

# I/O Relay Terminal G70V



## I/O Relay Terminals with 16 Points and Push-In Plus terminal blocks to Downsize Control Panels and Save Labor

- I/O Relay Terminals with 16 points to mount G2RV Slim I/O Relays.
- Push-In Plus terminal blocks are used to save wiring work in comparison with traditional screw terminals. (Wiring time is reduced by 60% \*1 in comparison with traditional screw terminals.)
- Work is reduced ever 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.
- Accepts G3RV Slim I/O SSRs. \*2
- Greatly reduce wiring work and maximize space efficiency with new models that provide internal connections between I/O terminals. (input models: 16 point/common, output models: 4 points/common)
- DIN Track or screw mounting.



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

\*1. According to OMRON actual measurement data from November 2015.

\*2. Mounting of some models is not possible.

Refer to Safety Precautions on page 22.

## 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

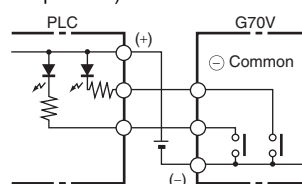
### (6) Common Line on Connector Side

Blank: NPN  
1: PNP

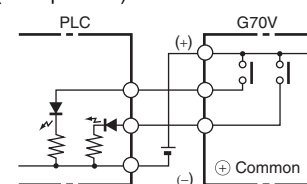
### (7) Common Line on Terminal Block Side

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

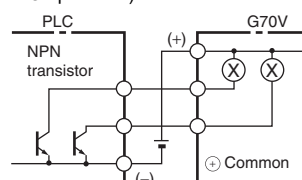
(For Input NPN)



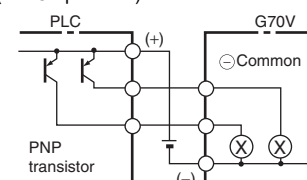
(For Input PNP)



(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 | NPN (+ common) | G70V-ZOM16P-C4-D   |
| *                             |                |                                                                  | PNP (– common) | G70V-ZOM16P-1-C4-D |

**Note:** 1. Relays are not mounted to the G70V-ZID16P(-1)(-C16) I/O Terminal Sockets. Combine the I/O Terminal Sockets with Slim I/O Relays.

2. Relays are not mounted to the G70V-ZOM16P(-1)(-C4) 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).

## Options (Order Separately)

### Mountable Relays

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

**Note:** When using Slim I/O SSRs, either remove the Slim I/O Relays from the output G70V-SOC16P(-1)(-C16) to mount them, or order the output G70V-ZOM16P(-1)(-C16) I/O Terminal Sockets and the Slim 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

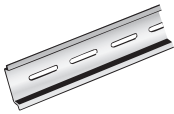
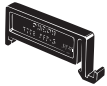
|                                            |        |              |                |
|--------------------------------------------|--------|--------------|----------------|
| Cable with Loose Wire and Crimp Terminals: |        | XW2Z-RY□C    |                |
| Cable with Loose Wires:           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

Refer to *Connecting Cables* on page 24 for details.

### Labels

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

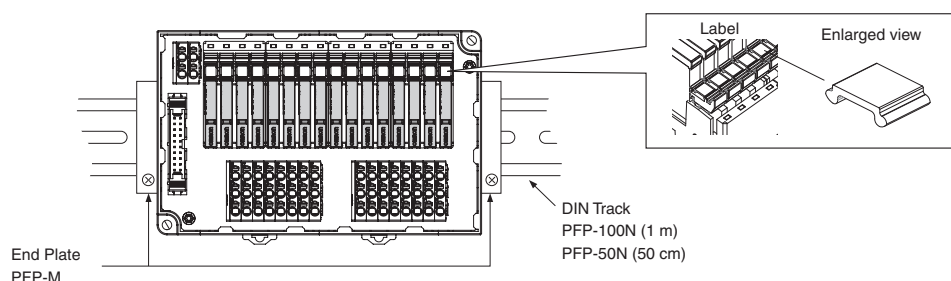
## Accessories for DIN Track Mounting

| Appearance                                                                        | Name       |       | Model    | Minimum order (quantity) |
|-----------------------------------------------------------------------------------|------------|-------|----------|--------------------------|
|  | DIN Tracks | 1 m   | PFP-100N | 1                        |
|                                                                                   |            | 0.5 m | PFP-50N  |                          |
|  | End Plate  |       | PFP-M *  | 10                       |
|  | Spacer     |       | PFP-S *  |                          |

\* These products must be ordered in sets of 10.

## Option Mounting Example

### Mounting to DIN Track



## Specifications

### Main Unit (Relay)

#### Ratings

##### Coil Ratings (Common to Input/Output per Relay)

| Item              | Rated current (mA) | Coil resistance ( $\Omega$ ) | Must operate of rated voltage | Must release of rated voltage | Maximum voltage of rated voltage | Power consumption (mW) |
|-------------------|--------------------|------------------------------|-------------------------------|-------------------------------|----------------------------------|------------------------|
| Rated voltage (V) | 13.3               | 1,575                        | 80% max.                      | 10% min.                      | 110%                             | Approx. 280            |
| 24 VDC            |                    |                              |                               |                               |                                  |                        |

- 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 (Per Relay)

| Classification                 | For input (G2RV-1-S-AP-G)          | For output (G2RV-1-S-G/G2RV-1-SI-G)                                        |                                           |
|--------------------------------|------------------------------------|----------------------------------------------------------------------------|-------------------------------------------|
|                                | Resistive load ( $\cos\phi=1$ )    | Resistive load ( $\cos\phi=1$ )                                            | Inductive load ( $\cos\phi=0.4$ L/R=7 ms) |
| Item                           |                                    |                                                                            |                                           |
| Rated load                     | 50 mA at 30 VAC<br>50 mA at 36 VDC | 6 A at 250 VAC<br>6 A at 30 VDC                                            | 2.5 A at 250 VAC<br>2 A at 30 VDC         |
| Rated carry current            | 50 mA                              | 6 A/point, 10 A/common (with -C4 installed)                                |                                           |
| Max. switching voltage         | 30 VAC, 36 VDC                     | 250 VAC, 125 VDC                                                           |                                           |
| Max. switching current         | 50 mA                              | 6 A/point, 10 A/common (with -C4 installed)                                |                                           |
| Maximum switching capacity     | ---                                | 1,500 VA<br>180 W                                                          | 500 VA<br>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.<br>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

| Model                         |                  | G70V-SID16P(-1)(-C16)<br>(Input, DC coil)                                | G70V-SOC16P(-1)(-C4)<br>(output, DC coil) |
|-------------------------------|------------------|--------------------------------------------------------------------------|-------------------------------------------|
| Item                          |                  |                                                                          |                                           |
| Contact form                  |                  | SPST-NO × 16                                                             | SPDT × 16                                 |
| Contact material              |                  | Ag alloy + Au plating                                                    | Ag alloy                                  |
| Contact resistance *1         |                  | 150 mΩ 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 MΩ min.                                                              |                                           |
| Dielectric strength           |                  | Between coil and contacts: 2,500 VAC for 1 min                           |                                           |
| Vibration resistance          |                  | 10 to 55 to 10 Hz with 0.5-mm single amplitude (1.0-mm double amplitude) |                                           |
| Shock resistance              |                  | 100 m/s <sup>2</sup> , 3 times each in 6 directions along 3 axes         |                                           |
| Noise immunity                |                  | Noise level: 1.5 kV; pulse width: 100 ns to 1 μs                         |                                           |
| 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.

## Options (SSR/Order Separately)

### Ratings

#### Input (Per Separately Sold Output SSR)

| Model        | Rated voltage | Input impedance | Operating voltage | Return voltage | Input voltage<br>(% of rated voltage) |
|--------------|---------------|-----------------|-------------------|----------------|---------------------------------------|
| G3RV-202S(L) | 24 VDC        | 1.75 kΩ ±20%    | 21.6 V max.       | 1 V max.       | ±10%                                  |
| G3RV-D03SL   |               | 4.5 kΩ ±20%     | 19.2 V max.       |                |                                       |

#### Output (Per Separately Sold Output SSR)

| Item                        | Type | G3RV-202S(L)                    | G3RV-D03SL                                                              |
|-----------------------------|------|---------------------------------|-------------------------------------------------------------------------|
| Rated load voltage          |      | 100 to 240 VAC, 50/60 Hz        | 5 to 24 VDC                                                             |
| Load voltage range          |      | 75 to 264 VAC, 50/60 Hz         | 3 to 26.4 VDC                                                           |
| Load current                |      | 0.1 to 1 A (25°C), 0.2 A (55°C) | 100 μA to 3 A (40°C), 0.5 A (55°C),<br>10 A/common (with -C4 installed) |
| Surge-on current capability |      | 30 A (per cycle, 60 Hz)         | 30 A (10 ms)                                                            |

## Characteristics

| Item                          | Type | G3RV-202S                           | G3RV-202SL                          | G3RV-D03SL |
|-------------------------------|------|-------------------------------------|-------------------------------------|------------|
| Operating time                |      | 1/2 cycle of load power + 1 ms max. | 1 ms max.                           | 6 ms max.  |
| Return time                   |      | 1/2 cycle of load power + 1 ms max. | 1/2 cycle of load power + 1 ms max. | 15 ms max. |
| Voltage drop at output ON     |      | 1.6 V                               |                                     | ---        |
| Resistance at output ON       |      | ---                                 |                                     | 0.3 Ω max. |
| Leakage current               |      | 5 mA max. (200 VAC)                 |                                     | 10 μA max. |
| Insulation resistance         |      | 100 MΩ                              |                                     |            |
| Withstand voltage             |      | 2,500 VAC                           |                                     |            |
| Vibration resistance          |      | Double amplitude: 0.375 mm          |                                     |            |
| Shock resistance              |      | 1,000 m/s <sup>2</sup>              |                                     |            |
| Ambient operating temperature |      | −30 to 55°C                         |                                     |            |
| Ambient operating humidity    |      | 45 to 85% RH                        |                                     |            |

## Approved Standards

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

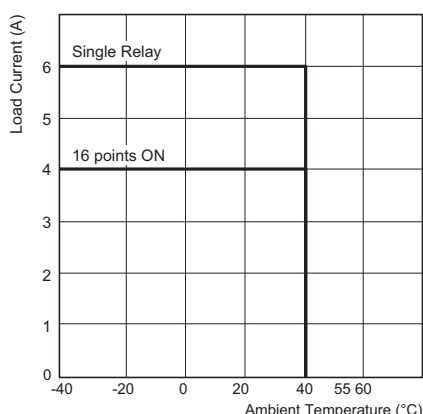
### UL standard certification (File No. E95399)

| Type                 | Model                | Ratings | Standard number                              | Category       | Listed/Recognized | Contact ratings                          |
|----------------------|----------------------|---------|----------------------------------------------|----------------|-------------------|------------------------------------------|
| I/O Relay Terminal   | G70V-SID16P(-1)      | 24V DC  | UL: 61010-2-201<br>CSA: C22.2 No.61010-2-201 | NRAQ,<br>NRAQ7 | Listed            | 24V DC                                   |
|                      | G70V-SID16P(-1)-C16  |         |                                              |                |                   | 250V AC / 30V DC<br>Resistive 4A at 40°C |
|                      | G70V-SOC16P(-1)      |         |                                              |                |                   |                                          |
|                      | G70V-SOC16P(-1)-C4   |         |                                              |                |                   |                                          |
| I/O Terminal Sockets | G70V-ZID16P(-1)      |         |                                              |                | Recognized        | 24V DC                                   |
|                      | G70V-ZID16P(-1)-C16  |         |                                              |                |                   | 250V AC / 30V DC<br>Resistive 4A at 40°C |
|                      | G70V-ZOM16P(-1)      |         |                                              |                |                   |                                          |
|                      | G70V-ZOM16P(-1)-C4   |         |                                              |                |                   |                                          |
|                      | G70V-ZOM16P(-1)-C4-D |         |                                              |                |                   |                                          |

**Note:** 1. USL refers to certification in the US, and CNL refers to certification in Canada.

2. cULus certification has been obtained in Canada. (CAN/CSA-C22.2 No. 61010-2-201)

