

I/O Relay Terminal G70V

I/O Relay Terminals with 16 Points and Push-In Plus Terminal Blocks to Downsize Control Panels Reduce Wiring Time



- Wiring time is reduced by 60% compared to traditional screw terminals.
- I/O Relay Terminals with 16 points accept G2RV Slim I/O Relays or G3RV SSRs.
- Work is reduced even further with one-step cable connection to the PLC.
- Diode provided for coil surge absorption.
- Operation indicators for immediate recognition of I/O signal status.
- DIN Track or screw mounting.
- New models provide internal common connections between I/O terminals to further reduce wiring work. (input models: 16 point/common; output models: 4 points/common)



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

* According to OMRON actual measurement data from November 2015.

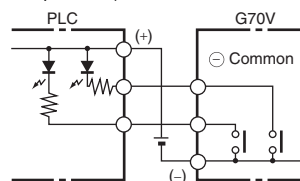
Refer to *Safety Precautions* on page 15.

Model Number Legend

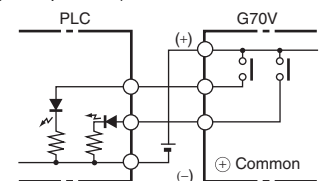
G70V - □ □ □ 16 P - □ - □
 (1) (2) (3) (4) (5) (6) (7)

- (1) Mountable Relays
 - S: Relays
 - Z: Sockets
- (2) Input/Output Classification
 - I: For input
 - O: For output
- (3) I/O Specification
 - C: Contacts
 - (Applicable when (2) is O (for output) (relay output).)
 - D: DC (Applicable when (2) is I (for input) (coil for input).)
 - M: AC/DC (Applicable when (1) is Z (Sockets).)
- (4) Number of I/O Points
 - 16: 16 points
- (5) Terminal Type
 - P: Push-In Plus terminal blocks
- (6) Common Line on Connector Side
 - Blank: NPN
 - 1: PNP
- (7) Common Line on Terminal Block Side
 - Blank: No internal connections
 - C4: Every 4 points internally connected at terminal block bottom row
 - C4-D: Every 4 points internally connected at terminal block middle row
 - C16: 16 points internally connected

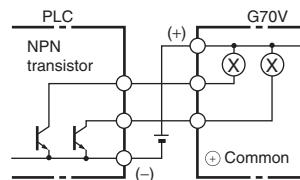
(For Input NPN)



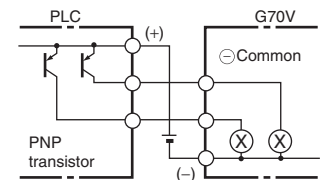
(For Input PNP)



(For Output NPN)



(For Output PNP)



G70V

Ordering Information

I/O Relay Terminals

| Terminals | Classification | Points | Common Line | | Rated voltage | Model |
|------------------------------|----------------|--------|--|----------------|---------------|-------------------|
| | | | Terminal Block Side | Connector Side | | |
| Push-In Plus terminal blocks | Input *1 | 16 | No internal connections | NPN (– common) | 24 VDC | G70V-SID16P |
| | | | | PNP (+ common) | | G70V-SID16P-1 |
| | | | 16 points internally connected | NPN (– common) | | G70V-SID16P-C16 |
| | | | | PNP (+ common) | | G70V-SID16P-1-C16 |
| | Output *2 | | No internal connections | NPN (+ common) | | G70V-SOC16P |
| | | | | PNP (– common) | | G70V-SOC16P-1 |
| | | | Every 4 points internally connected at terminal block bottom row | NPN (+ common) | | G70V-SOC16P-C4 |
| | | | | PNP (– common) | | G70V-SOC16P-1-C4 |

*1. Mountable Relays: G2RV-1-S-AP-G DC21V.

*2. Mountable Relays: G2RV-1-S-G DC21V.

I/O Terminal Sockets

| Applicable I/O Relay Terminal | Classification | Common Line | | Model |
|-------------------------------|----------------|--|----------------|--------------------|
| | | Terminal Block Side | Connector Side | |
| G70V-SID16P | Input | No internal connections | NPN (– common) | G70V-ZID16P |
| G70V-SID16P-1 | | | PNP (+ common) | G70V-ZID16P-1 |
| G70V-SID16P-C16 | | 16 points internally connected | NPN (– common) | G70V-ZID16P-C16 |
| G70V-SID16P-1-C16 | | | PNP (+ common) | G70V-ZID16P-1-C16 |
| G70V-SOC16P | Output | No internal connections | NPN (+ common) | G70V-ZOM16P |
| G70V-SOC16P-1 | | | PNP (– common) | G70V-ZOM16P-1 |
| G70V-SOC16P-C4 | | Every 4 points internally connected at terminal block bottom row | NPN (+ common) | G70V-ZOM16P-C4 |
| G70V-SOC16P-1-C4 | | | PNP (– common) | G70V-ZOM16P-1-C4 |
| --- * | | Every 4 points internally connected at terminal block middle row | PNP (– common) | G70V-ZOM16P-1-C4-D |

Note: Relays are not mounted to the G70V-ZID/ZOM16P(-1) I/O Terminal Sockets. Combine the I/O Terminal Sockets with Slim I/O Relays or Slim I/O SSRs.

* The G70V-ZOM16P-1-C4-D does not come with SSRs. Use Slim I/O SSRs (for DC: G3RV-D03SL).

Accessories (Order Separately)

Mountable Relays

| Applicable I/O Relay Terminal | Classification | Type | | Model | |
|--|----------------|--------------------|----------------------|------------------------|-----------------|
| G70V-SID16P(-1)(-C16) G70V-ZID16P(-1)(-C16) | Input | Slim I/O Relays *1 | | G2RV-1-S-AP-G DC21 | |
| G70V-SOC16P(-1)(-C4) G70V-ZOM16P(-1)(-C4) | Output | Slim I/O Relays | No Latching Lever *2 | G2RV-1-S-G DC21 | |
| | | | Latching Lever | G2RV-1-SI-G DC21 | |
| | | Slim I/O SSRs | For AC | Zero cross function | G3RV-202S DC24 |
| | | | | No zero cross function | G3RV-202SL DC24 |
| G70V-ZOM16P-1-C4-D *3 | Output | Slim I/O SSRs | For DC | G3RV-D03SL DC24 | |
| | | | For DC | G3RV-D03SL DC24 | |

Note: To use Slim I/O SSRs, either remove the Slim I/O Relays to mount them or order a I/O Terminal Sockets and I/O SSRs separately and combine them.

*1. G2RV-1-S-AP-G Slim I/O Relays are mounted to G70V-SID16P(-1)(-C16) I/O Relay Terminals as a standard feature.

*2. G2RV-1-S-G Slim I/O Relays are mounted to G70V-SOC16P(-1)(-C4) I/O Relay Terminals as a standard feature.

*3. The G70V-ZOM16P-1-C4-D does not come with SSRs. Use Slim I/O SSRs (for DC: G3RV-D03SL).


When ordering, designate the rated voltage.

Cables for I/O Relay Terminals XW2Z-R

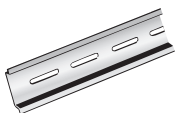


- Cable with Loose Wire and Crimp Terminals: XW2Z-RY□C
- Cable with Loose Wires: XW2Z-RA□C
- Cable with connectors
 - Fujitsu connectors
 - (1:1): XW2Z-R□C
 - (1:2): XW2Z-RI□C-□
 - XW2Z-RO□C-□
 - (1:3): XW2Z-R□C-□-□
 - (1:1): XW2Z-RI□C
 - XW2Z-RO□C
 - (1:2): XW2Z-RI□-□-D□
 - XW2Z-RM□-□-D□
 - XW2Z-RO□-□-D1

Refer to *Connecting Cables* on page 17 for details.

Labels

| Appearance | Model | Minimum order (sheet) (quantity per sheet) |
|---|--------------|---|
|  | XW5Z-P2.5LB2 | 5 (1 sheet / 72 pieces) |

Accessories for DIN Track Mounting

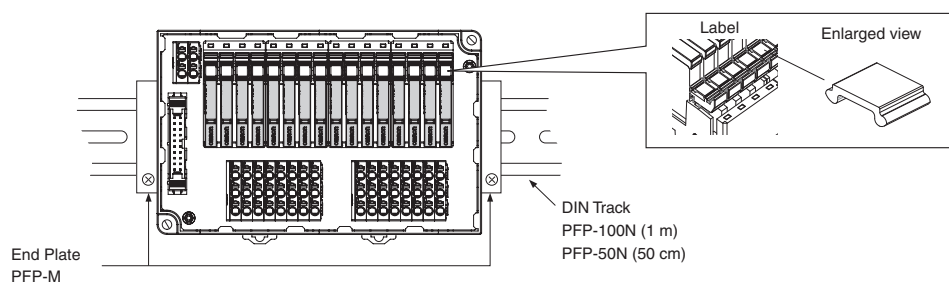
| Appearance | Name | Model | Minimum order (quantity) |
|---|------------|-------|-----------------------------|
|  | DIN Tracks | 1 m | 1 |
| | | 0.5 m | |
|  | End Plate | PFP-M | 10 |
|  | Spacer | PFP-S | |

* These products must be ordered in sets of 10.

Refer to your OMRON website for details on the PFP-□.

Mounting Example Using the Accessories

Mounting to DIN Track



G70V

Specifications

Coil Ratings (Common to Input/Output per Relay)

| Item | Rated current (mA) | Coil resistance (Ω) | Must operate of rated voltage | Must release of rated voltage | Maximum voltage of rated voltage | Power consumption (mW) |
|-------------------|--------------------|------------------------------|-------------------------------|-------------------------------|----------------------------------|------------------------|
| Rated voltage (V) | 13.3 | 1575 | 80% max. | 10% min. | 110% | Approx. 280 |

- Note:**
1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $\pm 15\%$ for coil resistance.
 2. The operating characteristics are measured at a coil temperature of 23°C.
 3. The value for maximum voltage is the maximum value within the allowable voltage fluctuation range for the relay coil's operating power supply. Continuous operation at this voltage is not within product specifications.
 4. The rated current includes the current for the indicators on the I/O Relay Terminal.

