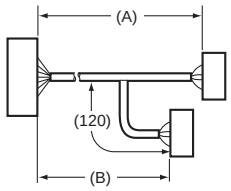
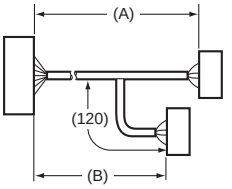
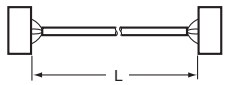
## Safety Precautions

**Be sure to read *the Safety Precautions for All I/O Relay Terminals* in the website: http://www.ia.omron.com/.**

# Connecting Cables

Refer to the datasheet for the **XW2Z-R** Cables for I/O Relay Terminals (Cat. No. G126).

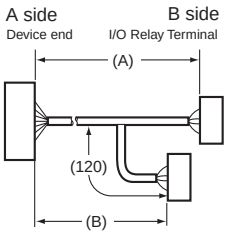
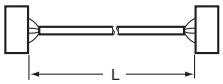
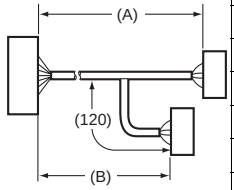
| Type | Name | I/O Classification | Appearance | Cable length L (mm) | | | Models |
|---|---|---|---|---|---|---|---|
| Various devices | Cables with Loose Wires and Crimp Terminals<br>XW2Z-RY□C | 16 I/O points |  | 1,000 | | | **XW2Z-RY100C** |
| | | | | 1,500 | | | **XW2Z-RY150C** |
| | | | | 2,000 | | | **XW2Z-RY200C** |
| | | | | 3,000 | | | **XW2Z-RY300C** |
| | | | | 5,000 | | | **XW2Z-RY500C** |
| | Cables with Loose Wires<br>XW2Z-RA□C | 16 I/O points |  | 2,000 | | | **XW2Z-RA200C** |
| | | | | 5,000 | | | **XW2Z-RA500C** |
| Fujitsu/Otax connectors (24 pins) | Cables with Connectors (1:1)<br>XW2Z-R□C | 16 I/O points |  | 1,000 | | | **XW2Z-R100C** |
| | | | | 1,500 | | | **XW2Z-R150C** |
| | | | | 2,000 | | | **XW2Z-R200C** |
| | | | | 3,000 | | | **XW2Z-R300C** |
| | | | | 5,000 | | | **XW2Z-R500C** |
| Fujitsu/Otax connectors (40 pins) | Cables with Connectors (1:2)<br>XW2Z-RI□C-□<br>XW2Z-RO□C-□ | 32 input points |  <br>Straight length (without bends) | (A) 1,000 | (B) 750 | | **XW2Z-RI100C-75** |
| | | | | (A) 1,500 | (B) 1,250 | | **XW2Z-RI150C-125** |
| | | | | (A) 2,000 | (B) 1,750 | | **XW2Z-RI200C-175** |
| | | | | (A) 3,000 | (B) 2,750 | | **XW2Z-RI300C-275** |
| | | | | (A) 5,000 | (B) 4,750 | | **XW2Z-RI500C-475** |
| | | 32 output points | | (A) 1,000 | (B) 750 | | **XW2Z-RO100C-75** |
| | | | | (A) 1,500 | (B) 1,250 | | **XW2Z-RO150C-125** |
| | | | | (A) 2,000 | (B) 1,750 | | **XW2Z-RO200C-175** |
| | | | | (A) 3,000 | (B) 2,750 | | **XW2Z-RO300C-275** |
| | | | | (A) 5,000 | (B) 4,750 | | **XW2Z-RO500C-475** |
| Fujitsu/Otax connectors (56 pins) | Cables with Connectors (1:3)<br>XW2Z-R□C-□-□ | 48 I/O points |  <br>Straight length (without bends) | (A) 1,500 | (B) 1,250 | (C) 1,000 | **XW2Z-R150C-125-100** |
| | | | | (A) 2,000 | (B) 1,750 | (C) 1,500 | **XW2Z-R200C-175-150** |
| | | | | (A) 3,000 | (B) 2,750 | (C) 2,500 | **XW2Z-R300C-275-250** |
| MIL connectors (20 pins) | Cables with Connectors (1:1)<br>XW2Z-RI□C<br>XW2Z-RO□C | 16 I/O points |  | 250 | | | **XW2Z-RI25C** |
| | | | | 500 | | | **XW2Z-RI50C** |
| | | | | 250 | | | **XW2Z-RO25C** |
| | | | | 500 | | | **XW2Z-RO50C** |