### G70V-SOC16P(-1)(-C4), G70V-ZOM16P(-1)(-C4)(-D): UL certification specifications



**Note:** With C4 installed: 10 A/common

### TÜV Rheinland certification (Certification No. R50327604)

| Type                 | Model                | Ratings | Standard number | Operating coil | Contact ratings                                                                                                                                                                              |
|----------------------|----------------------|---------|-----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I/O Relay Terminal   | G70V-SID16P(-1)      | 24V DC  | EN 61810-1      | 24V DC         | 24V DC 0.05A L/R=0ms                                                                                                                                                                         |
|                      | G70V-SID16P(-1)-C16  |         |                 |                | single load: 250V AC 6A cos(phi)=1<br>16 loads: 250V AC 3A cos(phi)=1<br>16 loads: 30V DC 3A L/R=0ms<br>16 loads: 250V AC 5A cos(phi)=1 (Ta=+25°C)<br>16 loads: 30V DC 5A L/R=0ms (Ta=+25°C) |
|                      | G70V-SOC16P(-1)      |         |                 |                | 250V AC / 30V DC<br>16 loads: 5A (Ta=+25°C)<br>16 loads: 3A (Ta=+55°C)<br>1 load: 6A<br>Resistive load<br>total max. 10A common line                                                         |
|                      | G70V-SOC16P(-1)-C4   |         |                 |                |                                                                                                                                                                                              |
| I/O Terminal Sockets | G70V-ZID16P(-1)      | 24V DC  | EN 61810-1      | 24V DC         | 24V DC 0.05A L/R=0ms                                                                                                                                                                         |
|                      | G70V-ZID16P(-1)-C16  |         |                 |                | single load: 250V AC 6A cos(phi)=1<br>16 loads: 250V AC 3A cos(phi)=1<br>16 loads: 30V DC 3A L/R=0ms<br>16 loads: 250V AC 5A cos(phi)=1 (Ta=+25°C)<br>16 loads: 30V DC 5A L/R=0ms (Ta=+25°C) |
|                      | G70V-ZOM16P(-1)      |         |                 |                | 250V AC / 30V DC<br>16 loads: 5A (Ta=+25°C)<br>16 loads: 3A (Ta=+55°C)<br>1 load: 6A<br>Resistive load<br>total max. 10A common line                                                         |
|                      | G70V-ZOM16P(-1)-C4   |         |                 |                |                                                                                                                                                                                              |
|                      | G70V-ZOM16P(-1)-C4-D |         |                 |                |                                                                                                                                                                                              |

### CE Marking Compliance

| Model | EMC Directive  | Low Voltage Directive | Machinery Directive |
|-------|----------------|-----------------------|---------------------|
| G70V  | Not applicable | ○                     | Not applicable      |

**Note:** 1. The Safety Category refers to the maximum applicable category selected when constructing control system safety components. The category does not apply to individual components.

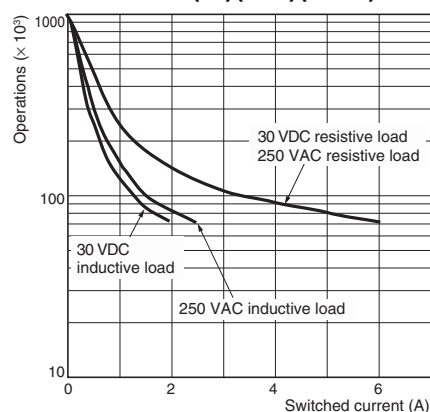
2. Details and other information on conformity levels are issued as part of the "EU Declaration of Conformity." Please contact your OMRON representative for more information.

# G70V

## Engineering Data (Reference Value)

### Endurance Curve (NO Contacts)

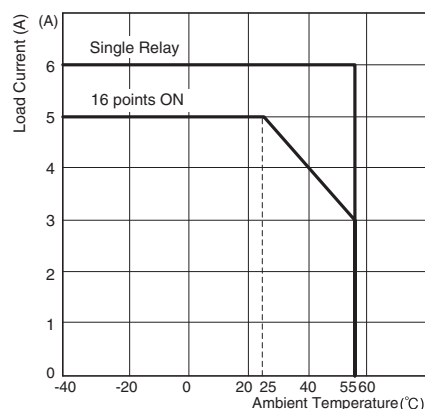
#### G70V-SOC16P(-1)(-C4)(-C16)



**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.

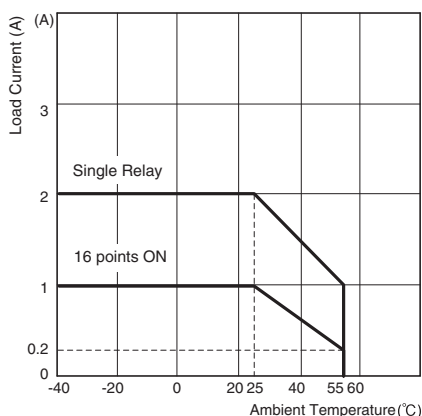
### Load Current vs. Ambient Temperature

#### G70V-SOC16P(-1)(-C4)(-C16)

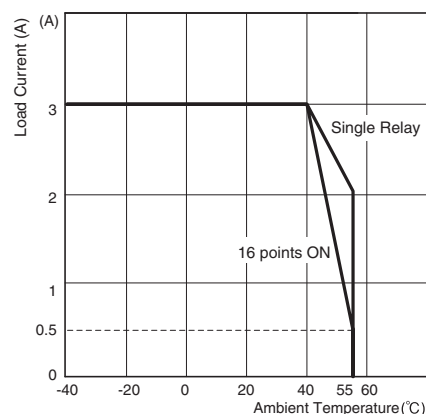


#### G3RV-202S DC24 (when installed)

#### G3RV-202SL DC24 (when installed)



#### G3RV-D03SL DC24 (when installed)

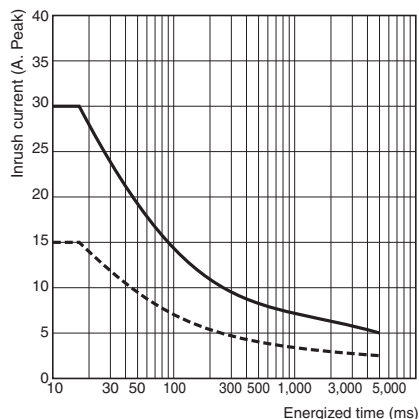


### Inrush Current Resistance: Non-repetitive

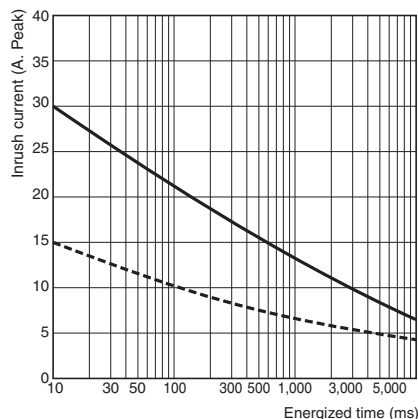
The following graphs show the maximum inrush currents that can be withstood for non-repetitive operation. For repetitive operation, the figures should be reduced by half.

#### G3RV-202S DC24

#### G3RV-202SL DC24



#### G3RV-D03 DC24

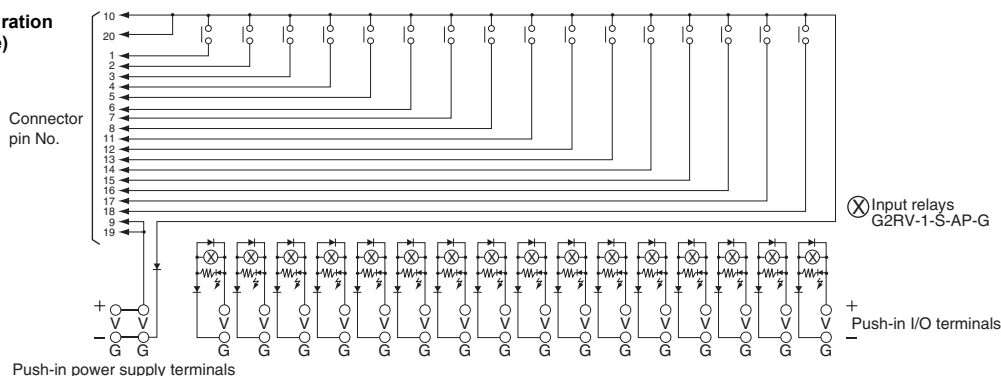
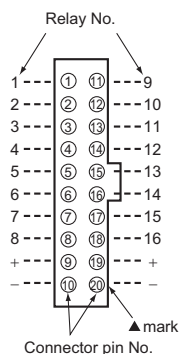


## Internal Circuits

### G70V-SID16P

(NPN input/- common)

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



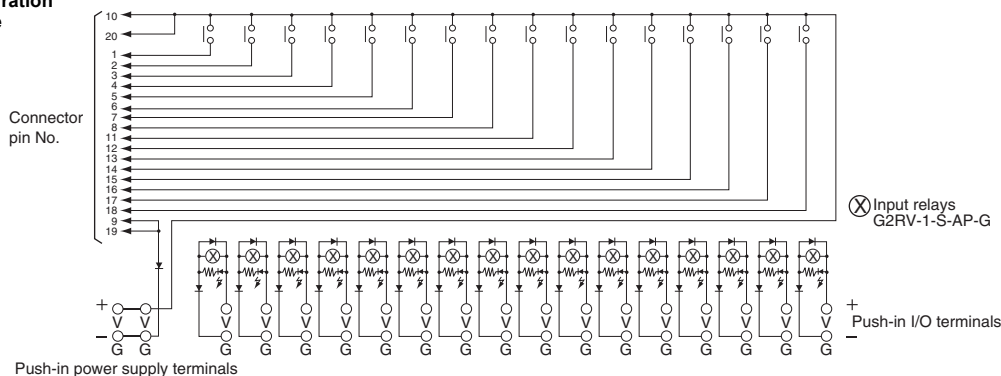
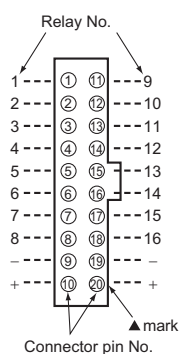
**Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| 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 (male) Configuration  
View from engaged side

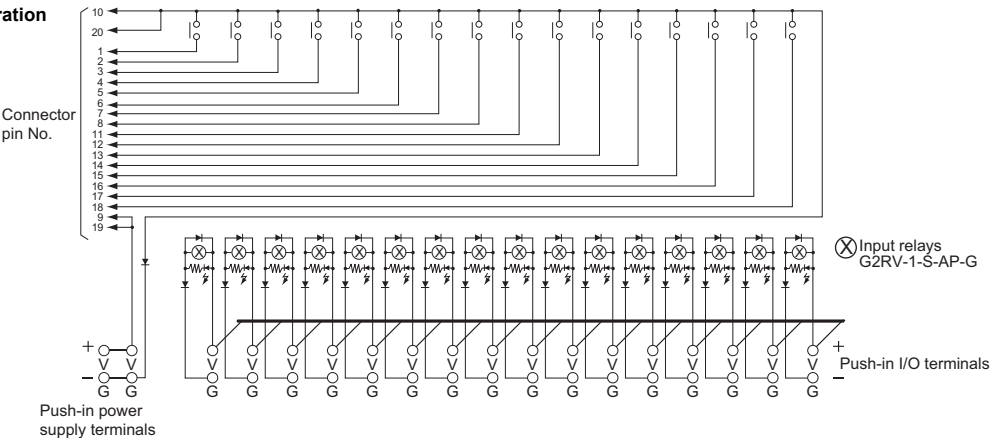
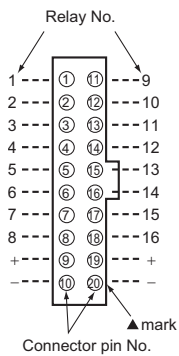


**Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| 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 (male) Configuration  
View from engaged side