Contact Ratings (G2RV-1-S-G I/O Relay)

| Classification | For input | | For output | |
|--------------------------------|------------------------------------|--|--|---|
| | Resistive load ($\cos\phi=1$) | | Resistive load ($\cos\phi=1$) | Inductive load ($\cos\phi=0.4$ L/R=7 ms) |
| Rated load | 50 mA at 30 VAC 50 mA at 36 VDC | | 6 A at 250 VAC 6 A at 30 VDC | 2.5 A at 250 VAC 2 A at 30 VDC |
| Rated carry current | 50 mA | | 6 A/point, 10 A/common | |
| Max. switching voltage | 30 VAC, 36 VDC | | 250 VAC, 125 VDC | |
| Max. switching current | 50 mA | | 6 A/point, 10 A/common | |
| Maximum switching capacity | --- | | 1,500 VA 180 W | 500 VA 60 W |
| Error rate (reference value) * | 1 mA at 100 mVDC | | 10 mA at 5 VDC | |
| Electrical endurance | 5,000,000 operations min. | | NO contacts: 70,000 operations min. NC contacts: 50,000 operations min. | |
| Mechanical endurance | 5,000,000 operations min. | | 5,000,000 operations min. | |

* The above values are for a switching frequency of 120 operations/min.

Characteristics

| Item | Model | G70V-SID16P(-1)(-C16) (Input, DC coil) | G70V-SOC16P(-1)(-C4) (output, DC coil) |
|-------------------------------|------------------|--|---|
| Contact form | | SPST-NO \times 16 | SPDT \times 16 |
| Contact material | | Ag alloy + Au plating | Ag alloy |
| Contact resistance *1 | | 150 m Ω max. | |
| Must Operate time *2 | | 20 ms max. | |
| Release time *2 | | 40 ms max. | |
| Max. switching frequency | Mechanical limit | 18,000 operations/h | |
| | At rated load | 1,800 operations/h (under rated load) | |
| Insulation resistance | | 100 M Ω min. | |
| Dielectric strength | | Between coil and contacts: 2,500 VAC for 1 min | |
| Vibration resistance | | 100 m/s ² | |
| Shock resistance | | 100 m/s ² , 3 times each in 6 directions along 3 axes | |
| Noise immunity | | Noise level: 1.5 kV; pulse width: 100 ns to 1 μ s | |
| Ambient operating temperature | | -40 to 55°C (with no icing or condensation) | |
| Ambient operating humidity | | 35% to 85% | |
| LED color | Power supply | Green | |
| | I/O | Yellow | |
| Weight | | Approx. 350 g | Approx. 370 g |

Note: The above values are initial values.

*1. Measurement: 1 A at 5 VDC.

*2. Ambient temperature: 23°C.

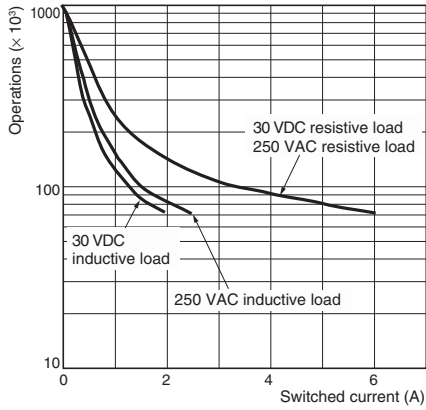
Applicable Standards

- UL 61010-2-201, CAN/CSA-C22.2 No.61010-2-201, TÜV (EN 61810-1)

Engineering Data (Reference Value)

Endurance Curve (NO Contacts)

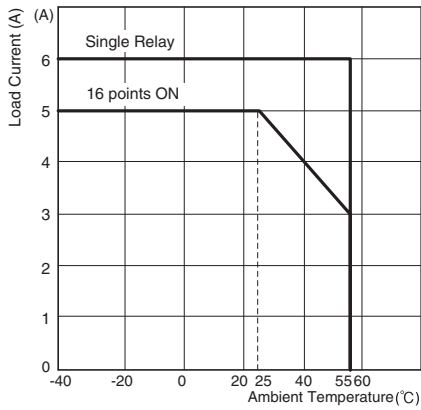
G70V-SOC16P(-1)(-C4)



Note: These data are actual measured values that were sampled from the production line and prepared in graph format, and are for reference purposes only. A relay is manufactured by mass production, and as a basic rule must be used with allowance made for a certain amount of deviation.

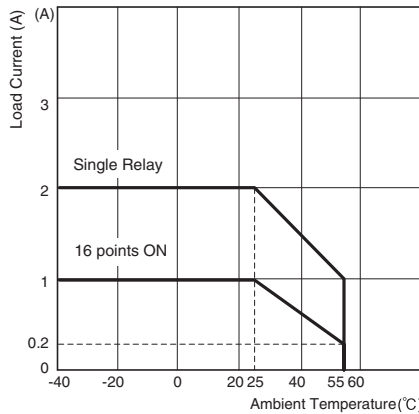
Load Current vs. Ambient Temperature

G70V-SOC16P(-1)(-C4)

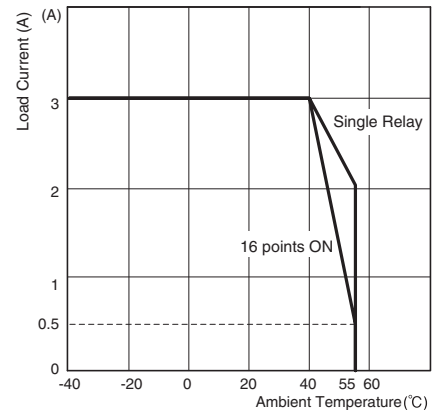


G3RV-202S DC24

G3RV-202SL DC24



G3RV-D03 DC24

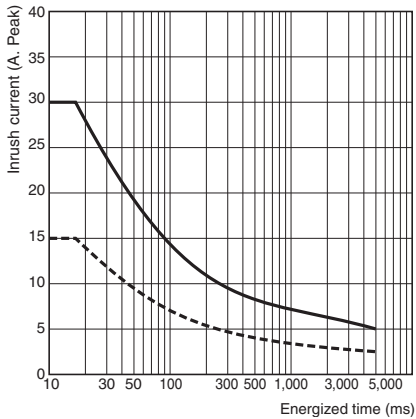


Inrush Current Resistance: Non-repetitive

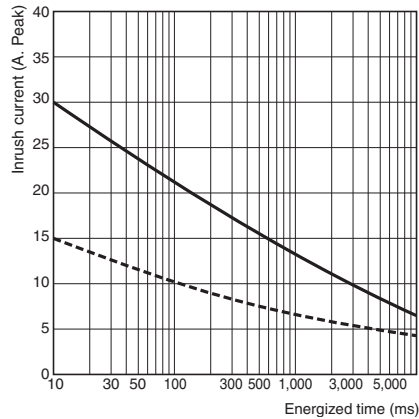
The following graphs show the maximum inrush currents that can be withstood for non-repetitive operation. For repetitive operation, the figures should be reduced by half.

G3RV-202S DC24

G3RV-202SL DC24



G3RV-D03 DC24



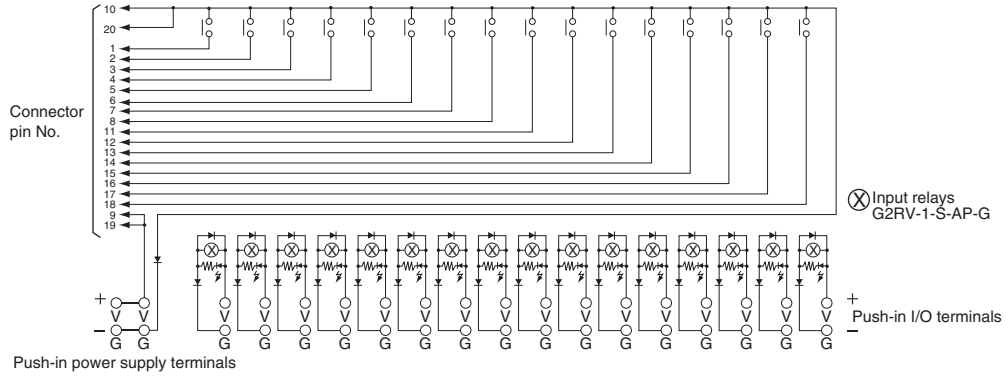
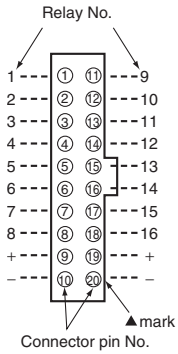
G70V

Internal Circuits

G70V-SID16P

(NPN input/- common)

Connector Pin Configuration Top View



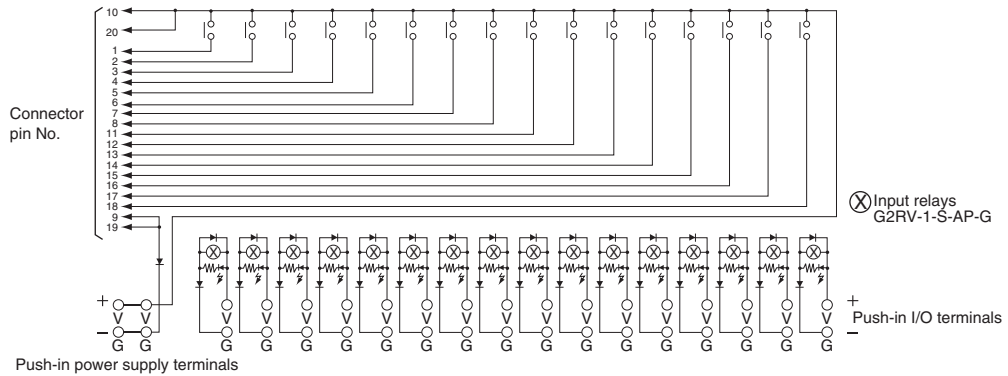
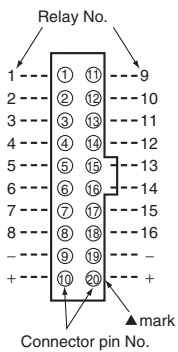
Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|------------------------------------|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| V (push-in I/O terminals) | Relay-drive coil terminals (24 VDC) |
| G (push-in I/O terminals) | |