| Type | Name | I/O Classification | Appearance | Cable length L (mm) | | Models |
|---|---|---|---|---|---|---|
| MIL connectors (40 pins) | Cables with Connectors (1:2)<br><br>XW2Z-RO□-□-D1,<br>XW2Z-RI□-□-D1,<br>XW2Z-RI□-□-D2,<br>XW2Z-RM□-□-D1 *1,<br>XW2Z-RM□-□-D2 *1 | 32 I/O points |  <br>Straight length (without bends) | (A) 500 | (B) 250 | **XW2Z-RO50-25-D1** |
| | | | | (A) 750 | (B) 500 | **XW2Z-RO75-50-D1** |
| | | | | (A) 1,000 | (B) 750 | **XW2Z-RO100-75-D1** |
| | | | | (A) 1,500 | (B) 1,250 | **XW2Z-RO150-125-D1** |
| | | | | (A) 2,000 | (B) 1,750 | **XW2Z-RO200-175-D1** |
| | | | | (A) 3,000 | (B) 2,750 | **XW2Z-RO300-275-D1** |
| | | | | (A) 5,000 | (B) 4,750 | **XW2Z-RO500-475-D1** |
| | | | | (A) 500 | (B) 250 | **XW2Z-RI50-25-D1** |
| | | | | (A) 750 | (B) 500 | **XW2Z-RI75-50-D1** |
| | | | | (A) 1,000 | (B) 750 | **XW2Z-RI100-75-D1** |
| | | | | (A) 1,500 | (B) 1,250 | **XW2Z-RI150-125-D1** |
| | | | | (A) 2,000 | (B) 1,750 | **XW2Z-RI200-175-D1** |
| | | | | (A) 3,000 | (B) 2,750 | **XW2Z-RI300-275-D1** |
| | | | | (A) 5,000 | (B) 4,750 | **XW2Z-RI500-475-D1** |
| | | | | (A) 500 | (B) 250 | **XW2Z-RI50-25-D2** |
| | | | | (A) 750 | (B) 500 | **XW2Z-RI75-50-D2** |
| | | 16 inputs and 16 outputs (32 I/O points) | | (A) 500 | (B) 250 | **XW2Z-RM50-25-D1** |
| | | | | (A) 750 | (B) 500 | **XW2Z-RM75-50-D1** |
| Mitsubishi Electric PLCs with 32-point connectors (1:2) *2 | Mitsubishi Electric PLC Connecting Cables<br><br>XW2Z-RI□C-□-MN<br>XW2Z-RO□C-□-MN | 32 input points |  <br>Straight length (without bends) | (A) 1,000 | (B) 750 | **XW2Z-RI100C-75-MN** |
| | | | | (A) 1,500 | (B) 1,250 | **XW2Z-RI150C-125-MN** |
| | | | | (A) 2,000 | (B) 1,750 | **XW2Z-RI200C-175-MN** |
| | | | | (A) 3,000 | (B) 2,750 | **XW2Z-RI300C-275-MN** |
| | | 32 output points | | (A) 1,000 | (B) 750 | **XW2Z-RO100C-75-MN** |
| | | | | (A) 1,500 | (B) 1,250 | **XW2Z-RO150C-125-MN** |
| | | | | (A) 2,000 | (B) 1,750 | **XW2Z-RO200C-175-MN** |
| | | | | (A) 3,000 | (B) 2,750 | **XW2Z-RO300C-275-MN** |
| Schneider Electric PLCs with 32-point connectors (1:2)<br><br>Applicable models:<br>For inputs:<br>140 DDI 353 00<br>For outputs:<br>140 DDO 353 00 | Schneider Electric PLC Connecting Cables<br><br>XW2Z-R□C-SCH-□ | 32 input points |  <br>Straight length (without bends) | 500 | | **XW2Z-R050C-SCH-A** |
| | | | | 1,000 | | **XW2Z-R100C-SCH-A** |
| | | | | 2,000 | | **XW2Z-R200C-SCH-A** |
| | | | | 3,000 | | **XW2Z-R300C-SCH-A** |
| | | | | 5,000 | | **XW2Z-R500C-SCH-A** |
| | | 32 output points | | 500 | | **XW2Z-R050C-SCH-B** |
| | | | | 1,000 | | **XW2Z-R100C-SCH-B** |
| | | | | 2,000 | | **XW2Z-R200C-SCH-B** |
| | | | | 3,000 | | **XW2Z-R300C-SCH-B** |
| | | | | 5,000 | | **XW2Z-R500C-SCH-B** |
| Schneider Electric PLCs with 16-point connectors (1:1)<br><br>Applicable models:<br>For inputs:<br>BMX DDI 1602<br>For outputs:<br>BMX DDO 1602 | | 16 input points |  | 500 | | **XW2Z-R050C-SCH-C** |
| | | | | 1,000 | | **XW2Z-R100C-SCH-C** |
| | | | | 2,000 | | **XW2Z-R200C-SCH-C** |
| | | | | 3,000 | | **XW2Z-R300C-SCH-C** |
| | | | | 5,000 | | **XW2Z-R500C-SCH-C** |
| | | 16 output points | | 500 | | **XW2Z-R050C-SCH-D** |
| | | | | 1,000 | | **XW2Z-R100C-SCH-D** |
| | | | | 2,000 | | **XW2Z-R200C-SCH-D** |
| | | | | 3,000 | | **XW2Z-R300C-SCH-D** |
| | | | | 5,000 | | **XW2Z-R500C-SCH-D** |