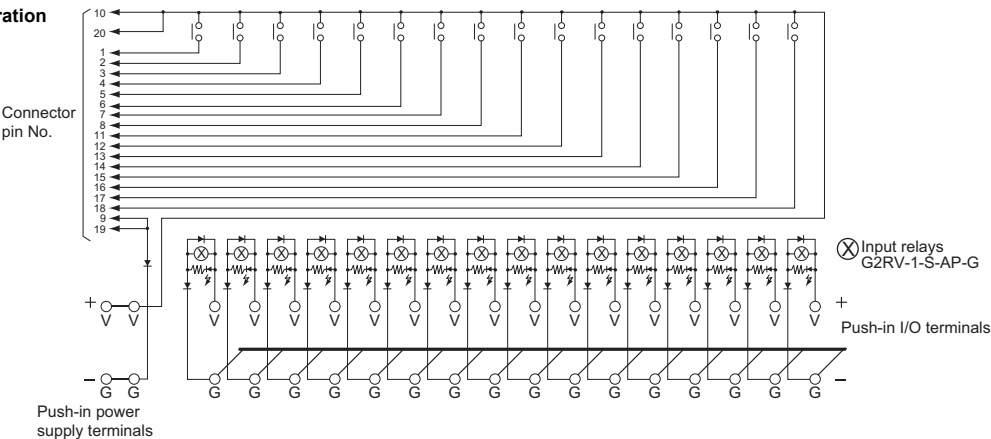
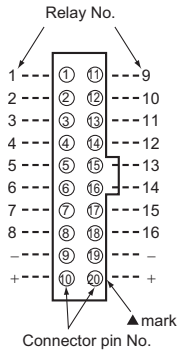


**Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| 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)

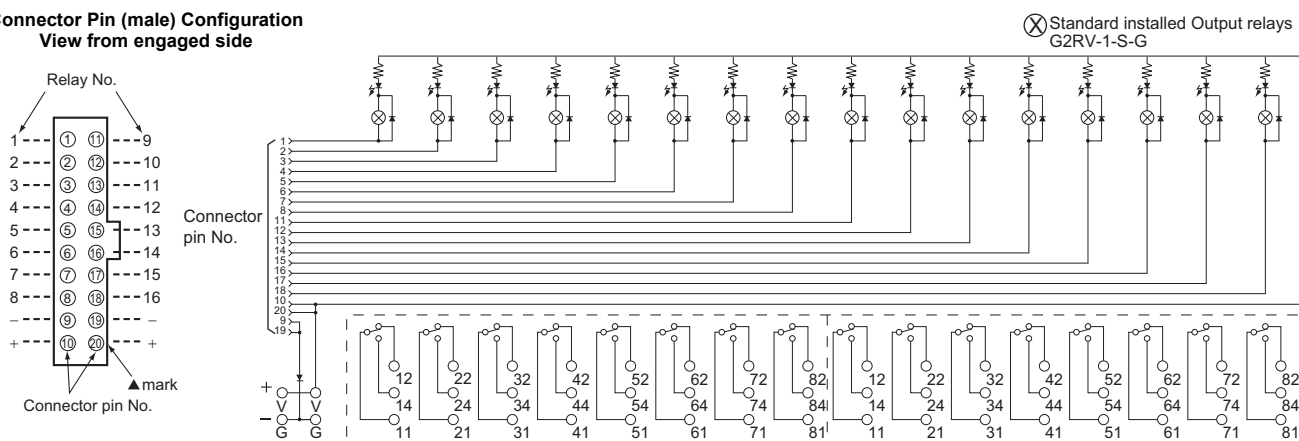
Connector Pin (male) Configuration  
View from engaged side



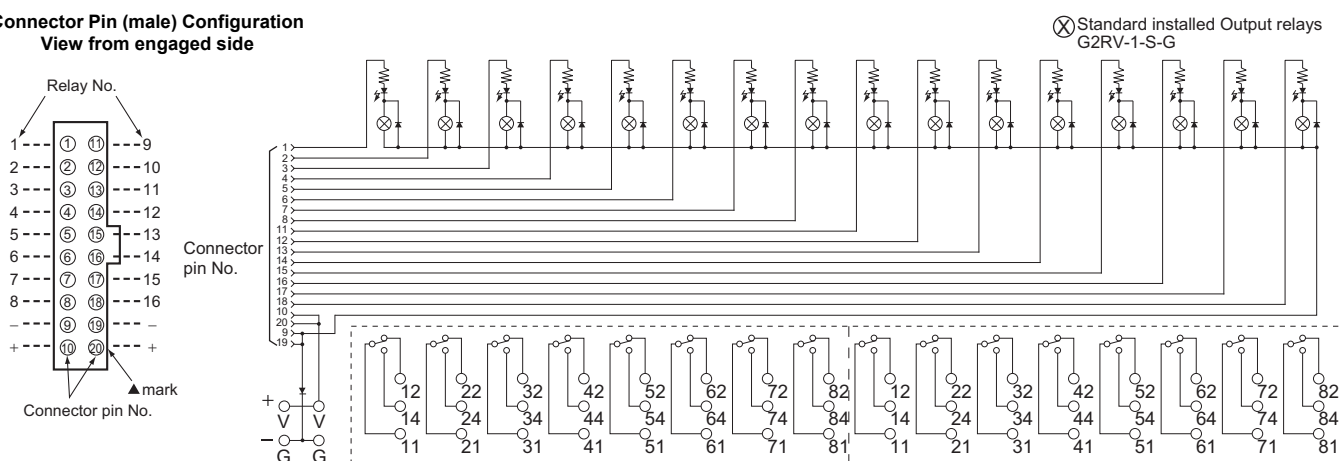
**Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| 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 (male) Configuration**  
**View from engaged side****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)     |                                      |

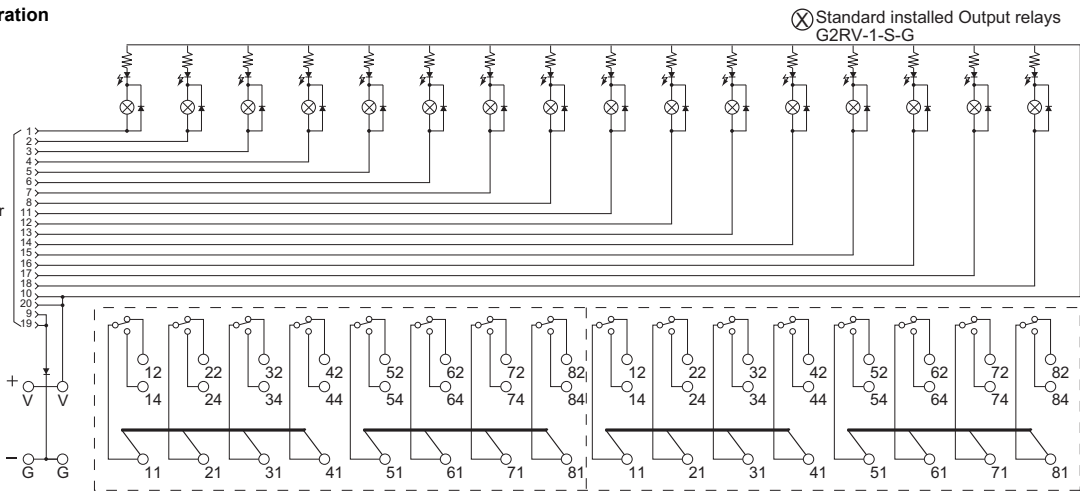
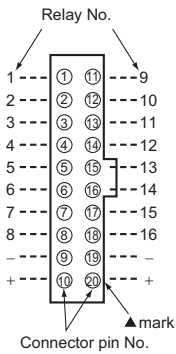
**G70V-SOC16P-1****(PNP output/- common)****Note:** A controller with a PNP transistor, + common output can be connected to the G70V-SOC16P-1.**Connector Pin (male) Configuration**  
**View from engaged side****Note:** Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

| 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 (male) Configuration  
View from engaged side



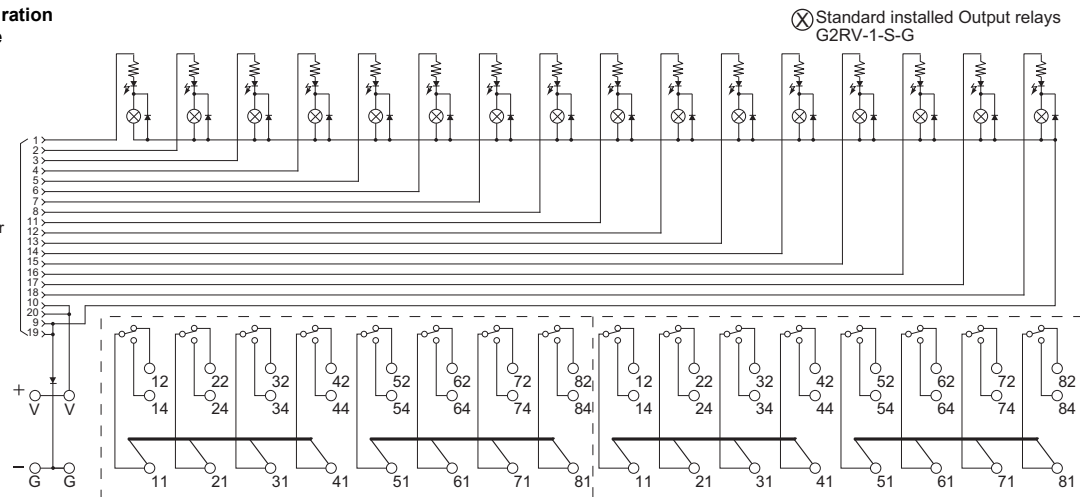
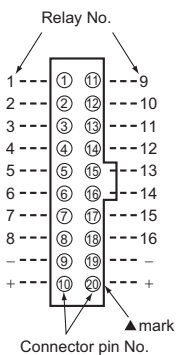
- Note: 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
2. Limit to 10 A/4-point common.

| 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)

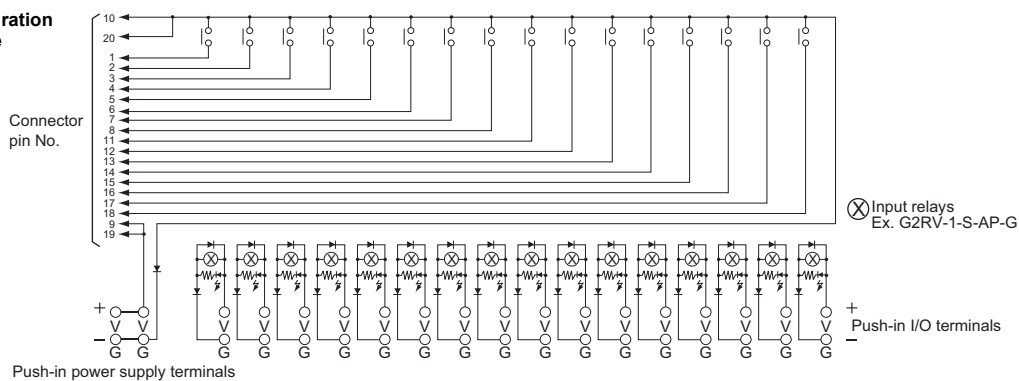
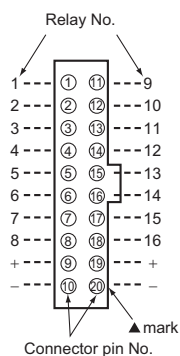
Note: A controller with a PNP transistor, + common output can be connected to the G70V-SOC16P-1-C4.