G70V-SID16P-1

(PNP input/+ common)

Connector Pin Configuration Top View

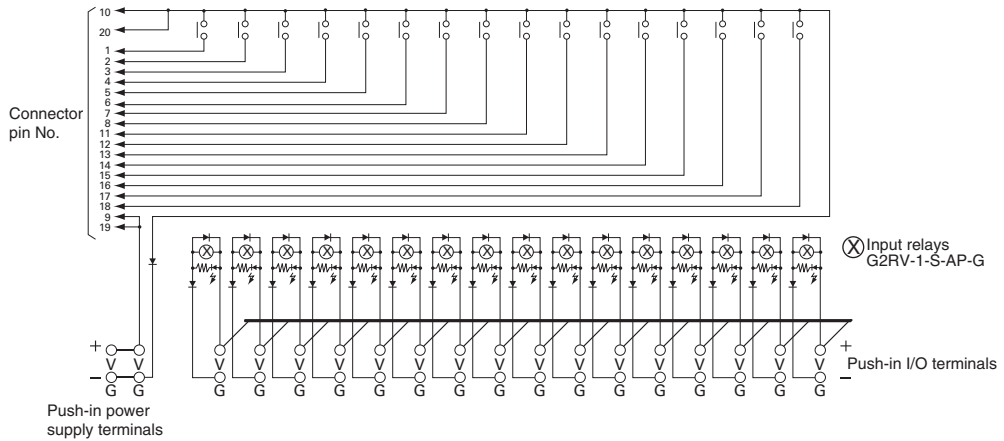
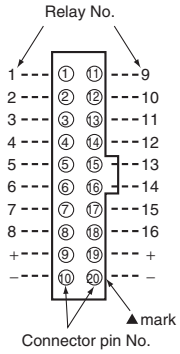


Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|------------------------------------|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| V (push-in I/O terminals) | Relay-drive coil terminals (24 VDC) |
| G (push-in I/O terminals) | |

G70V-SID16P-C16
(NPN input/- common)

Connector Pin Configuration Top View

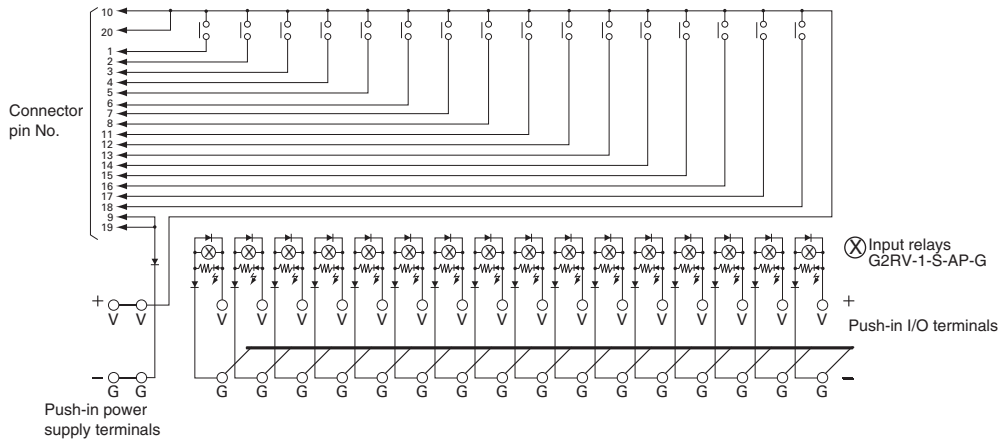
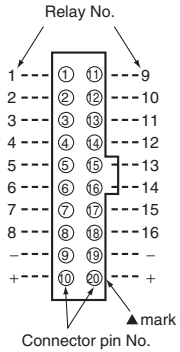


Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|------------------------------------|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| V (push-in I/O terminals) | Relay-drive coil terminals (24 VDC) |
| G (push-in I/O terminals) | |

G70V-SID16P-1-C16
(PNP input/+ common)

Connector Pin Configuration Top View



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

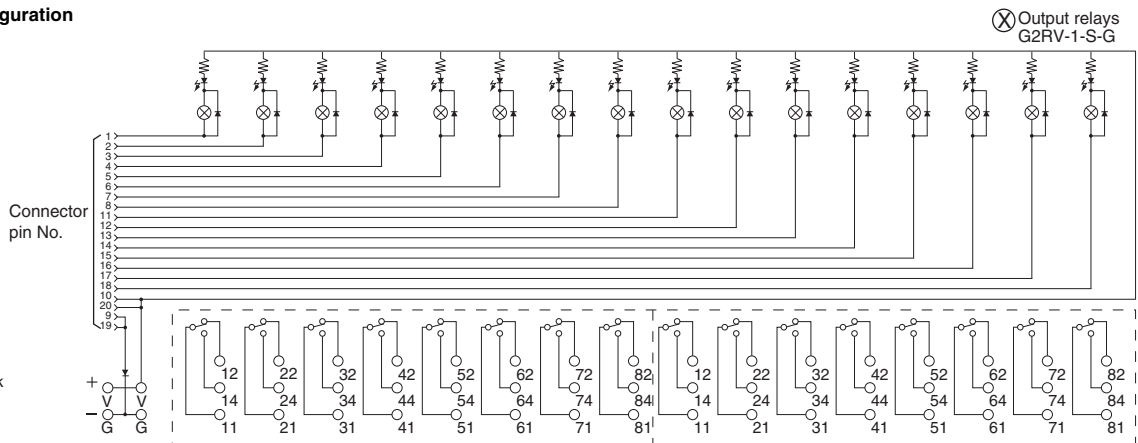
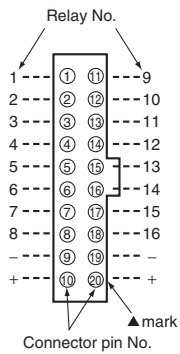
| Terminal name | Description |
|------------------------------------|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| V (push-in I/O terminals) | Relay-drive coil terminals (24 VDC) |
| G (push-in I/O terminals) | |

G70V-SOC16P

(NPN output/+ common)

Note: A controller with an NPN transistor, common output can be connected to the G70V-SOC16P.

Connector Pin Configuration Top View



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

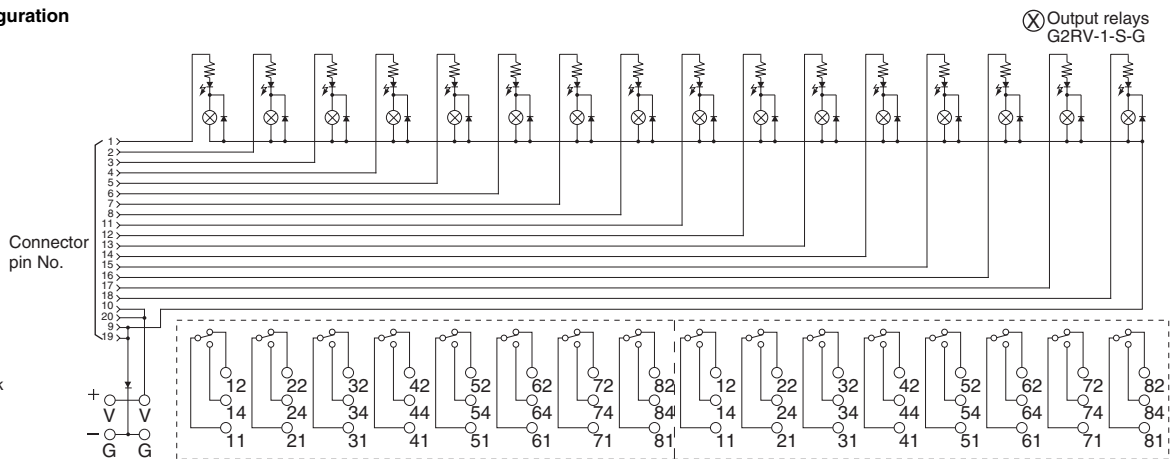
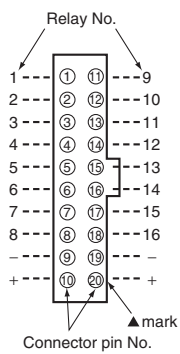
| Terminal name | Description |
|--|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| 11 to 81 (push-in I/O terminal common terminals) | Relay contact terminals |
| 12 to 82 (push-in I/O terminal NC terminals) | |
| 14 to 84 (push-in I/O terminal NO terminals) | |

G70V-SOC16P-1

(PNP output/- common)

Note: A controller with a PNP transistor, + common output can be connected to the G70V-SOC16P-1.