**Note:** Contact for a cable length other than the above.

**✻1.** These cables are used to connect to slave products for DeviceNet and other networks.

**✻2.** For details on models that can be used, refer to *List of Combinations with the Mitsubishi PLC MELSEC-L Series, MELSEC-Q Series, and MELSEC iQ-R Series* on page 19.

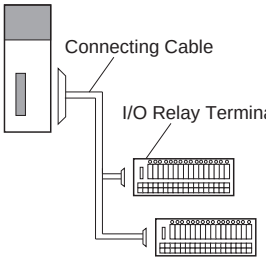
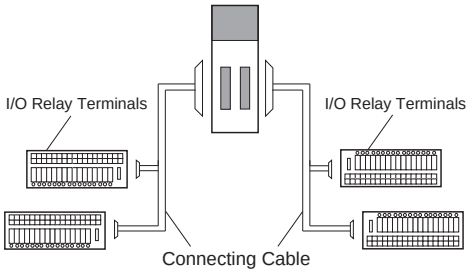
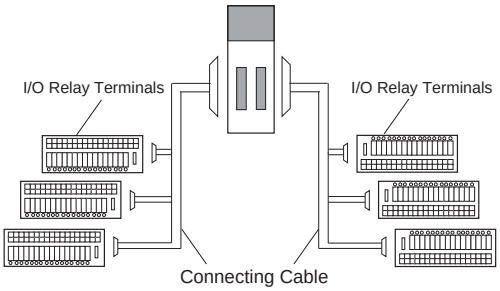
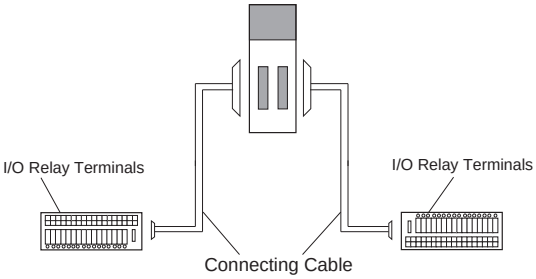
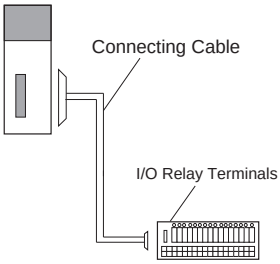
| Type | Name | I/O Classification | Appearance | Cable length L (mm) | Models |
|---|---|---|---|---|---|
| Siemens PLCs with 32-point connectors (1:2)<br><br>Applicable models:<br>For inputs:<br>6ES7 321-1BL00-0AA0<br>For outputs:<br>6ES7 322-1BL00-0AA0 | Siemens PLC Connecting Cables<br><br>XW2Z-R□C-SIM-□ | 32 input points |  <br>Straight length (without bends) | 500 | **XW2Z-R050C-SIM-A** |
| | | | | 1,000 | **XW2Z-R100C-SIM-A** |
| | | | | 2,000 | **XW2Z-R200C-SIM-A** |
| | | | | 3,000 | **XW2Z-R300C-SIM-A** |
| | | | | 5,000 | **XW2Z-R500C-SIM-A** |
| | | 32 output points | | 500 | **XW2Z-R050C-SIM-B** |
| | | | | 1,000 | **XW2Z-R100C-SIM-B** |
| | | | | 2,000 | **XW2Z-R200C-SIM-B** |
| | | | | 3,000 | **XW2Z-R300C-SIM-B** |
| | | | | 5,000 | **XW2Z-R500C-SIM-B** |
| Siemens PLCs with 16-point connectors (1:1)<br><br>Applicable models:<br>For inputs:<br>6ES7 321-1BH02-0AA0 | | 16 input points |  | 500 | **XW2Z-R050C-SIM-C** |