Connector Pin (male) Configuration  
View from engaged side



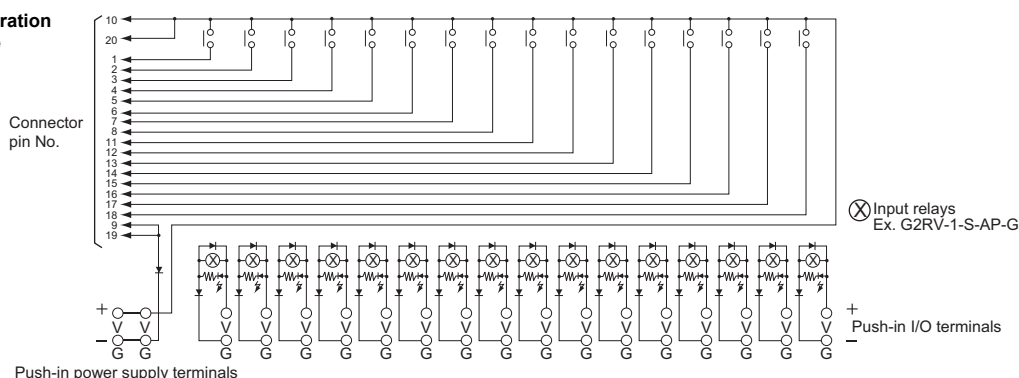
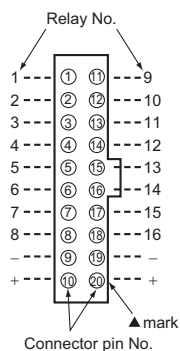
- Note: 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
2. Limit to 10 A/4-point common.

| 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-ZID16P****(NPN input/- common)****Note:** A controller with an NPN common input can be connected to the G70V-ZID16P.**Connector Pin (male) Configuration**  
**View from engaged side**

**Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. Relays are not mounted.

| 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-ZID16P-1****(PNP input/+ common)****Note:** A controller with an NPN + common input can be connected to the G70V-ZID16P-1.**Connector Pin (male) Configuration**  
**View from engaged side**

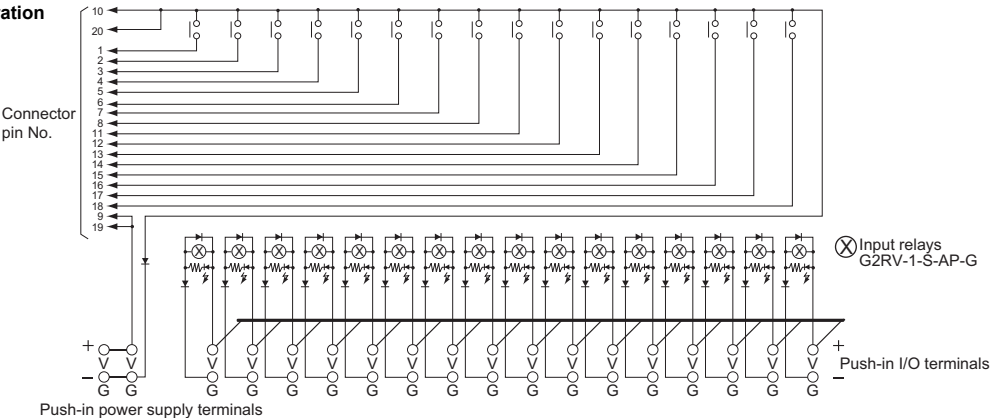
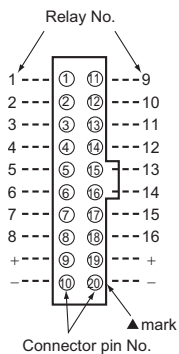
**Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. Relays are not mounted.

| 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-ZID16P-C16  
(NPN input/- common)

Note: A controller with an PNP common input can be connected to the G70V-ZID16P-C16.

Connector Pin (male) Configuration  
View from engaged side



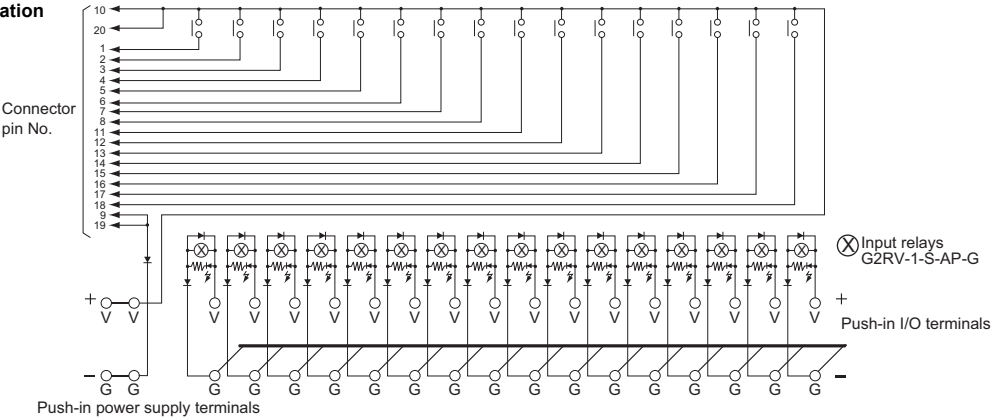
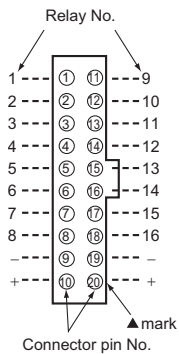
- Note: 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
2. Relays are not mounted.

| 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-ZID16P-1-C16  
(PNP input/+ common)

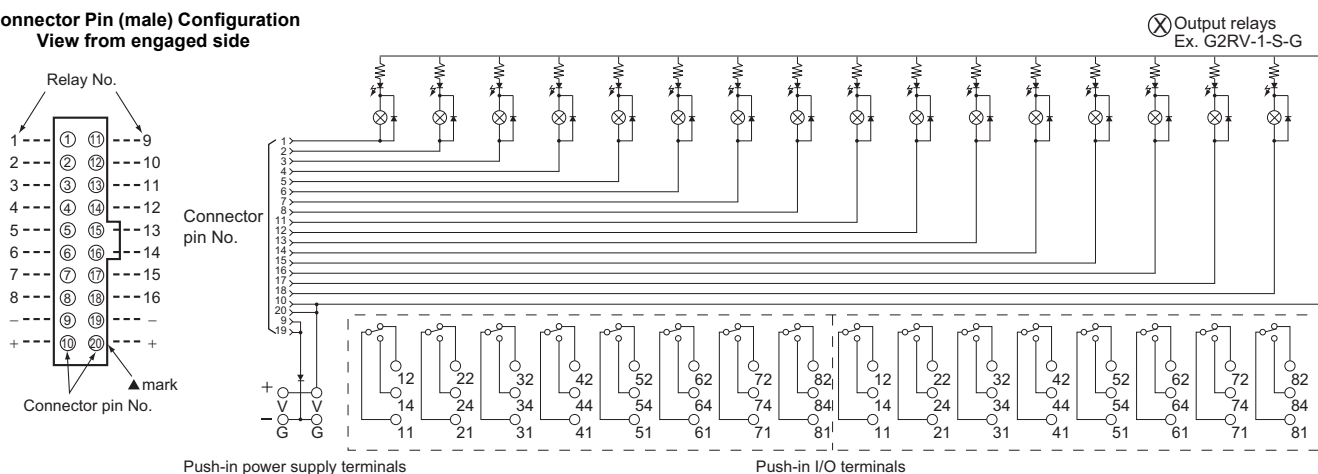
Note: A controller with an NPN + common input can be connected to the G70V-ZID16P-1-C16.

Connector Pin (male) Configuration  
View from engaged side



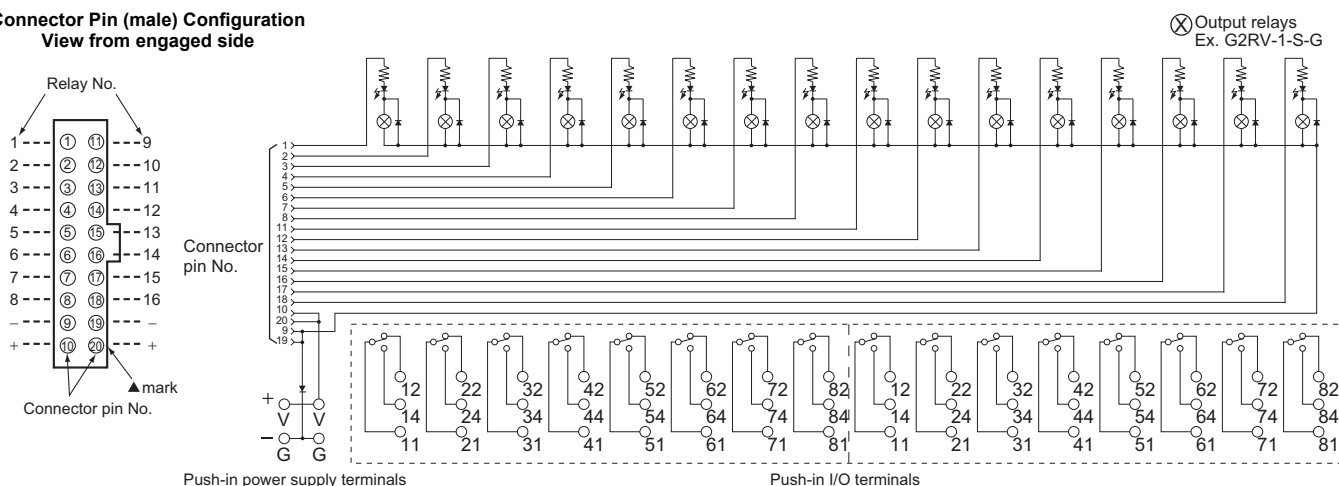
- Note: 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
2. Relays are not mounted.

| 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-ZOM16P****(NPN output/+ common)****Note:** A controller with an PNP transistor, + common output can be connected to the G70V-ZOM16P.**Connector Pin (male) Configuration**  
**View from engaged side**

- Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. A controller with an NPN transistor, - common output can be connected to the G70V-ZOM16P.  
 3. Relays are not mounted.

| 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****(PNP output/- common)****Note:** A controller with an NPN transistor, common output can be connected to the G70V-ZOM16P-1.**Connector Pin (male) Configuration**  
**View from engaged side**

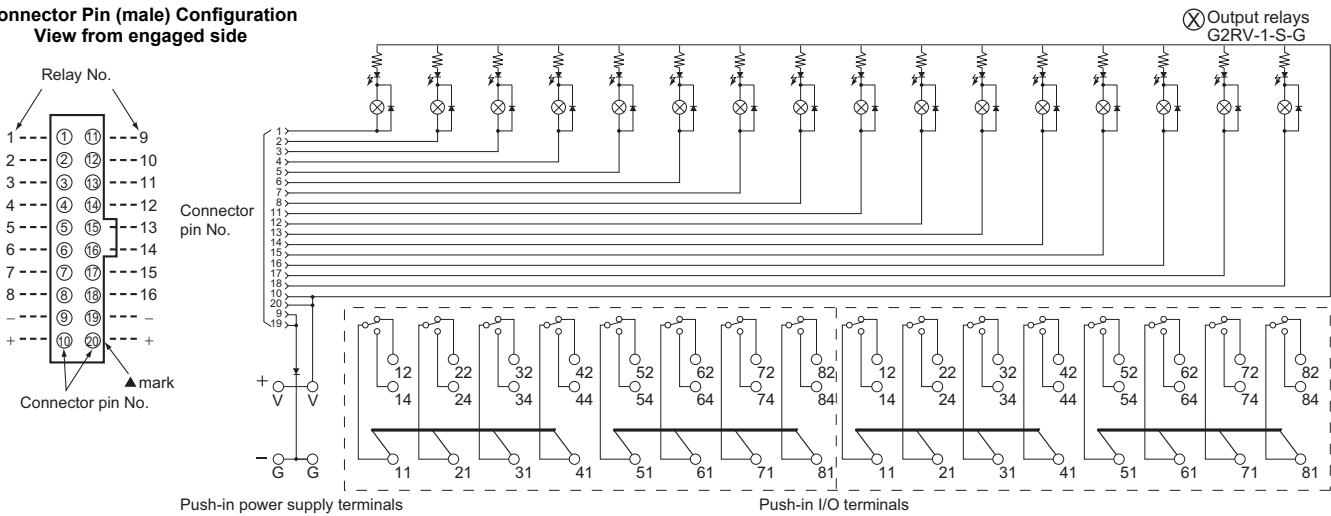
- Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. A controller with an PNP transistor, + common output can be connected to the G70V-ZOM16P-1.  
 3. Relays are not mounted.

| 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-C4  
(NPN output/+ common)