Connector Pin Configuration Top View



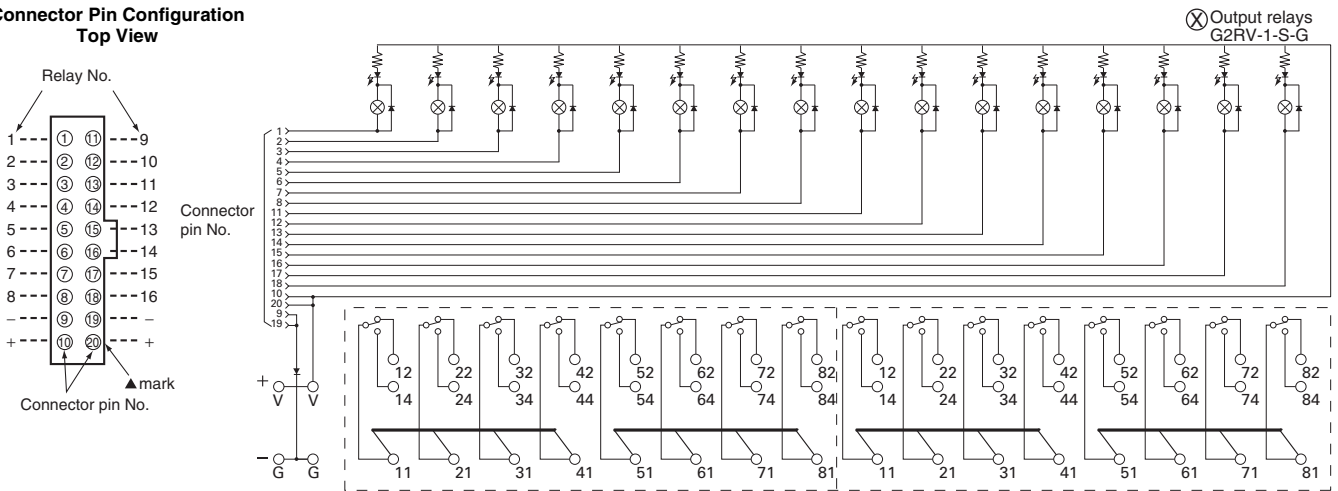
Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|--|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| 11 to 81 (push-in I/O terminal common terminals) | Relay contact terminals |
| 12 to 82 (push-in I/O terminal NC terminals) | |
| 14 to 84 (push-in I/O terminal NO terminals) | |

G70V-SOC16P-C4
(NPN output/+ common)

Note: A controller with an NPN transistor, common output can be connected to the G70V-SOC16P-C4.

Connector Pin Configuration
Top View



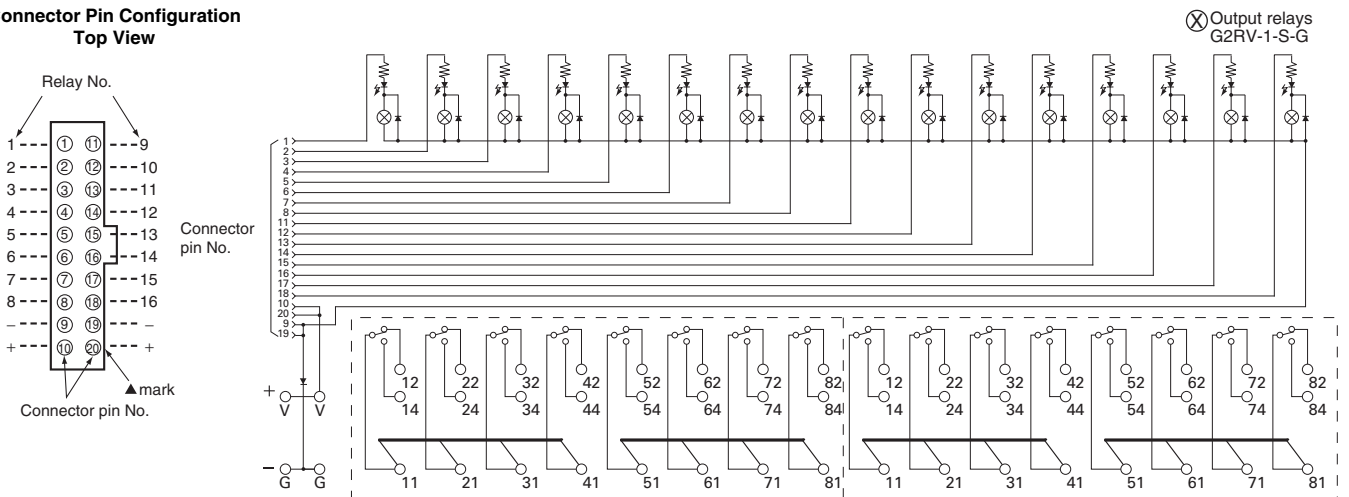
Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|--|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| 11 to 81 (push-in I/O terminal common terminals) | Relay contact terminals |
| 12 to 82 (push-in I/O terminal NC terminals) | |
| 14 to 84 (push-in I/O terminal NO terminals) | |

G70V-SOC16P-1-C4
(PNP output/- common)

Note: A controller with a PNP transistor, + common output can be connected to the G70V-SOC16P-1-C4.

Connector Pin Configuration
Top View



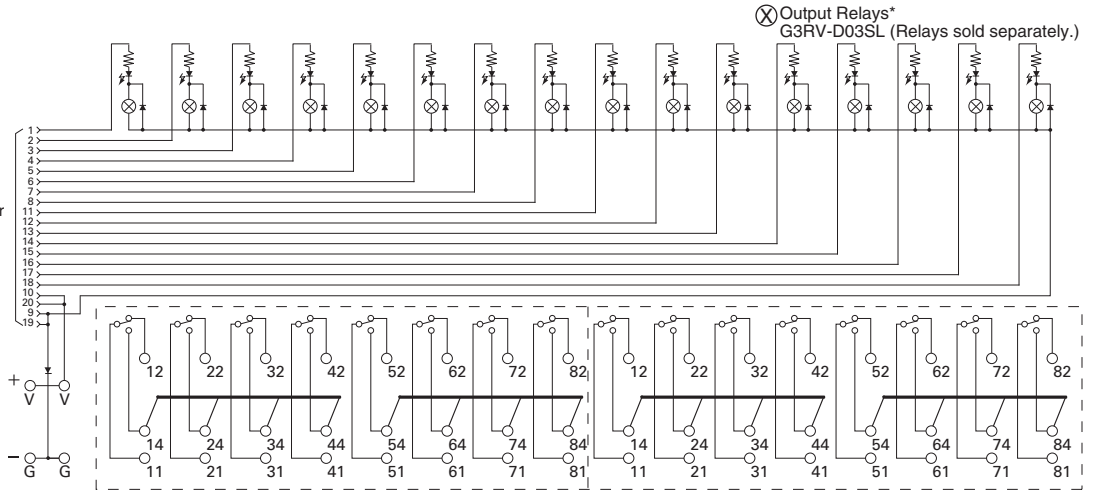
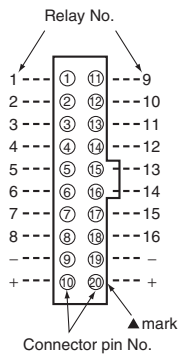
Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| Terminal name | Description |
|--|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| 11 to 81 (push-in I/O terminal common terminals) | Relay contact terminals |
| 12 to 82 (push-in I/O terminal NC terminals) | |
| 14 to 84 (push-in I/O terminal NO terminals) | |

G70V-ZOM16P-1-C4-D (PNP output/- common)

Note: A controller with an PNP transistor, common output can be connected to the G70V-ZOM16P-1-C4-D.

Connector Pin Configuration Top View



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

| Terminal name | Description |
|---|--------------------------------------|
| V (push-in power supply terminals) | Unit power supply terminals (24 VDC) |
| G (push-in power supply terminals) | |
| 11 to 81 (push-in I/O terminal SSR output terminal +) | SSR contact terminals |
| 12 to 82 (push-in I/O terminal Open terminal) | |
| 14 to 84 (push-in I/O terminal SSR output terminal -) | |

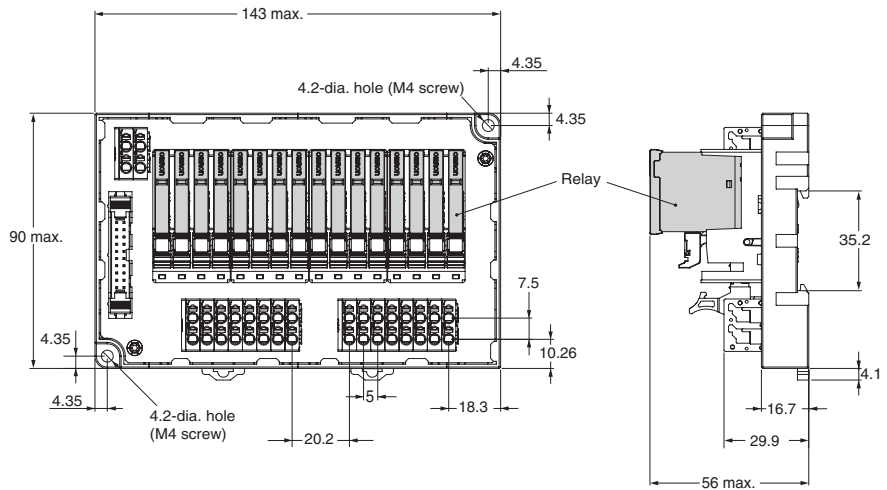
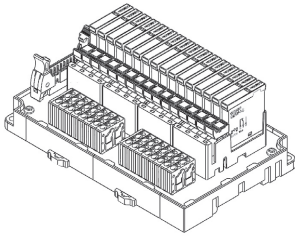
* The G70V-ZOM16P-1-C4-D does not come with SSRs. Use Slim I/O SSRs (for DC: G3RV-D03SL).