| | | | | 1,000 | **XW2Z-R100C-SIM-C** |
| | | | | 2,000 | **XW2Z-R200C-SIM-C** |
| | | | | 3,000 | **XW2Z-R300C-SIM-C** |
| | | | | 5,000 | **XW2Z-R500C-SIM-C** |
| Siemens PLCs with 32-point connectors (1:2)<br><br>Applicable models:<br>For inputs:<br>6ES7 421-1BL-0AA0<br>For outputs:<br>6ES7 422-1BL-0AA0 | | 32 input points |  <br>Straight length (without bends) | 500 | **XW2Z-R050C-SIM-D** |
| | | | | 1,000 | **XW2Z-R100C-SIM-D** |
| | | | | 2,000 | **XW2Z-R200C-SIM-D** |
| | | | | 3,000 | **XW2Z-R300C-SIM-D** |
| | | | | 5,000 | **XW2Z-R500C-SIM-D** |
| | | 32 output points | | 500 | **XW2Z-R050C-SIM-E** |
| | | | | 1,000 | **XW2Z-R100C-SIM-E** |
| | | | | 2,000 | **XW2Z-R200C-SIM-E** |
| | | | | 3,000 | **XW2Z-R300C-SIM-E** |
| | | | | 5,000 | **XW2Z-R500C-SIM-E** |

**Note: 1.** Refer to Combinations of Connections starting on the next page.
**2.** For connector pin diagrams and cable colors, refer to the wiring diagrams starting on page 4 of *XW2Z-R Cables for I/O Relay Terminals* (Cat. No. G126).

# Combinations of Connections

Refer to the next page for details on the combinations of cables and connection devices [OMRON PLC I/O Units NX Series, CJ Series, CS Series], [Mitsubishi PLC I/O Units MELSEC-L Series, MELSEC-Q Series, MELSEC iQ-R Series].
For combinations with other products, refer to *I/O Relay Terminals and Connected Devices* (Cat. No. J217) or to the datasheets for related products.