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

Connector Pin (male) Configuration  
View from engaged side



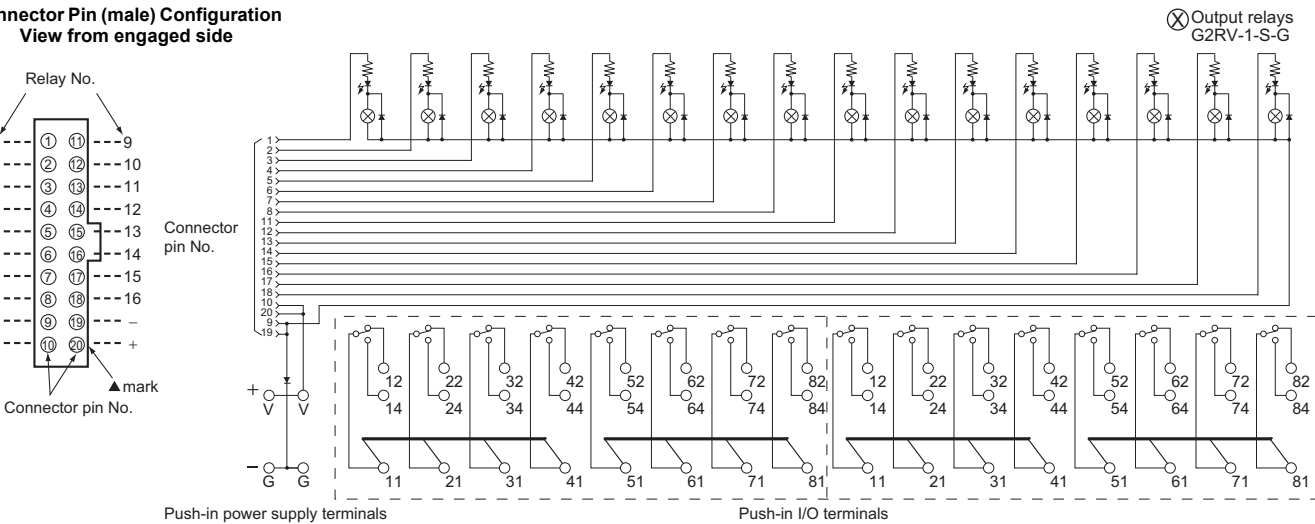
- Note:
1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.
  2. A controller with an NPN transistor, - common output can be connected to the G70V-ZOM16P-C4.
  3. Relays are not mounted.
  4. Limit to 10 A/4-point common.

| 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  
(PNP output/- common)

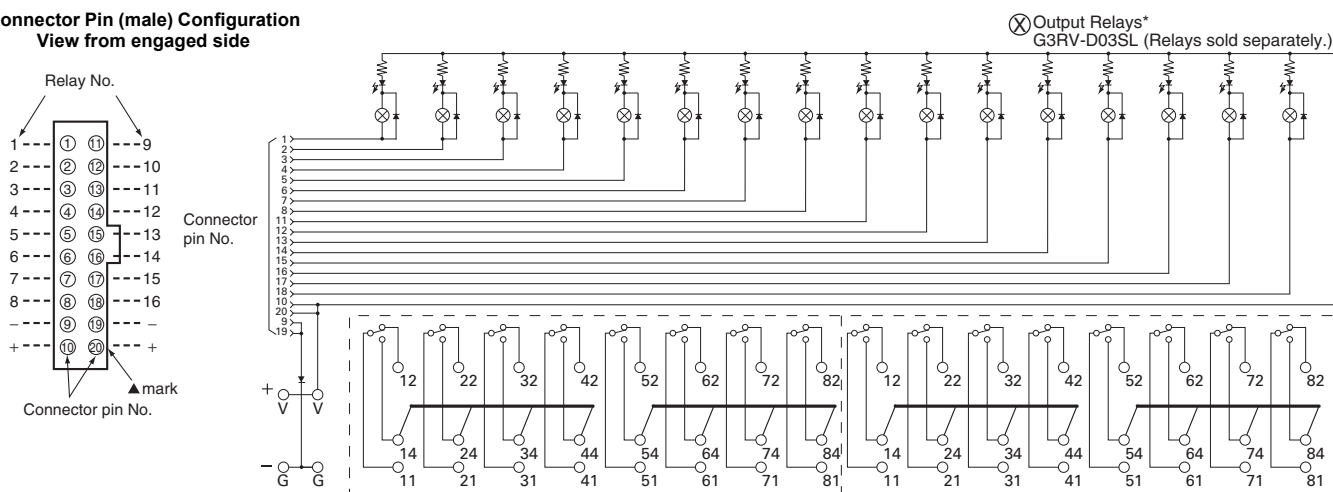
Note: A controller with an NPN transistor, common output can be connected to the G70V-ZOM16P-1-C4.

Connector Pin (male) Configuration  
View from engaged side



- Note:
1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.
  2. A controller with an PNP transistor, + common output can be connected to the G70V-ZOM16P-1-C4.
  3. Relays are not mounted.
  4. Limit to 10 A/4-point common.

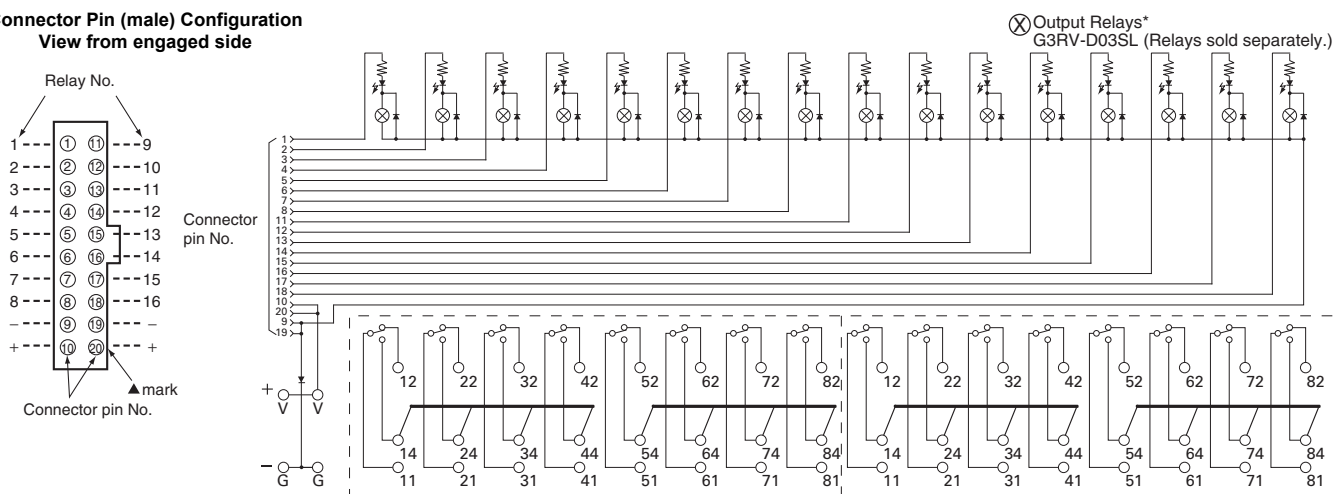
| Terminal name                                    | Description                          |
|--------------------------------------------------|--------------------------------------|
| V (push-in power supply terminals)               | Unit power supply terminals (24 VDC) |
| G (push-in power supply 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-C4-D****(NPN output/- common)****Note:** A controller with an NPN transistor, common output can be connected to the G70V-ZOM16P-C4-D.**Connector Pin (male) Configuration**  
**View from engaged side**

**Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. Limit to 10 A/4-point common.

| 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-C4-D does not come with SSRs. Use Slim I/O SSRs (for DC: G3RV-D03SL).

**G70V-ZOM16P-1-C4-D****(PNP output/- common)****Note:** A controller with a PNP transistor, common output can be connected to the G70V-ZOM16P-1-C4-D.**Connector Pin (male) Configuration**  
**View from engaged side**

**Note:** 1. Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.  
 2. Limit to 10 A/4-point common.

| 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

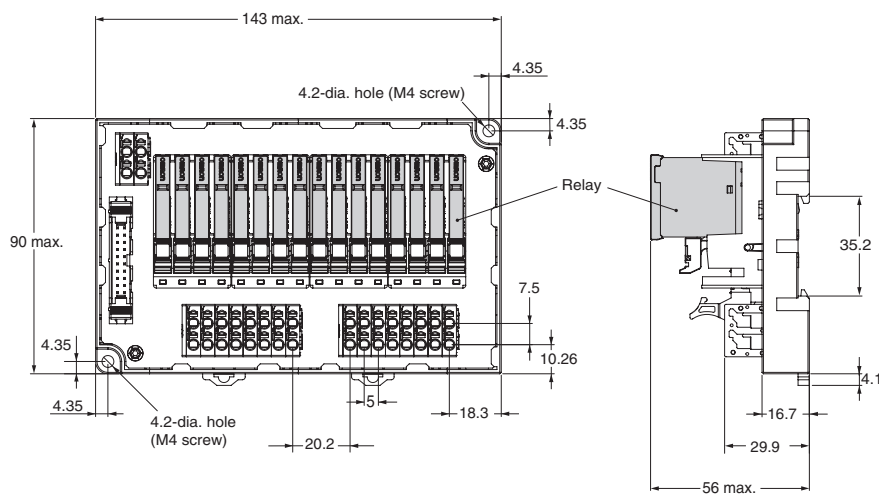
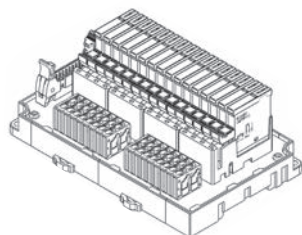
(Unit: mm)

## Main unit

## I/O Relay Terminals and I/O Terminal Sockets

## For Inputs

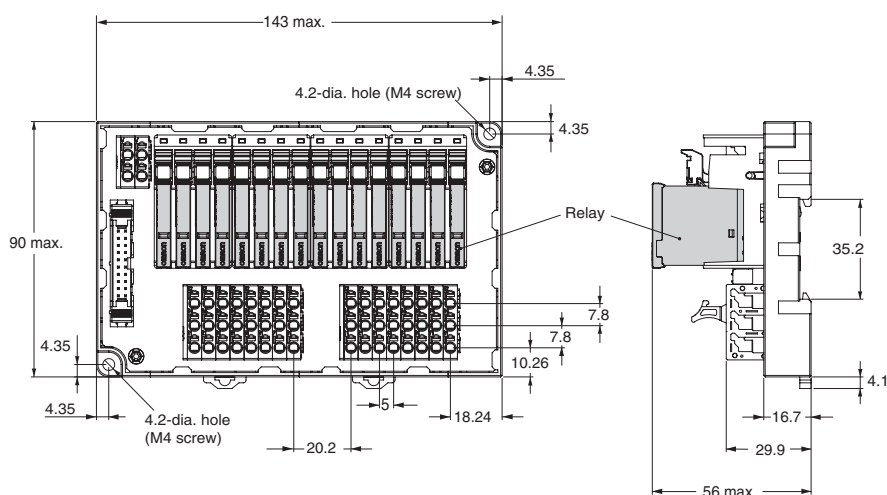
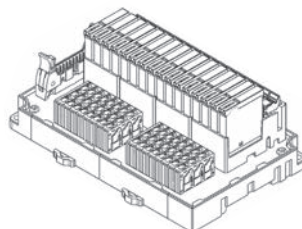
G70V-SID16P  
 G70V-SID16P-1  
 G70V-ZID16P  
 G70V-ZID16P-1  
 G70V-SID16P-C16  
 G70V-SID16P-1-C16  
 G70V-ZID16P-C16  
 G70V-ZID16P-1-C16



**Note:** 1. Relays are not mounted to the G70V-ZID16P(-1)(-C16) I/O Terminal Sockets.  
 2. Specified screw 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-C4-D  
 G70V-ZOM16P-1-C4-D