Dimensions

I/O Relay Terminals and I/O Terminal Sockets

For Inputs

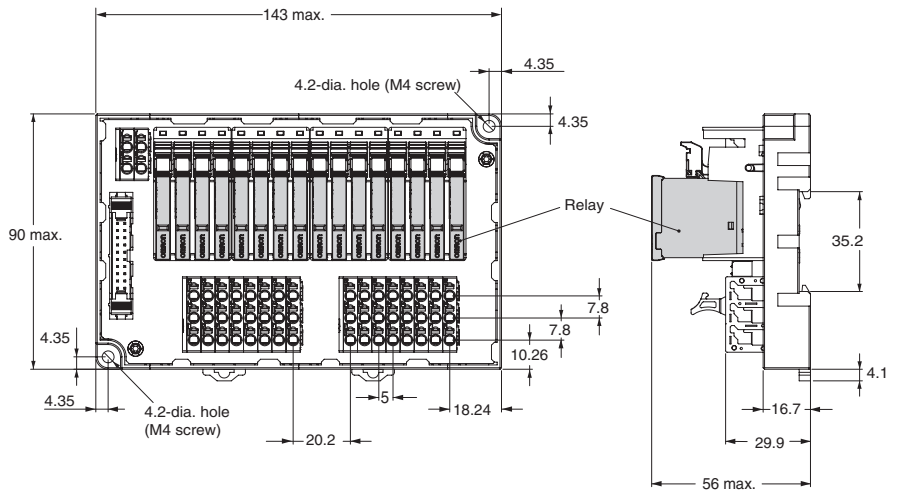
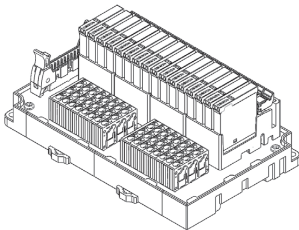
- G70V-SID16P
- G70V-SID16P-1
- G70V-ZID16P
- G70V-ZID16P-1
- G70V-SID16P-C16
- G70V-SID16P-1-C16
- G70V-ZID16P-C16
- G70V-ZID16P-1-C16



- Note:** 1. Relays are not mounted to the G70V-ZID16P(-1)(-C16) I/O Terminal Sockets. The dimensions are for when Relays are not mounted.
 2. Specified mounting torque: 0.59 to 0.98 N·m.

For Outputs

- G70V-SOC16P
- G70V-SOC16P-1
- G70V-ZOM16P
- G70V-ZOM16P-1
- G70V-SOC16P-C4
- G70V-SOC16P-1-C4
- G70V-ZOM16P-C4
- G70V-ZOM16P-1-C4
- G70V-ZOM16P-1-C4-D



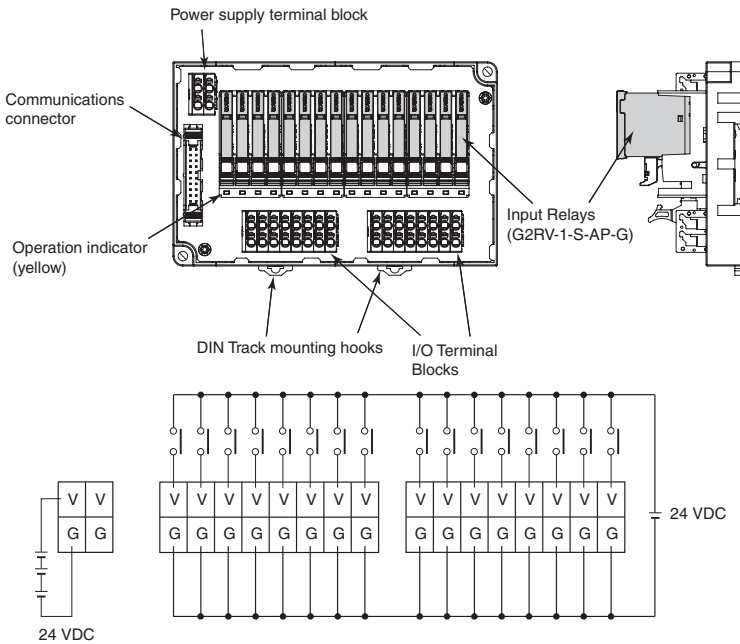
- Note:** 1. Relays are not mounted to the G70V-ZOM16P(-1)(-C4)(-D) I/O Terminal Sockets. The dimensions are for when Relays are not mounted.
 2. Specified mounting torque: 0.59 to 0.98 N·m.

G70V

Terminal Arrangement/Internal Connection

For Inputs

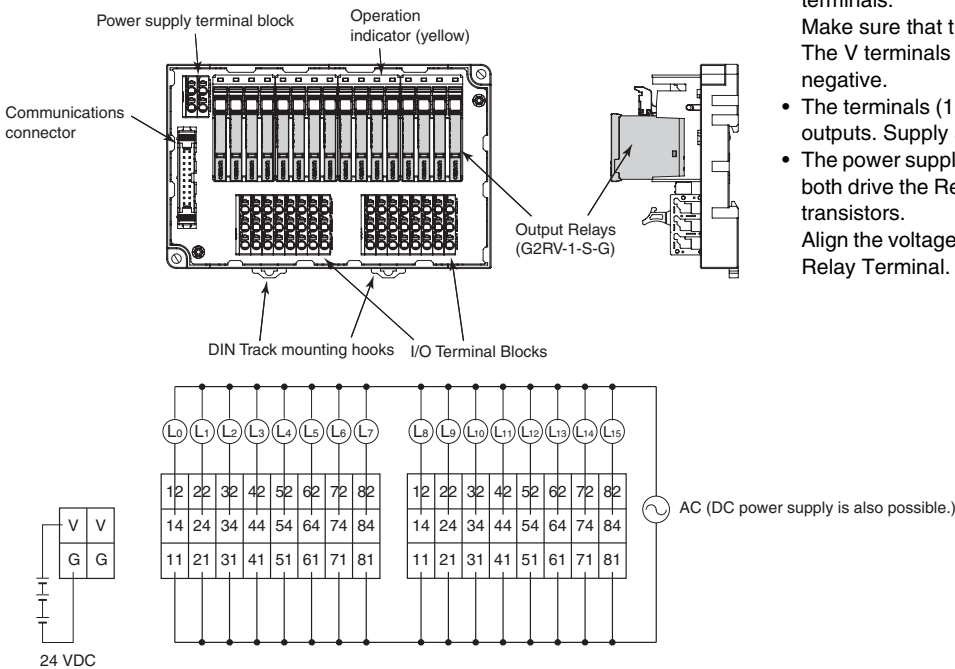
G70V-SID16P
G70V-SID16P-1



- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals. Make sure that the polarity is correct. The V terminals are positive and the G terminals are negative.
- Supply the rated voltage (24 VDC) of the Controller's input circuit to the power supply input terminals (V and G). Use a power supply with low noise.

For Outputs

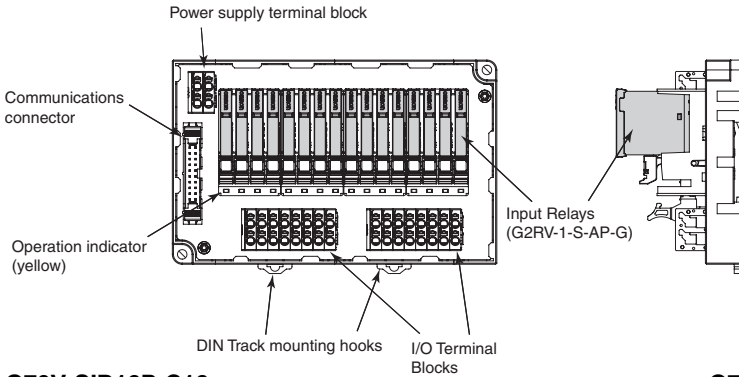
G70V-SOC16P
G70V-SOC16P-1



- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals. Make sure that the polarity is correct. The V terminals are positive and the G terminals are negative.
- The terminals (11 to 81, 12 to 82, and 14 to 84) are contact outputs. Supply a suitable power supply for the loads.
- The power supply input terminals (V and G) supply power to both drive the Relays and to operate the Controller's output transistors. Align the voltage specifications of the Controller and the I/O Relay Terminal.

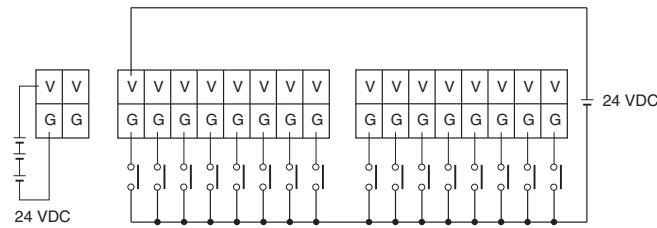
For Inputs

G70V-SID16P-C16
G70V-SID16P-1-C16

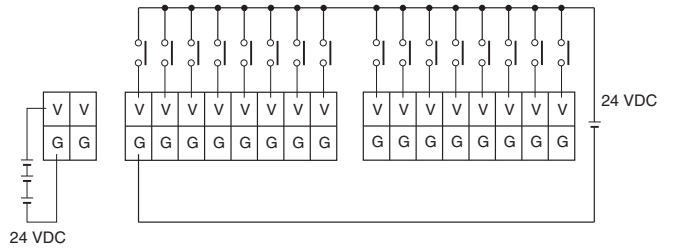


- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals. Make sure that the polarity is correct. The V terminals are positive and the G terminals are negative.
- Supply the rated voltage (24 VDC) of the Controller's input circuit to the power supply input terminals (V and G). Use a power supply with low noise.