## Connection Patterns

| Pattern | Configuration |
|---|---|
| A |  |
| B |  |
| D |  |
| E |  |
| F |  |

## List of Combinations with the OMRON PLC NX Series

| NX I/O Units | | | | Connection pattern | XW2Z-R Cables | | | G70A-ZOC16 Relay Terminal Socket | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I/O capacity | Model | External connectors ✻2 | Polarity | | Specifications | Model ✻2 | Quantity required | Specifications | Model | Quantity required |
| **Input Units** | | | | | | | | | | |
| **16 inputs** | NX-ID5142-5 | 1 MIL connector | NPN or PNP | F | 1:1 | XW2Z-RO□C | 1 | Inputs ✻3 | --- | |
| **32 inputs** | NX-ID6142-5 | 1 MIL connector | NPN or PNP | A | 1:2 | XW2Z-RO□-□-D1 | 1 | | --- | |
| | NX-ID6142-6 | 1 Fujitsu/Otax connector | NPN or PNP | | | XW2Z-RI□C-□ | 1 | | --- | |
| **Output Units** | | | | | | | | | | |
| **16 outputs** | NX-OD5121-5 | 1 MIL connector | NPN | F | 1:1 | XW2Z-RO□C | 1 | NPN outputs | G70A-ZOC16-3 | 1 |
| | NX-OD5256-5 | 1 MIL connector | PNP | | | XW2Z-RO□C | 1 | PNP outputs | G70A-ZOC16-4 | 1 |
| **32 outputs** | NX-OD6121-5 | 1 MIL connector | NPN | A | 1:2 | XW2Z-RO□-□-D1 | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | NX-OD6256-5 | 1 MIL connector | PNP | | | XW2Z-RO□-□-D1 | 1 | PNP outputs | G70A-ZOC16-4 | 2 |
| **32 outputs** | NX-OD6121-6 | 1 Fujitsu/Otax connector | NPN | | | XW2Z-RO□C-□ | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| **Mixed I/O Units** | | | | | | | | | | |
| **16 inputs and 16 outputs** | NX-MD6121-6 | 2 Fujitsu/Otax connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: NPN Inputs: NPN or PNP | E | 1:1 | XW2Z-R□C | 2 | Inputs ✻3 | --- | |
| | | | | | | | | NPN outputs | G70A-ZOC16-3 | 1 |
| | NX-MD6121-5 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: NPN Inputs: NPN or PNP | | | XW2Z-RO□C | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RO□C | 1 | NPN outputs | G70A-ZOC16-3 | 1 |
| | NX-MD6256-5 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: PNP Inputs: NPN or PNP | | | XW2Z-RO□C | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RI□C | 1 | PNP outputs | G70A-ZOC16-4 | 1 |

**✻1.** For details on the types of connectors, refer to pages 12 and 13.
**✻2.** The box □ is replaced by the cable length.
**✻3.** Either NPN inputs or PNP inputs can be used.