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



## Options (Order Separately)

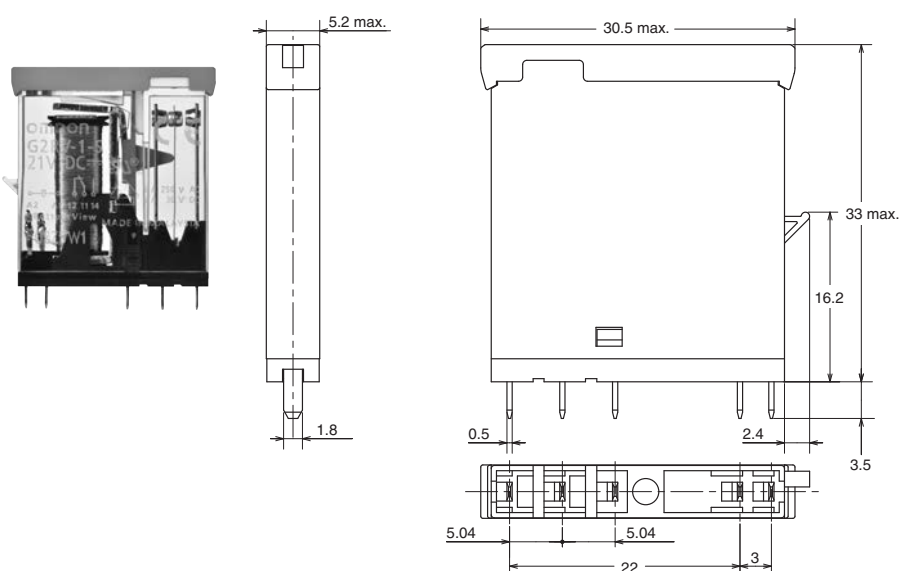
### Mountable Relays

#### Slim I/O Relays

#### Models without latching lever

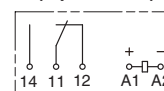
G2RV-1-S-G

G2RV-1-S-AP-G



Terminal Arrangement/  
Internal Connection Diagram  
(TOP VIEW)

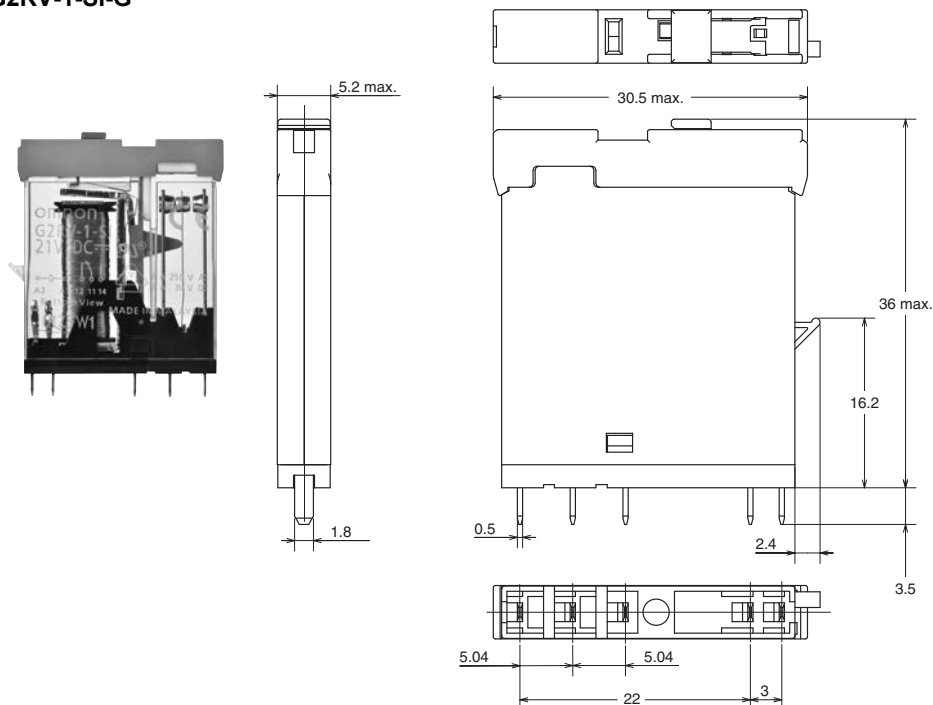
(Input circuit)



#### Slim I/O Relays

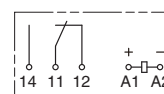
#### Models with latching lever (test switch)

G2RV-1-SI-G

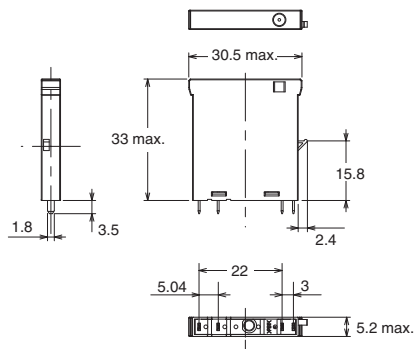


Terminal Arrangement/  
Internal Connection Diagram  
(TOP VIEW)

(Input circuit)

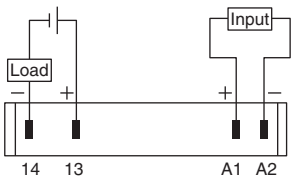


Slim I/O SSRs  
G3RV-D03SL  
G3RV-202S  
G3RV-202SL

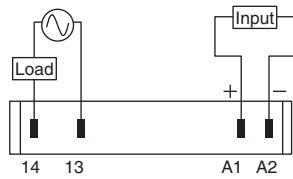


Terminal Arrangement/  
Internal Connection Diagram  
(TOP VIEW)

G3RV-D03SL (input circuit)

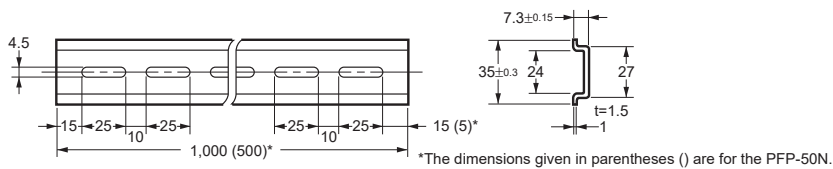
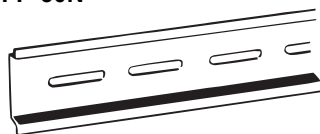


G3RV-202S(L) (input circuit)

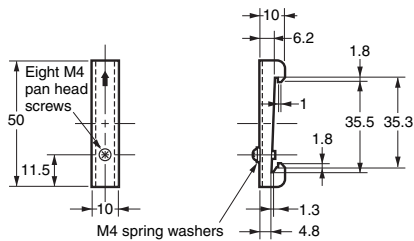
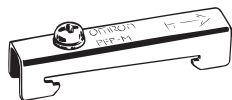


Parts for Rail Mounting

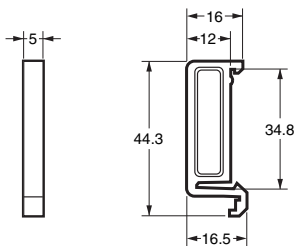
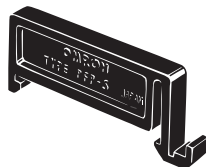
DIN Track  
PFP-100N  
PFP-50N



End Plate  
PFP-M



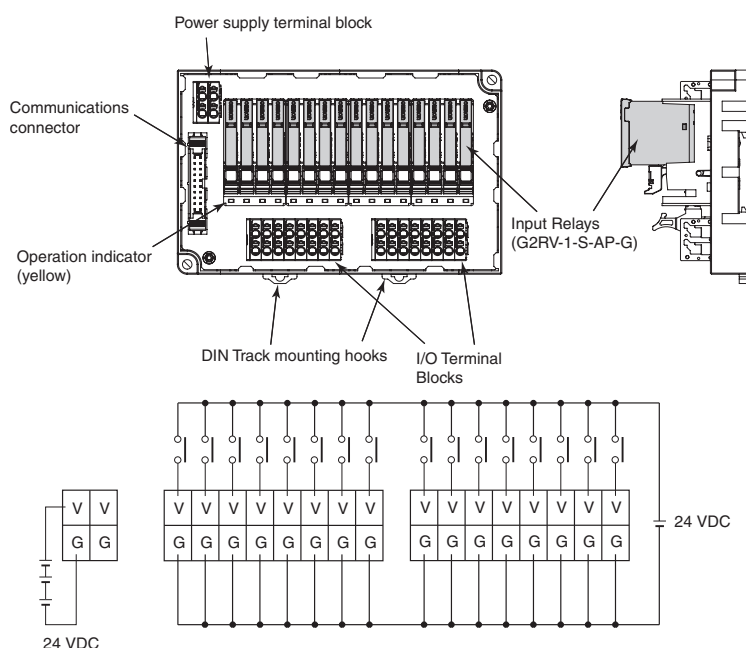
Spacer  
PFP-S



## Terminal Arrangement/Internal Connection

### For Inputs

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

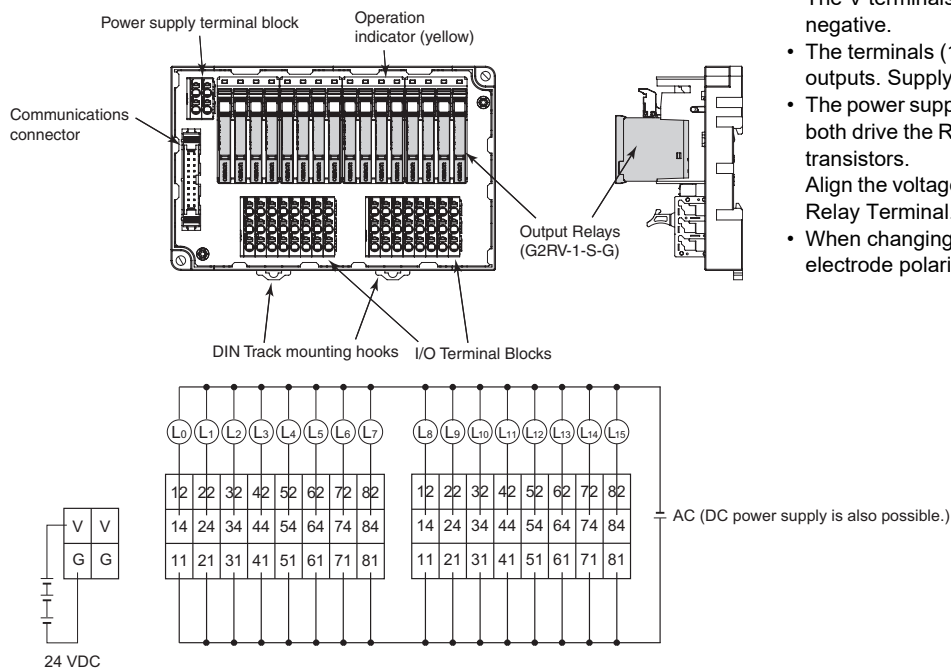


**Note:** Relay identification numbers are displayed from 1 to 16 in order from the left of the I/O terminal block.

- 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  
G70V-ZOM16P  
G70V-ZOM16P-1

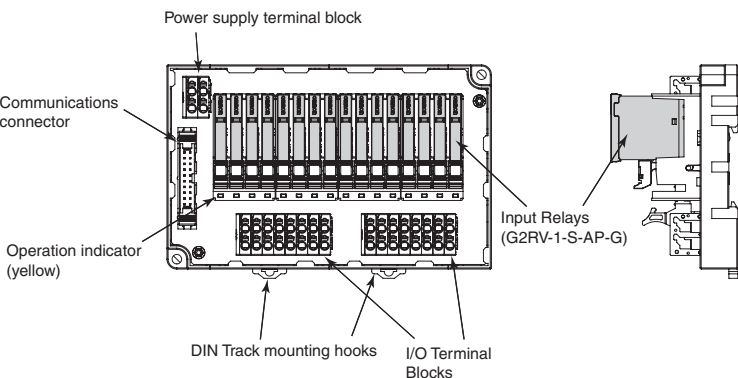


**Note:** Relay identification numbers are displayed from 1 to 16 in order from the left of the I/O terminal block.

- 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.
- When changing to a G3RV-D03SL, pay attention to the electrode polarity.