G70V-SID16P-C16

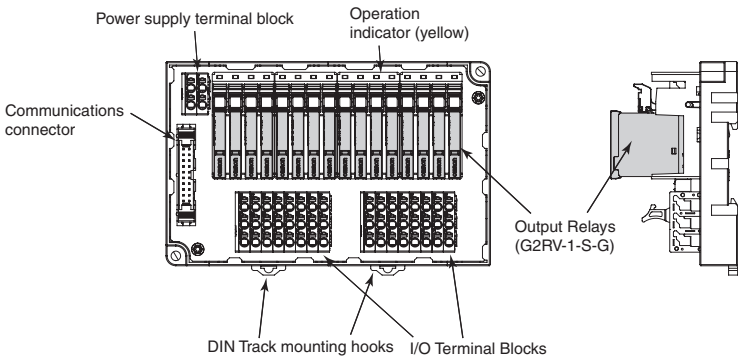


G70V-SID16P-1-C16

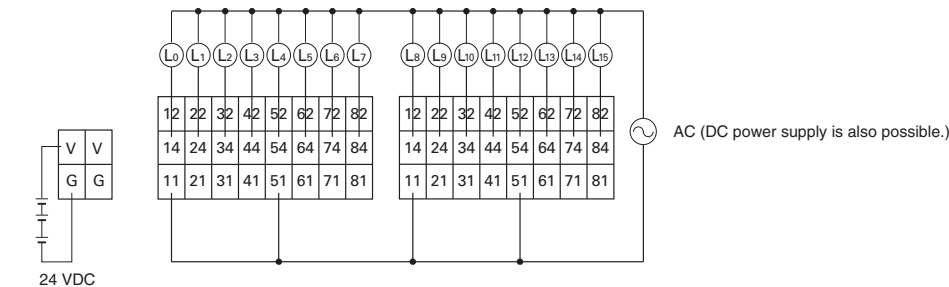


For Outputs

G70V-SOC16P-C4
G70V-SOC16P-1-C4

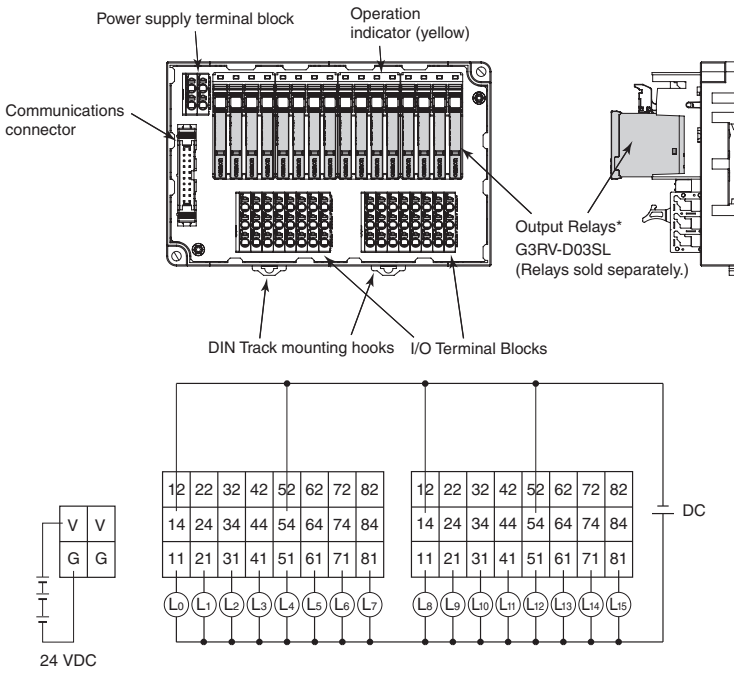


- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals. Make sure that the polarity is correct. The V terminals are positive and the G terminals are negative.
- The terminals (11 to 81, 12 to 82, and 14 to 84) are contact outputs. Supply a suitable power supply for the loads.
- The power supply input terminals (V and G) supply power to both drive the Relays and to operate the Controller's output transistors. Align the voltage specifications of the Controller and the I/O Relay Terminal.



For Outputs

G70V-ZOM16P-1-C4-D



- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals.
Make sure that the polarity is correct.
The V terminals are positive and the G terminals are negative.
- The terminals (11 to 81 and 14 to 84) are contact outputs. Supply a suitable power supply for the loads. Make sure that polarity of the output terminal is correct.
- The power supply input terminals (V and G) supply power to both drive the Relays and to operate the Controller's output transistors.
Align the voltage specifications of the Controller and the I/O Relay Terminal.

* The G70V-ZOM16P-1-C4-D does not come with SSRs. Use Slim I/O SSRs (for DC: G3RV-D03SL).

Safety Precautions

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

Warning Indications

| | |
|------------------------------------|--|
| Precautions for Safe Use | Supplementary comments on what to do or avoid doing, to use the product safely. |
| Precautions for Correct Use | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance. |

Precautions for Safe Use

Transportation

- Do not transport the I/O Relay Terminal under the following locations. Doing so may occasionally result in damage, malfunction, or deterioration of performance characteristics.
 - Locations subject to water or oil
 - Locations subject to high temperature or high humidity
 - Locations subject to condensation due to rapid changes in temperature

Operating and Storage Environments

- Do not use or store the I/O Relay Terminal in the following locations. Doing so may result in damage, malfunction, or deterioration of performance characteristics.
 - Locations subject to rainwater or water splashes
 - Locations subject to exposure to water, oil, or chemicals
 - Locations subject to high temperature or high humidity
 - Locations subject to ambient storage temperatures outside the range -40 to 65°C
 - Locations subject to ambient operating temperatures outside the range -40 to 55°C
 - Locations subject to relative humidity outside the range 35% to 85% or locations in which condensation may occur due to rapid changes in temperature
 - Locations subject to corrosive gases or inflammable gases
 - Locations subject to dust, salts, or iron, or locations where there is salt damage
 - Locations subject to direct sunlight
 - Locations subject to shock or vibration

Installation and Mounting

- Mount the I/O Relay Terminal in the specified direction. Otherwise excessive heat generated by the I/O Relay Terminal may occasionally cause burning.
- Mount the I/O Relay Terminal firmly to a DIN Track. Otherwise, the I/O Relay Terminal may fall off.
- Do not handle the I/O Relay Terminal with oily or dusty (especially iron dust) hands.
- Make sure that there is no excessive ambient temperature rise due to the heat generation of the I/O Relay Terminal. If the I/O Relay Terminal is mounted inside a panel, install a fan so that the interior of the panel is fully ventilated.

Installation and Wiring

- Use wires that are suited to the load current and voltage. Otherwise, excessive heat generated by the wires may cause burning or may cause the wire covering to melt, possibly leading to electric shock.
- Do not use wires with a damaged outer covering. Otherwise, it may result in electric shock or ground leakage.
- Do not wire any wiring in the same duct or conduit as power or high-tension lines. Otherwise, inductive noise may damage the I/O Relay Terminal or cause it to malfunction.
- Do not apply a voltage or current that exceeds the rating to any terminal. Doing so may result in failure or burning.

Push-In Plus Terminal Blocks

- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force. Doing so may cause the wire disconnection.
- Do not insert more than one wire into each terminal insertion hole.
- To prevent wire materials from smoking or igniting, confirm wire ratings and use the wiring materials given in the following table.

| Recommended wire gauge | Stripping length (Ferrules not used) |
|---|--------------------------------------|
| 0.25 to 1.5mm ² /AWG24 to 16 | 8 mm |

- Refer to the following table for wire sizes for external I/O devices according to the current flow.

| | |
|----------------|----------------------------|
| AWG24 to AWG20 | Maximum current flow: 6 A |
| AWG18 to AWG16 | Maximum current flow: 10 A |

Application

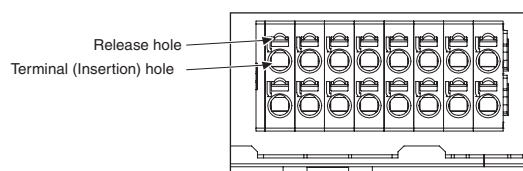
- Select a load within the rated values. Not doing so may result in malfunction, failure, or burning.
- The I/O Relay Terminal may occasionally rupture if short-circuit current flows. As protection against accidents due to short-circuiting, be sure to install protective devices, such as fuses and no-fuse breakers, on the power supply side.
- Use a power supply within the rated frequencies. Otherwise, malfunction, failure, or burning may occasionally occur.
- Minor electric shock may occasionally occur. Always turn OFF the power supply before performing wiring.

Precautions for Correct Use

- Do not drop the I/O Relay Terminal or subject it to abnormal vibration or shock during transportation or mounting. Doing so may result in deterioration of performance, malfunction, or failure.
- Do not transport an I/O Relay Terminal when it is not packaged. Damage or failure may occur.
- Use a power supply with low noise.

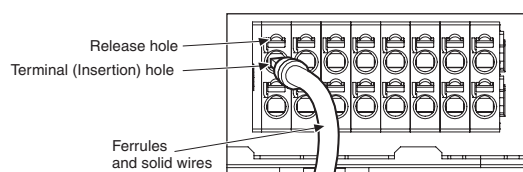
Push-In Plus Terminal Blocks

1. Connecting Wires to the Push-In Plus Terminal Block Part Names of the Terminal Block



Connecting Wires with Ferrules and Solid Wires

Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block.

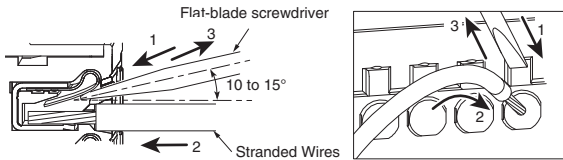


- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wire.

Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole.
The angle should be between 10° and 15°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until it strikes the terminal block.
3. Remove the flat-blade screwdriver from the release hole.



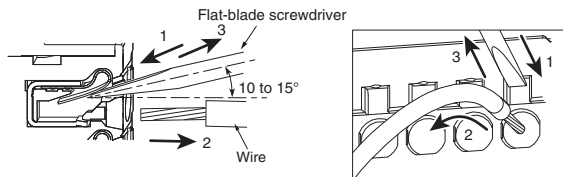
Checking Connections

- After the insertion, pull gently on the wire to make sure that it will not come off and the wire is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
3. Remove the flat-blade screwdriver from the release hole.