## List of Combinations with the OMRON PLC CJ Series

| CJ1W I/O Units | | | | Connection pattern | XW2Z-R Cables | | | G70A-ZOC16 Relay Terminal Socket | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I/O capacity | Model | External connectors ✻1 | Polarity | | Specifications | Model ✻2 | Quantity required | Specifications | Model | Quantity required |
| **DC Input Units** | | | | | | | | | | |
| **32 inputs** | CJ1W-ID231 | 1 Fujitsu/Otax connector | NPN | A | 1:2 | XW2Z-RI□C-□ | 1 | Inputs ✻3 | --- | |
| | CJ1W-ID232 | 1 MIL connector | NPN | | | XW2Z-RO□-□-D1 | 1 | | --- | |
| | CJ1W-ID233 | 1 MIL connector | NPN | | | XW2Z-RO□-□-D1 | 1 | | --- | |
| **64 inputs** | CJ1W-ID261 | 2 Fujitsu/Otax connectors (2, 32-point connectors) | NPN | B | | XW2Z-RI□C-□ | 2 | | --- | |
| | CJ1W-ID262 | 2 MIL connectors (2, 32-point connectors) | NPN | | | XW2Z-RO□-□-D1 | 2 | | --- | |
| **Transistor Output Units** | | | | | | | | | | |
| **32 outputs** | CJ1W-OD231 | 1 Fujitsu/Otax connector | Sinking (NPN) | A | 1:2 | XW2Z-RO□C-□ | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | CJ1W-OD233 | 1 MIL connector | Sinking (NPN) | | | XW2Z-RO□-□-D1 | 1 | | G70A-ZOC16-3 | |
| | CJ1W-OD232 | 1 MIL connector | Sourcing (PNP) | | | XW2Z-RO□-□-D1 | 1 | PNP outputs | G70A-ZOC16-4 | 2 |
| | CJ1W-OD234 | 1 MIL connector | Sinking (NPN) | | | XW2Z-RO□-□-D1 | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| **64 outputs** | CJ1W-OD261 | 2 Fujitsu/Otax connectors (2, 32-point connectors) | Sinking (NPN) | B | | XW2Z-RO□C-□ | 2 | NPN outputs | G70A-ZOC16-3 | 2 |
| | CJ1W-OD262 | 2 MIL connectors (2, 32-point connectors) | Sourcing (PNP) | | | XW2Z-RO□-□-D1 | 2 | PNP outputs | G70A-ZOC16-4 | 2 |
| | CJ1W-OD263 | 2 MIL connectors (2, 32-point connectors) | Sinking (NPN) | | | XW2Z-RO□-□-D1 | 2 | NPN outputs | G70A-ZOC16-3 | 2 |
| **DC Input/Transistor Output Units** | | | | | | | | | | |
| **16 inputs and 16 outputs** | CJ1W-MD231 | 2 Fujitsu/Otax connectors (1 for 16 inputs and 1 for 16 outputs) | Sinking (NPN) | E | 1:1 | XW2Z-R□C | 2 | Inputs ✻3 | --- | |
| | | | | | | | | NPN outputs | G70A-ZOC16-3 | 1 |
| | CJ1W-MD233 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Sinking (NPN) | | | XW2Z-RO□C | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RO□C | 1 | NPN outputs | G70A-ZOC16-3 | 1 |
| | CJ1W-MD232 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Sourcing (PNP) | | | XW2Z-RO□C | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RI□C | 1 | PNP outputs | G70A-ZOC16-4 | 1 |
| **32 inputs and 32 outputs** | CJ1W-MD261 | 2 Fujitsu/Otax connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | B | 1:2 | XW2Z-RI□C-□ | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RO□C-□ | 1 | NPN outputs | G70A-ZOC16-3 | 1 |
| | CJ1W-MD263 | 2 MIL connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | | | XW2Z-RO□-□-D1 | 1 | Inputs ✻3 | --- | |
| | | | | | | XW2Z-RO□-□-D1 | 1 | NPN outputs | G70A-ZOC16-4 | 2 |

**✻1.** For details on the types of connectors, refer to pages 12 and 13.
**✻2.** The box □ is replaced by the cable length.
**✻3.** Either NPN inputs or PNP inputs can be used.