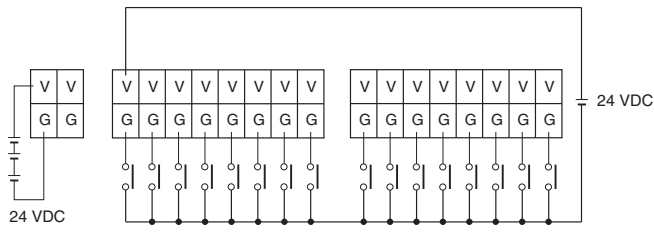
For Inputs

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

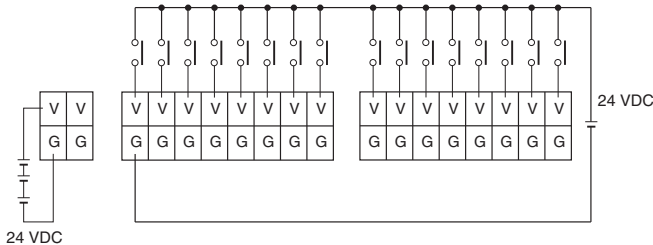


- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals.  
Make sure that the polarity is correct.  
The V terminals are positive and the G terminals are negative.
- Supply the rated voltage (24 VDC) of the Controller's input circuit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

G70V-SID16P-C16



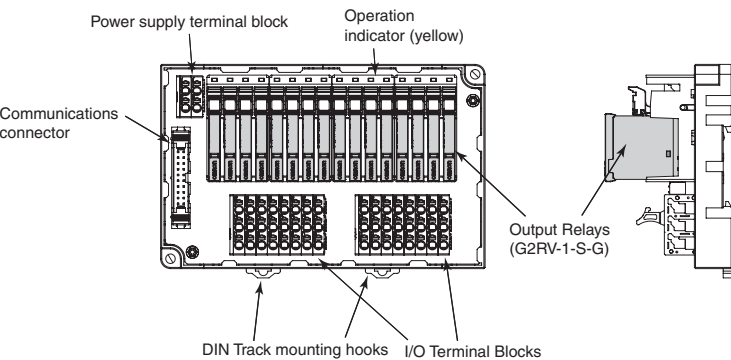
G70V-SID16P-1-C16



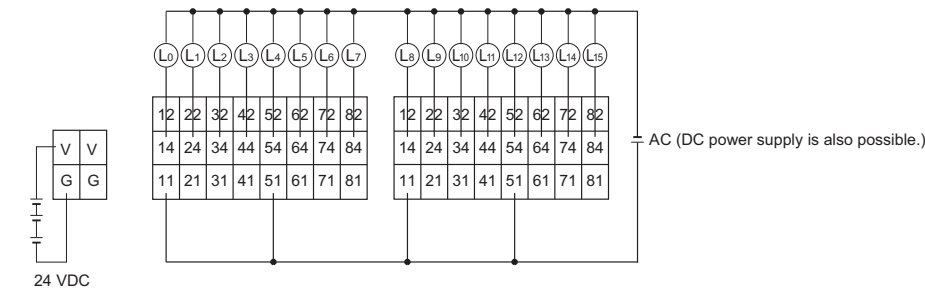
**Note:** Relay identification numbers are displayed from 1 to 16 in order from the left of the I/O terminal block.

For Outputs

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



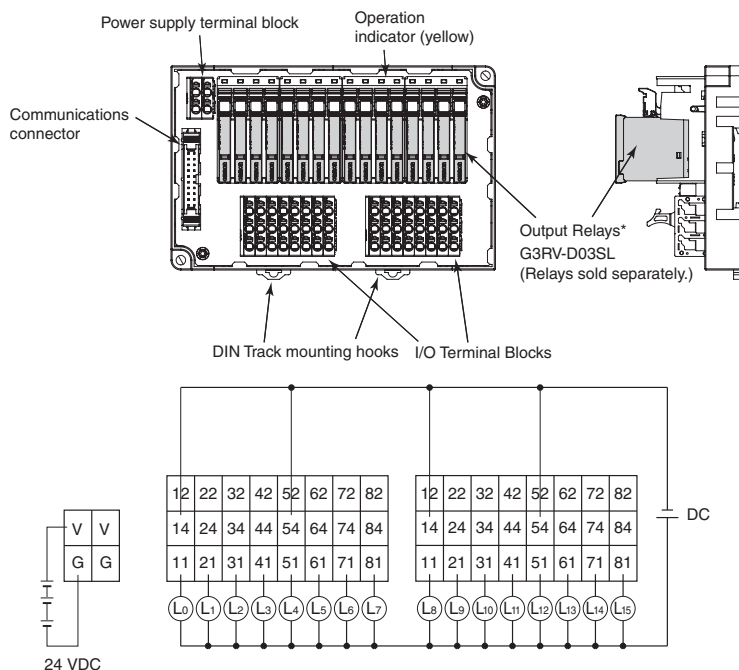
- Supply a power supply that meets the voltage specifications for both the Relays and I/O Relay Terminal to the V and G terminals.  
Make sure that the polarity is correct.  
The V terminals are positive and the G terminals are negative.
- The terminals (11 to 81, 12 to 82, and 14 to 84) are contact 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.
- When changing to a G3RV-D03SL, pay attention to the electrode polarity.



**Note:** Relay identification numbers are displayed from 1 to 16 in order from the left of the I/O terminal block.

## For Outputs

G70V-ZOM16P-C4-D  
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).

**Note:** Relay identification numbers are displayed from 1 to 16 in order from the left of the I/O terminal block.

## 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/product/cautions/46/243/index.html>.

### Warning Indications

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

### 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

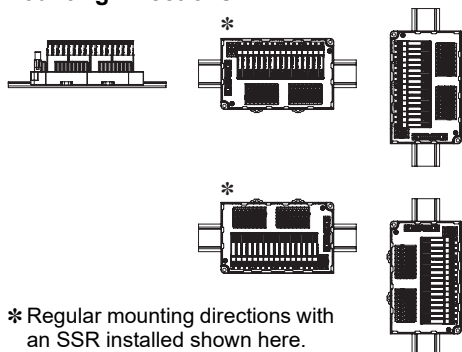
#### Operating and Storage Environments

- 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.

##### Mounting Directions



- 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 |
|--------------------------------------------------------------------------------------------|------------------|
| 0.25 to 1.5 mm <sup>2</sup> /<br>AWG24 to AWG16 stranded wire,<br>0.5 to 1.3 mm solid wire | 8 mm             |

\* The recommended wire gauge and stripping length values are for stranded wire or solid wire. When using ferrules, refer to the table of recommended ferrules in Precautions for Correct Use.

- 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: 9 A |

#### Application

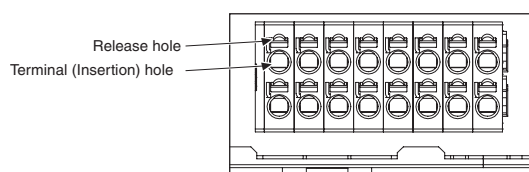
- Select a load within the rated values. Not doing so may result in malfunction, failure, or burning.
- The I/O Relay Terminal may occasionally rupture if short-circuit current flows. As protection against accidents due to short-circuiting, be sure to install protective devices, such as fuses and no-fuse 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.

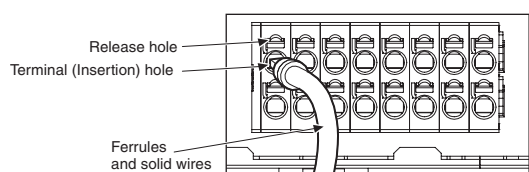
## Push-In Plus Terminal Blocks

### 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.

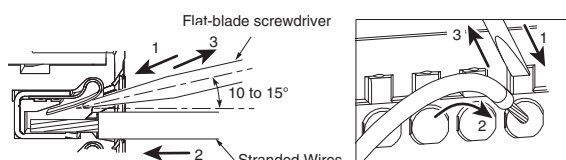


- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wire.

### 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.



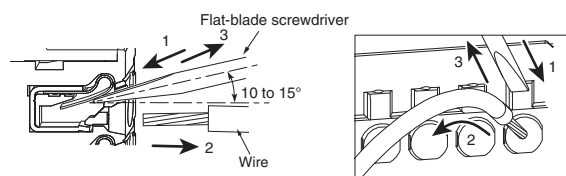
### Checking Connections

- 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.

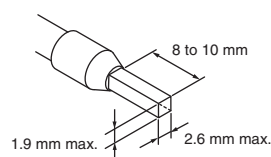
1. Hold a flat-blade screwdriver at an angle and insert it into the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
3. Remove the flat-blade screwdriver from the release hole.



## 3. Recommended Ferrules and Crimp Tools Recommended ferrules

| Applicable wire        |       | Ferrule Conductor length (mm) | Stripping length [mm] (Ferrules used) | Recommended ferrules                     |                    |              |
|------------------------|-------|-------------------------------|---------------------------------------|------------------------------------------|--------------------|--------------|
| (mm²)                  | (AWG) |                               |                                       | Phoenix Contact product                  | Weidmuller product | Wago product |
| 0.25                   | 24    | 8                             | 10                                    | AI0,25-8                                 | H0.25/12           | 216-301      |
|                        |       | 10                            | 12                                    | AI0,25-10                                | ---                | ---          |
| 0.34                   | 22    | 8                             | 10                                    | AI0,34-8                                 | H0.34/12           | 216-302      |
|                        |       | 10                            | 12                                    | AI0,34-10                                | ---                | ---          |
| 0.5                    | 20    | 8                             | 10                                    | AI0,5-8                                  | H0.5/14            | 216-201      |
|                        |       | 10                            | 12                                    | AI0,5-10                                 | H0.5/16            | 216-241      |
| 0.75                   | 18    | 8                             | 10                                    | AI0,75-8                                 | H0.75/14           | 216-202      |
|                        |       | 10                            | 12                                    | AI0,75-10                                | H0.75/16           | 216-242      |
| 1/1.25                 | 18/17 | 8                             | 10                                    | AI1-8                                    | H1.0/14            | 216-203      |
|                        |       | 10                            | 12                                    | AI1-10                                   | H1.0/16            | 216-243      |
| 1.25/1.5               | 17/16 | 8                             | 10                                    | AI1,5-8                                  | H1.5/14            | 216-204      |
|                        |       | 10                            | 12                                    | AI1,5-10                                 | H1.5/16            | 216-244      |
| Recommended crimp tool |       |                               |                                       | CRIMPFOX6<br>CRIMPFOX6T-F<br>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.

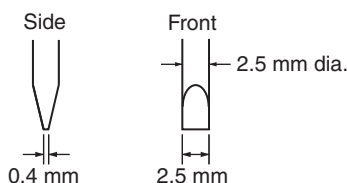


### Recommended Flat-blade Screwdriver

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.

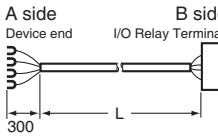
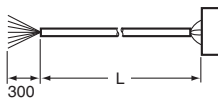
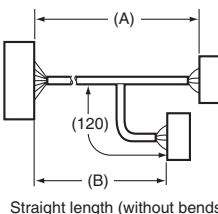
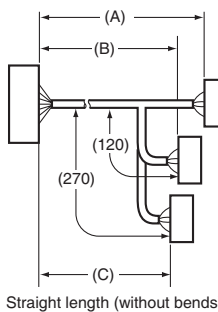
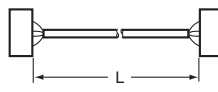


| Model                          | Manufacturer    |
|--------------------------------|-----------------|
| ESD 0,40×2,5                   | Wera            |
| SZS 0,4×2,5<br>SZF 0-0,4×2,5 * | Phoenix Contact |
| 0.4×2.5×75 302                 | Wiha            |
| AEF.2,5×75                     | Facom           |
| 210-719                        | Wago            |
| SDI 0.4×2.5×75                 | Weidmuller      |

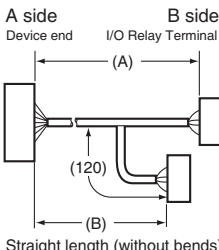
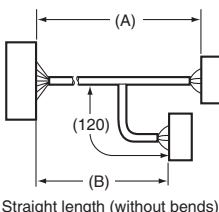
\* OMRON's exclusive purchase model XW4Z-00B is available to order as SZF 0-0,4 × 2,5 (manufactured by Phoenix Contact).