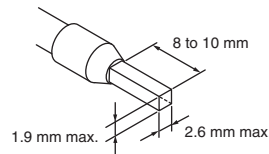


3. Recommended Ferrules and Crimp Tools

Recommended ferrules

| Applicable wire | | Ferrule Conductor length (mm) | Stripping length [mm] (Ferrules used) | Recommended ferrules | | |
|------------------------|-------|-------------------------------|---------------------------------------|--|-------------------------|--------------|
| (mm ²) | (AWG) | | | Phoenix Contact product | Weidmuller product | Wago product |
| 0.25 | 24 | 8 | 10 AI0,25-8 | H0.25/12 | FE-0.25-8N-YE | |
| | | 10 | 12 AI0,25-10 | --- | --- | |
| 0.34 | 22 | 8 | 10 AI0,34-8 | H0.34/12 | FE-0.34-8N-TQ | |
| | | 10 | 12 AI0,34-10 | --- | --- | |
| 0.5 | 20 | 8 | 10 AI0,5-8 | H0.5/14 | FE-0.5-8N-WH | |
| | | 10 | 12 AI0,5-10 | H0.5/16 | FE-0.5-10N-WH | |
| 0.75 | 18 | 8 | 10 AI0,75-8 | H0.75/14 | FE-0.75-8N-GY | |
| | | 10 | 12 AI0,75-10 | H0.75/16 | FE-0.75-10N-GY | |
| 1/1.25 | 18/17 | 8 | 10 AI1-8 | H1.0/14 | FE-1.0-8N-RD | |
| | | 10 | 12 AI1-10 | H1.0/16 | FE-1.0-10N-RD | |
| 1.25/1.5 | 17/16 | 8 | 10 AI1,5-8 | H1.5/14 | FE-1.5-8N-BK | |
| | | 10 | 12 AI1,5-10 | H1.5/16 | FE-1.5-10N-BK | |
| Recommended crimp tool | | | | CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S | PZ6 roto Variocrimp4 | |

- Note:**
1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.
 2. Make sure that the ferrule processing dimensions conform to the following figures.

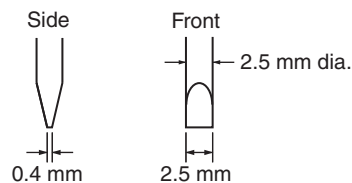


Recommended Flat-blade Screwdriver

Use a flat-blade screwdriver to connect and remove wires.

Use the following flat-blade screwdriver.

The following table shows manufacturers and models as of 2015/Dec.



| Model | Manufacturer |
|--------------------------------|-----------------|
| ESD0.40x2.5 | Wera |
| SZS 0.4x2.5 SZF 0-0.4x2.5 * | Phoenix Contact |
| 0.4x2.5x75 302 | Wiha |
| AEF.2.5x75 | Facom |
| 210-719 | Wago |
| SDI 0.4x2.5x75 | Weidmuller |

* OMRON's exclusive purchase model XW4Z-00B is available to order as SZF 0-0.4 x 2.5 (manufactured by Phoenix Contact).

Connecting Cables

Refer to the datasheet for the **XW2Z-R** Cables for I/O Relay Terminals

| Type | Name | I/O Classification | Appearance | Cable length L (mm) | | | Models | | | |
|------------------------------|--|------------------------------|------------|---------------------|--|-----------------|-----------------|-----------|-----------|--------------------|
| Various devices | Cables with Loose Wires and Crimp Terminals 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 XW2Z-RA□C | 16 I/O points | | 2,000 | | | XW2Z-RA200C | | | |
| 5,000 | | | | XW2Z-RA500C | | | | | | |
| Fujitsu connectors (24 pins) | Cables with Connectors (1:1) 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 connectors (40 pins) | Cables with Connectors (1:2) XW2Z-RI□C-□ XW2Z-RO□C-□ | 32 input points | | (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 connectors (56 pins) | | | Cables with Connectors (1:3) XW2Z-R□C-□-□ | 48 I/O points | | (A) 1,500 | (B) 1,250 | (C) 1,000 |
| | | | | (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) XW2Z-RI□C 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 |
|---|---|--------------------|---|---------------------|-----------|--------------------|
| | | | | (A) | (B) | |
| MIL connectors (40 pins) | Cables with Connectors (1:2) XW2Z-RO□-□-D1, XW2Z-RI□-□-D1, XW2Z-RI□-□-D2, XW2Z-RM□-□-D1*, XW2Z-RM□-□-D2* | 32 I/O points | <p>A side Device end</p> <p>B side I/O Relay Terminal</p> <p>(A)</p> <p>(B)</p> <p>120</p> <p>Straight length (without bends)</p> | (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 | | |
| | | (A) 500 | (B) 250 | XW2Z-RM50-25-D1 | | |
| | | (A) 750 | (B) 500 | XW2Z-RM75-50-D1 | | |
| | | (A) 1,000 | (B) 750 | XW2Z-RM100-75-D1 | | |
| | | (A) 1,500 | (B) 1,250 | XW2Z-RM150-125-D1 | | |
| (A) 2,000 | (B) 1,750 | XW2Z-RM200-175-D1 | | | | |
| (A) 3,000 | (B) 2,750 | XW2Z-RM300-275-D1 | | | | |
| (A) 5,000 | (B) 4,750 | XW2Z-RM500-475-D1 | | | | |
| (A) 500 | (B) 250 | XW2Z-RM50-25-D2 | | | | |
| (A) 750 | (B) 500 | XW2Z-RM75-50-D2 | | | | |
| Mitsubishi Electric PLCs with 32-point connectors (1:2) | Mitsubishi Electric PLC Connecting Cables XW2Z-RI□-□-MN XW2Z-RO□-□-MN | 32 input points | <p>A side Device end</p> <p>B side I/O Relay Terminal</p> <p>(A)</p> <p>(B)</p> <p>120</p> <p>Straight length (without bends)</p> | (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 |
| | | | | (A) 1,000 | (B) 750 | XW2Z-RO100C-75-MN |
| | | 32 output points | | (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 |
| | | | | (A) 500 | (B) 250 | XW2Z-RM50-25-D2 |
| | | | | (A) 750 | (B) 500 | XW2Z-RM75-50-D2 |
| Schneider Electric PLCs with 32-point connectors (1:2) | Schneider Electric PLC Connecting Cables | 32 input points | <p>A side Device end</p> <p>B side I/O Relay Terminal</p> <p>(A)</p> <p>(B)</p> <p>120</p> <p>Straight length (without bends)</p> | 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) | XW2Z-R□C-SCH-□ | 16 input points | <p>L</p> | 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 |

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

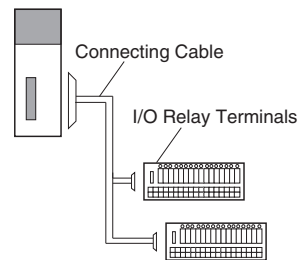
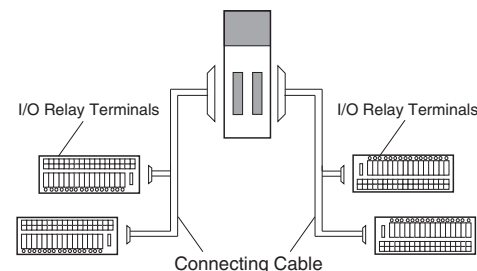
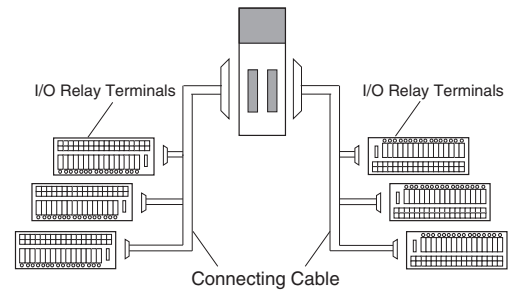
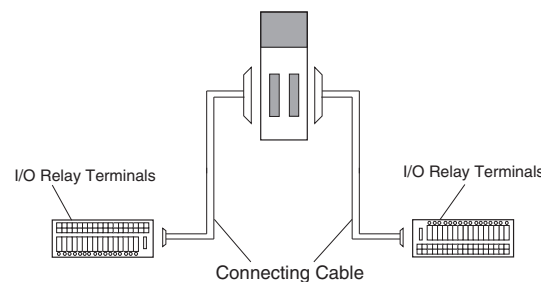
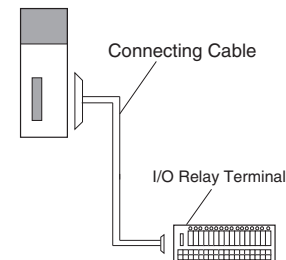
| Type | Name | I/O Classification | Appearance | Cable length L (mm) | Models |
|--|---|--------------------|------------|---------------------|------------------|
| Siemens PLCs with 32-point connectors (1:2) Applicable models: For inputs: 6ES7 321-1BL00-0AA0 For outputs: 6ES7 322-1BL00-0AA0 | | 32 input points | | 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) Applicable models: For inputs: 6ES7 321-1BH02-0AA0 | Siemens PLC Connecting Cables XW2Z-R□C-SIM-□ | 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) Applicable models: For inputs: 6ES7 421-1BL-0AA0 For outputs: 6ES7 422-1BL-0AA0 | | 32 input points | | 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*.