## List of Combinations with the OMRON PLC CS Series

| CJ1W I/O Units | | | | Connection pattern | XW2Z-R Cables | | | G70A-ZOC16 Relay Terminal Socket | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I/O capacity | Model | External connectors | Polarity | | Specifications | Model ✻1 | Quantity required | Specifications | Model | Quantity required |
| **DC Input Units** | | | | | | | | | | |
| **32 inputs** | CS1W-ID231 | 1 Fujitsu/Otax connector | NPN | A | 1:2 | XW2Z-RI□C-□ | 1 | Inputs ✻2 | --- | |
| **64 inputs** | CS1W-ID261 | 2 Fujitsu/Otax connectors (2, 32-point connectors) | NPN | B | | XW2Z-RI□C-□ | 2 | | --- | |
| **96 inputs** | CS1W-ID291 | 2 Fujitsu/Otax connectors (2, 48-point connectors) | NPN | D | 1:3 | XW2Z-R□C-□-□ | 2 | | --- | |
| **Transistor Output Units** | | | | | | | | | | |
| **32 outputs** | CS1W-OD231 | 1 Fujitsu/Otax connector | Sinking (NPN) | A | 1:2 | XW2Z-RO□C-□ | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | CS1W-OD232 | 1 Fujitsu/Otax connector | Sourcing (PNP) | | | XW2Z-RO□C-□ | 1 | PNP outputs | G70A-ZOC16-4 | 2 |
| **64 outputs** | CS1W-OD261 | 2 Fujitsu/Otax connectors (2, 32-point connectors) | Sinking (NPN) | B | | XW2Z-RO□C-□ | 2 | NPN outputs | G70A-ZOC16-3 | 4 |
| | CS1W-OD262 | 2 Fujitsu/Otax connectors (2, 32-point connectors) | Sourcing (PNP) | | | XW2Z-RO□C-□ | 2 | PNP outputs | G70A-ZOC16-4 | 4 |
| **96 outputs** | CS1W-OD291 | 2 Fujitsu/Otax connectors (2, 48-point connectors) | Sinking (NPN) | D | 1:3 | XW2Z-R□C-□-□ | 2 | NPN outputs | G70A-ZOC16-3 | 6 |
| **DC Input/Transistor Output Units** | | | | | | | | | | |
| **32 inputs and 32 outputs** | CS1W-MD261 | 2 Fujitsu/Otax connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | B | 1:2 | XW2Z-RI□C-□ | 1 | Inputs ✻2 | --- | |
| | | | | | | XW2Z-RO□C-□ | 1 | NPN outputs | G70A-ZOC16-3 | 1 |
| | CS1W-MD262 | 2 Fujitsu/Otax connectors (1 for 32 inputs and 1 for 32 outputs) | Sourcing (PNP) | | | XW2Z-RI□C-□ | 1 | Inputs ✻2 | --- | |
| | | | | | | XW2Z-RO□C-□ | 1 | PNP outputs | G70A-ZOC16-4 | 2 |
| **48 inputs and 48 outputs** | CS1W-MD291 | 2 Fujitsu/Otax connectors (1 for 48 inputs and 1 for 48 outputs) | Sinking (NPN) | D | 1:3 | XW2Z-R□C-□-□ | 2 | Inputs ✻2 | --- | |
| | | | | | | | | NPN outputs | G70A-ZOC16-3 | 3 |
| | CS1W-MD292 | 2 Fujitsu/Otax connectors (1 for 48 inputs and 1 for 48 outputs) | Sourcing (PNP) | | | XW2Z-R□C-□-□ | 1 | Inputs ✻2 | --- | |
| | | | | | | --- | | | | |

**✻1.** The box □ is replaced by the cable length.
**✻2.** Either NPN inputs or PNP inputs can be used.

Refer to the manuals for the connected PLC for the connections to I/O Units for OMRON PLCs.

| Series | Model | Man. No. | Manual Name |
|---|---|---|---|
| CS1 | CS1G-CPU□□H, CS1H-CPU□□H | W339 | Programmable Controllers Operation Manual |
| CJ1 | CJ1H-CPU□□H-R, CJ1G/H-CPU□□H, CJ1G-CPU□□P, CJ1M-CPU□□, CJ1G-CPU□□ | W393 | CJ Series Programmable Controllers Operation Manual |
| CJ2 | CJ2H-CPU6□-EIP, CJ2H-CPU6□, CJ2M-CPU□□ | W472 | CJ-series CJ2 CPU Unit Hardware User's Manual |
| NJ | NJ501-□□□□ | W500 | NJ-series CPU Unit Hardware User's Manual |
| NX | NX-ID□□□□, NX-IA□□□□, NX-OD□□□□, NX-OC□□□□, NX-MD□□□□ | W521 | NX-series Digital I/O Units User's Manual |