Combinations of Connections

Refer to Combinations of Connections (PLC I/O Units, NX Series, CJ Series, and CS Series) starting on the next page.
 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 |  |

Combinations with NX Series

| NX I/O Units | | | | Conne ction pattern | XW2Z-R Cables | | | G70V I/O Relay Terminals | | |
|--------------------------|---|---|------------------------------------|---------------------------|------------------------------|--------------|--------------------|--------------------------|-----------------------|-------------------|
| I/O capacity | Model | External connectors | Polarity | | Specifications | Model *1 | Quantity required | Specifications | Model | Quantity required |
| Input Units | | | | | | | | | | |
| 16 inputs | NX-ID5142-5 | 1 MIL connector | NPN or PNP | F | 1:1 for 16 inputs | XW2Z-RO□C | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| 32 inputs | NX-ID6142-5 | 1 MIL connector | NPN or PNP | A | 1:2 for 32 inputs | XW2Z-RO□□-D1 | 1 | | G70V-SID16P(-1)(-C16) | 2 |
| | NX-ID6142-6 | 1 Fujitsu connector | NPN or PNP | | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | | G70V-SID16P(-1)(-C16) | 2 |
| Output Units | | | | | | | | | | |
| 16 outputs | NX-OD5121-5 | 1 MIL connector | NPN | F | 1:1 for 16 outputs | XW2Z-RO□C | 1 | NPN outputs | G70V-SOC16P(-C4) | 1 |
| | NX-OD5256-5 | 1 MIL connector | PNP | | 1:1 for 16 outputs | XW2Z-RO□C | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 1 |
| 32 outputs | NX-OD6121-5 | 1 MIL connector | NPN | A | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| | NX-OD6256-5 | 1 MIL connector | PNP | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 2 |
| 32 outputs | NX-OD6121-6 | 1 Fujitsu connector | NPN | | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| Mixed I/O Units | | | | | | | | | | |
| 16 inputs and 16 outputs | NX-MD6121-6 | 2 Fujitsu connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: NPN Inputs: NPN or PNP | E | 1:1 for 16 inputs or outputs | XW2Z-R□C | 2 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| | | | | | | | | NPN outputs | G70V-SOC16P(-C4) | 1 |
| | NX-MD6121-5 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: NPN Inputs: NPN or PNP | | 1:1 for 16 inputs | XW2Z-RO□C | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| | | | | | 1:1 for 16 outputs | XW2Z-RO□C | 1 | NPN outputs | G70V-SOC16P(-C4) | 1 |
| | | | | | 1:1 for 16 inputs | XW2Z-RO□C | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| NX-MD6256-5 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Outputs: PNP Inputs: NPN or PNP | 1:1 for 16 outputs | XW2Z-RI□C | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 1 | | |

*1. The box □ is replaced by the cable length.

*2. Either NPN inputs or PNP inputs can be used.

Combinations with CJ Series

| CJ1W I/O Units | | | | Conne tion pattern | XW2Z-R Cables | | | G70V I/O Relay Terminals | | |
|---|------------|---|----------------|--------------------------|------------------------------|--------------|--------------------|--------------------------|-----------------------|-------------------|
| I/O capacity | Model | External connectors | Polarity | | Specifications | Model *1 | Quantity required | Specifications | Model | Quantity required |
| DC Input Units | | | | | | | | | | |
| 32 inputs | CJ1W-ID231 | 1 Fujitsu connector | NPN | A | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 2 |
| | CJ1W-ID232 | 1 MIL connector | NPN | | 1:2 for 32 inputs | XW2Z-RO□□-D1 | 1 | | | |
| | CJ1W-ID233 | 1 MIL connector | NPN | | 1:2 for 32 inputs | XW2Z-RO□□-D1 | 1 | | | |
| 64 inputs | CJ1W-ID261 | 2 Fujitsu connectors (2, 32-point connectors) | NPN | B | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | | G70V-SID16P(-1)(-C16) | 4 |
| | CJ1W-ID262 | 2 MIL connectors (2, 32-point connectors) | NPN | | 1:2 for 32 inputs | XW2Z-RO□□-D1 | 1 | | | |
| Transistor Output Units | | | | | | | | | | |
| 32 outputs | CJ1W-OD231 | 1 Fujitsu connector | Sinking (NPN) | A | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| | CJ1W-OD233 | 1 MIL connector | Sinking (NPN) | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | | | |
| | CJ1W-OD232 | 1 MIL connector | Sourcing (PNP) | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 2 |
| | CJ1W-OD234 | 1 MIL connector | Sinking (NPN) | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| 64 outputs | CJ1W-OD261 | 2 Fujitsu connectors (2, 32-point connectors) | Sinking (NPN) | B | 1:2 for 32 outputs | XW2Z-RO□C-□ | 2 | NPN outputs | G70V-SOC16P(-C4) | 4 |
| | CJ1W-OD262 | 2 MIL connectors (2, 32-point connectors) | Sourcing (PNP) | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 2 | PNP outputs | G70V-SOC16P-1(-C4) | 4 |
| | CJ1W-OD263 | 2 MIL connectors (2, 32-point connectors) | Sinking (NPN) | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 2 | NPN outputs | G70V-SOC16P(-C4) | 4 |
| DC Input/Transistor Output Units | | | | | | | | | | |
| 16 inputs and 16 outputs | CJ1W-MD231 | 2 Fujitsu connectors (1 for 16 inputs and 1 for 16 outputs) | Sinking (NPN) | E | 1:1 for 16 inputs or outputs | XW2Z-R□C | 2 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| | | | | | | | | NPN outputs | G70V-SOC16P(-C4) | 1 |
| | CJ1W-MD233 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Sinking (NPN) | | 1:1 for 16 inputs | XW2Z-RO□C | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| | | | | | 1:1 for 16 outputs | XW2Z-RO□C | 1 | NPN outputs | G70V-SOC16P(-C4) | 1 |
| | CJ1W-MD232 | 2 MIL connectors (1 for 16 inputs and 1 for 16 outputs) | Sourcing (PNP) | | 1:1 for 16 inputs | XW2Z-RO□C | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 1 |
| 1:1 for 16 outputs | | | | XW2Z-RI□C | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 1 | | |
| 32 inputs and 32 outputs | CJ1W-MD261 | 2 Fujitsu connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | B | 1:2 for 16 inputs | XW2Z-RI□C-□ | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 2 |
| | | | | | 1:2 for 16 outputs | XW2Z-RO□C-□ | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| | CJ1W-MD263 | 2 MIL connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | | 1:2 for 32 inputs | XW2Z-RO□□-D1 | 1 | Inputs *2 | G70V-SID16P(-1)(-C16) | 2 |
| | | | | | 1:2 for 32 outputs | XW2Z-RO□□-D1 | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |

*1. The box □ is replaced by the cable length.

*2. Either NPN inputs or PNP inputs can be used.

Combinations with CS Series

| CJ1W I/O Units | | | | Conne ction pattern | XW2Z-R Cables | | | G70V I/O Relay Terminals | | |
|---|---|---|------------------------------|---------------------------|------------------------------|--------------|-------------------|--------------------------|-----------------------|-------------------|
| 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 connector | NPN | A | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | Inputs #2 | G70V-SID16P(-1)(-C16) | 2 |
| 64 inputs | CS1W-ID261 | 2 Fujitsu connectors (2, 32-point connectors) | NPN | B | 1:2 for 32 inputs | XW2Z-RI□C-□ | 2 | | G70V-SID16P(-1)(-C16) | 4 |
| 96 inputs | CS1W-ID291 | 2 Fujitsu connectors (2, 48-point connectors) | NPN | D | 1:3 for 48 inputs or outputs | XW2Z-R□C-□-□ | 2 | | G70V-SID16P(-1)(-C16) | 6 |
| Transistor Output Units | | | | | | | | | | |
| 32 outputs | CS1W-OD231 | 1 Fujitsu connector | Sinking (NPN) | A | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| | CS1W-OD232 | 1 Fujitsu connector | Sourcing (PNP) | | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 2 |
| 64 outputs | CS1W-OD261 | 2 Fujitsu connectors (2, 32-point connectors) | Sinking (NPN) | B | 1:2 for 32 outputs | XW2Z-RO□C-□ | 2 | NPN outputs | G70V-SOC16P(-C4) | 4 |
| | CS1W-OD262 | 2 Fujitsu connectors (2, 32-point connectors) | Sourcing (PNP) | | 1:2 for 32 outputs | XW2Z-RO□C-□ | 2 | PNP outputs | G70V-SOC16P-1(-C4) | 4 |
| 96 outputs | CS1W-OD291 | 2 Fujitsu connectors (2, 48-point connectors) | Sinking (NPN) | D | 1:3 for 48 inputs or outputs | XW2Z-R□C-□-□ | 2 | NPN outputs | G70V-SOC16P(-C4) | 6 |
| DC Input/Transistor Output Units | | | | | | | | | | |
| 32 inputs and 32 outputs | CS1W-MD261 | 2 Fujitsu connectors (1 for 32 inputs and 1 for 32 outputs) | Sinking (NPN) | B | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | Inputs #2 | G70V-SID16P(-1)(-C16) | 2 |
| | | | | | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | NPN outputs | G70V-SOC16P(-C4) | 2 |
| | CS1W-MD262 | 2 Fujitsu connectors (1 for 32 inputs and 1 for 32 outputs) | Sourcing (PNP) | | 1:2 for 32 inputs | XW2Z-RI□C-□ | 1 | Inputs #2 | G70V-SID16P(-1)(-C16) | 2 |
| | | | | | 1:2 for 32 outputs | XW2Z-RO□C-□ | 1 | PNP outputs | G70V-SOC16P-1(-C4) | 2 |
| 48 inputs and 48 outputs | CS1W-MD291 | 2 Fujitsu connectors (1 for 48 inputs and 1 for 48 outputs) | Sinking (NPN) | D | 1:3 for 48 inputs or outputs | XW2Z-R□C-□-□ | 2 | Inputs #2 | G70V-SID16P(-1)(-C16) | 3 |
| | | | | | | | | NPN outputs | G70V-SOC16P(-C4) | 3 |
| CS1W-MD292 | 2 Fujitsu connectors (1 for 48 inputs and 1 for 48 outputs) | Sourcing (PNP) | 1:3 for 48 inputs or outputs | | XW2Z-R□C-□-□ | 1 | Inputs #2 | G70V-SID16P(-1)(-C16) | 3 | |
| | | | --- | | | | | | | |

*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 |

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