## List of Combinations with the Mitsubishi PLC MELSEC-L Series, MELSEC-Q Series, and MELSEC iQ-R Series

| PLC I/O Unit | | | | Connection pattern | XW2Z-R Cables | | | G70A-ZOC16 Relay Terminal Socket | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I/O capacity | Model | External connectors | Polarity | | Specifications | Model ✻ | Quantity required | Specifications | Model | Quantity required |
| **Input Units** | | | | | | | | | | |
| **32 inputs** | LX41C4 | 1 Fujitsu/Otax connector | NPN or PNP | A | 1:2 | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | QX41/QX41-S1/ QX41-S2 | | | | | | | | | |
| | QX71 | | | | | | | | | |
| | RX41C4 | | | | | | | | | |
| **64 inputs** | LX42C4 | 2 Fujitsu/Otax connectors | | B | | XW2Z-RI□□□-□□MN | 2 | --- | | |
| | QX42/QX42-S1 | | | | | | | | | |
| | QX82/QX82-S1 | | | | | | | | | |
| | RX42C4 | | | | | | | | | |
| **Output Units** | | | | | | | | | | |
| **32 outputs** | LY41NT1P | 1 Fujitsu/Otax connector | NPN | A | 1:2 | XW2Z-RO□□□-□□MN | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | QY41P | | | | | | | | | |
| | QY71 | | | | | | | | | |
| | RY41NT2P | | | | | | | | | |
| | LY41PT1P | 1 Fujitsu/Otax connector | PNP | | | XW2Z-RO□□□-□□MN | 1 | PNP outputs | G70A-ZOC16-4 | 2 |
| | RY41PT1P | | | | | | | | | |
| | RY41PT2H | | | | | | | | | |
| **64 outputs** | LY42NT1P | 2 Fujitsu/Otax connectors | NPN | B | | XW2Z-RO□□□-□□MN | 2 | NPN outputs | G70A-ZOC16-3 | 4 |
| | RY42NT2P | | | | | | | | | |
| | QY42P | | | | | | | | | |
| | LY42PT1P | 2 Fujitsu/Otax connectors | PNP | | | XW2Z-RO□□□-□□MN | 2 | PNP outputs | G70A-ZOC16-4 | 4 |
| | RY42PT1P | | | | | | | | | |
| | QY82P | | | | | | | | | |
| **Mixed I/O Units** | | | | | | | | | | |
| **32 inputs and 32 outputs** | RH42C4NT2P (Input side) | 2 Fujitsu/Otax connectors | NPN or PNP | B | 1:2 | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | RH42C4NT2P (Output side) | | NPN | | | XW2Z-RO□□□-□□MN | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | QH42P (Input side) | 2 Fujitsu/Otax connectors | NPN or PNP | | | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | QH42P (Output side) | | NPN | | | XW2Z-RO□□□-□□MN | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | QX41Y41P (Input side) | 2 Fujitsu/Otax connectors | NPN or PNP | | | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | QX41Y41P (Output side) | | NPN | | | XW2Z-RO□□□-□□MN | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | LH42C4NT1P (Input side) | 2 Fujitsu/Otax connectors | NPN or PNP | | | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | LH42C4NT1P (Output side) | | NPN | | | XW2Z-RO□□□-□□MN | 1 | NPN outputs | G70A-ZOC16-3 | 2 |
| | LH42C4PT1P (Input side) | 2 Fujitsu/Otax connectors | NPN or PNP | | | XW2Z-RI□□□-□□MN | 1 | --- | | |
| | LH42C4PT1P (Output side) | | PNP | | | XW2Z-RO□□□-□□MN | 1 | PNP outputs | G70A-ZOC16-4 | 2 |

**Note:** Cables that can be connected to the QX81, QX81-S2, and QY81P have not been prepared.
✻ The box □ is replaced by the cable length. For details on the types, refer to page 13.

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