## 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><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><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><br>XW2Z-RI□C-□<br>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/Otax connectors (56 pins) | Cables with Connectors (1:3)<br><br>XW2Z-R□C-□-□               | 48 I/O points      |  | (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 |
|                                   |                                                                |                    |                                                                                     | Straight length (without bends) |           |                 |                    |
|                                   |                                                                |                    |                                                                                     |                                 |           |                 |                    |
|                                   |                                                                |                    |                                                                                     |                                 |           |                 |                    |
| MIL connectors (20 pins)          | Cables with Connectors (1:1)<br><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                            |   | (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 |                    |
|                                                            |                                                                                                                                 | 16 inputs and 16 outputs (32 I/O points) |                                                                                     | (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                                                                     |                     |                   |                    |
| 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                          |  | (A) 1,000           | (B) 750           | XW2Z-RI100C-75-MN  |
|                                                            |                                                                                                                                 | 32 output points                         |                                                                                     | (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  |
|                                                            |                                                                                                                                 |                                          |                                                                                     | (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 |

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

Cables that can be connected to the QX81, QX81-S2, and QY81P have not been prepared.

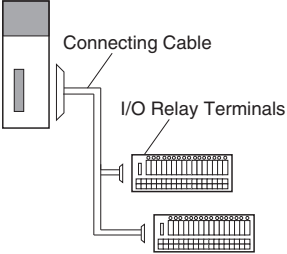
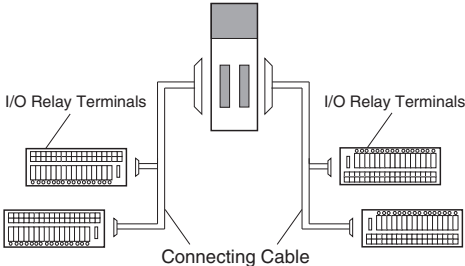
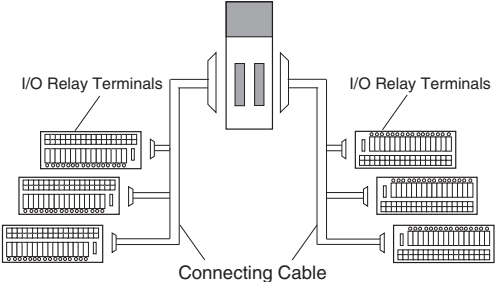
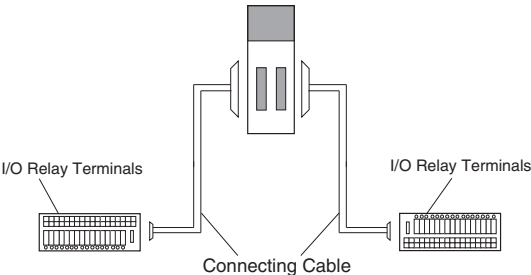
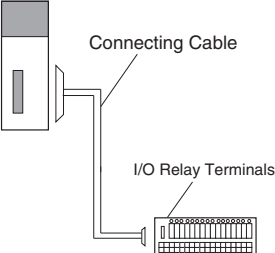
\*1. These cables are used to connect to slave products for DeviceNet and other networks.

\*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 30.

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       |  <p>Diagram A shows a vertical PLC unit connected to two I/O Relay Terminal blocks. A single connecting cable runs from the PLC unit to the top terminal block, and then continues to the bottom terminal block. Labels include 'Connecting Cable' and 'I/O Relay Terminals'.</p>                        |
| B       |  <p>Diagram B shows a vertical PLC unit connected to two pairs of I/O Relay Terminal blocks. A single connecting cable runs from the PLC unit to the top pair of terminal blocks, and then continues to the bottom pair. Labels include 'I/O Relay Terminals' and 'Connecting Cable'.</p>                |
| D       |  <p>Diagram D shows a vertical PLC unit connected to three pairs of I/O Relay Terminal blocks. A single connecting cable runs from the PLC unit to the top pair of terminal blocks, and then continues to the middle and bottom pairs. Labels include 'I/O Relay Terminals' and 'Connecting Cable'.</p> |
| E       |  <p>Diagram E shows a vertical PLC unit connected to two I/O Relay Terminal blocks. A single connecting cable runs from the PLC unit to the top terminal block, and then continues to the bottom terminal block. Labels include 'I/O Relay Terminals' and 'Connecting Cable'.</p>                      |
| F       |  <p>Diagram F shows a vertical PLC unit connected to one I/O Relay Terminal block. A single connecting cable runs from the PLC unit to the terminal block. Labels include 'Connecting Cable' and 'I/O Relay Terminals'.</p>                                                                            |

## List of Combinations with the OMRON PLC NX Series

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

## List of Combinations with the OMRON PLC CJ Series

| CJ1W I/O Units                   |            |                                                                           |                   | Conne<br>ction<br>pattern | XW2Z-R Cables  |               |                      | G70V I/O Relay Terminals |                       |                      |
|----------------------------------|------------|---------------------------------------------------------------------------|-------------------|---------------------------|----------------|---------------|----------------------|--------------------------|-----------------------|----------------------|
| I/O<br>capacity                  | Model      | External<br>connectors *1                                                 | Polarity          |                           | Specifications | Model *2      | Quantity<br>required | Specifications           | Model                 | Quantity<br>required |
| DC Input Units                   |            |                                                                           |                   |                           |                |               |                      |                          |                       |                      |
| 32 inputs                        | CJ1W-ID231 | 1 Fujitsu/Otax<br>connector                                               | NPN               | A                         | 1:2            | XW2Z-RI□C-□   | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
|                                  | 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<br>connectors<br>(2, 32-point connectors)                  | NPN               | B                         |                | XW2Z-RI□C-□   | 2                    |                          | G70V-SID16P(-1)(-C16) | 4                    |
|                                  | CJ1W-ID262 | 2 MIL connectors<br>(2, 32-point connectors)                              | NPN               |                           |                | XW2Z-RO□□-□D1 | 2                    |                          |                       |                      |
| Transistor Output Units          |            |                                                                           |                   |                           |                |               |                      |                          |                       |                      |
| 32<br>outputs                    | CJ1W-OD231 | 1 Fujitsu/Otax<br>connector                                               | Sinking<br>(NPN)  | A                         | 1:2            | XW2Z-RO□C-□   | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                  | CJ1W-OD233 | 1 MIL connector                                                           | Sinking<br>(NPN)  |                           |                | XW2Z-RO□□-□D1 | 1                    |                          |                       |                      |
|                                  | CJ1W-OD232 | 1 MIL connector                                                           | Sourcing<br>(PNP) |                           |                | XW2Z-RO□□-□D1 | 1                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 2                    |
|                                  | CJ1W-OD234 | 1 MIL connector                                                           | Sinking<br>(NPN)  |                           |                | XW2Z-RO□□-□D1 | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
| 64<br>outputs                    | CJ1W-OD261 | 2 Fujitsu/Otax<br>connectors<br>(2, 32-point connectors)                  | Sinking<br>(NPN)  | B                         |                | XW2Z-RO□C-□   | 2                    | NPN outputs              | G70V-SOC16P(-C4)      | 4                    |
|                                  | CJ1W-OD262 | 2 MIL connectors<br>(2, 32-point connectors)                              | Sourcing<br>(PNP) |                           |                | XW2Z-RO□□-□D1 | 2                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 4                    |
|                                  | CJ1W-OD263 | 2 MIL connectors<br>(2, 32-point connectors)                              | Sinking<br>(NPN)  |                           |                | XW2Z-RO□□-□D1 | 2                    | NPN outputs              | G70V-SOC16P(-C4)      | 4                    |
| DC Input/Transistor Output Units |            |                                                                           |                   |                           |                |               |                      |                          |                       |                      |
| 16 inputs<br>and 16<br>outputs   | CJ1W-MD231 | 2 Fujitsu/Otax<br>connectors<br>(1 for 16 inputs and<br>1 for 16 outputs) | Sinking<br>(NPN)  | E                         | 1:1            | XW2Z-R□C      | 2                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 1                    |
|                                  |            |                                                                           | NPN outputs       |                           |                |               |                      | G70V-SOC16P(-C4)         | 1                     |                      |
|                                  | CJ1W-MD233 | 2 MIL connectors<br>(1 for 16 inputs and<br>1 for 16 outputs)             | Sinking<br>(NPN)  |                           |                | XW2Z-RO□C     | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 1                    |
|                                  |            |                                                                           |                   |                           |                | XW2Z-RO□C     | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 1                    |
|                                  | CJ1W-MD232 | 2 MIL connectors<br>(1 for 16 inputs and<br>1 for 16 outputs)             | Sourcing<br>(PNP) |                           |                | XW2Z-RO□C     | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 1                    |
| 32 inputs<br>and 32<br>outputs   | CJ1W-MD261 | 2 Fujitsu/Otax<br>connectors<br>(1 for 32 inputs and<br>1 for 32 outputs) | Sinking<br>(NPN)  | B                         | 1:2            | XW2Z-RI□C-□   | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
|                                  |            |                                                                           |                   |                           |                | XW2Z-RO□□C-□  | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                  | CJ1W-MD263 | 2 MIL connectors<br>(1 for 32 inputs and<br>1 for 32 outputs)             | Sinking<br>(NPN)  |                           |                | XW2Z-RO□□-□D1 | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
|                                  |            |                                                                           |                   |                           |                | XW2Z-RO□□-□D1 | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |

\*1. For details on the types of connectors, refer to pages 24 and 25.

\*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                   |                |                                                                           |                   | Conne<br>ction<br>pattern | XW2Z-R Cables  |              |                      | G70V I/O Relay Terminals |                       |                      |
|----------------------------------|----------------|---------------------------------------------------------------------------|-------------------|---------------------------|----------------|--------------|----------------------|--------------------------|-----------------------|----------------------|
| I/O<br>capacity                  | Model          | External<br>connectors *1                                                 | Polarity          |                           | Specifications | Model *2     | Quantity<br>required | Specifications           | Model                 | Quantity<br>required |
| DC Input Units                   |                |                                                                           |                   |                           |                |              |                      |                          |                       |                      |
| 32 inputs                        | CS1W-ID231     | 1 Fujitsu/Otax<br>connector                                               | NPN               | A                         | 1:2            | XW2Z-RI□C-□  | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
| 64 inputs                        | CS1W-ID261     | 2 Fujitsu/Otax<br>connectors<br>(2, 32-point connectors)                  | NPN               | B                         |                | XW2Z-RI□C-□  | 2                    |                          | G70V-SID16P(-1)(-C16) | 4                    |
| 96 inputs                        | CS1W-ID291     | 2 Fujitsu/Otax<br>connectors<br>(2, 48-point connectors)                  | NPN               | D                         | 1:3            | XW2Z-R□C-□-□ | 2                    |                          | G70V-SID16P(-1)(-C16) | 6                    |
| Transistor Output Units          |                |                                                                           |                   |                           |                |              |                      |                          |                       |                      |
| 32<br>outputs                    | CS1W-OD231     | 1 Fujitsu/Otax<br>connector                                               | Sinking<br>(NPN)  | A                         | 1:2            | XW2Z-RO□C-□  | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                  | CS1W-OD232     | 1 Fujitsu/Otax<br>connector                                               | Sourcing<br>(PNP) |                           |                | XW2Z-RO□C-□  | 1                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 2                    |
| 64<br>outputs                    | CS1W-OD261     | 2 Fujitsu/Otax<br>connectors<br>(2, 32-point connectors)                  | Sinking<br>(NPN)  | B                         |                | XW2Z-RO□C-□  | 2                    | NPN outputs              | G70V-SOC16P(-C4)      | 4                    |
|                                  | CS1W-OD262     | 2 Fujitsu/Otax<br>connectors<br>(2, 32-point connectors)                  | Sourcing<br>(PNP) |                           |                | XW2Z-RO□C-□  | 2                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 4                    |
| 96<br>outputs                    | CS1W-OD291     | 2 Fujitsu/Otax<br>connectors<br>(2, 48-point connectors)                  | Sinking<br>(NPN)  | D                         | 1:3            | XW2Z-R□C-□-□ | 2                    | NPN outputs              | G70V-SOC16P(-C4)      | 6                    |
| DC Input/Transistor Output Units |                |                                                                           |                   |                           |                |              |                      |                          |                       |                      |
| 32 inputs<br>and 32<br>outputs   | CS1W-<br>MD261 | 2 Fujitsu/Otax<br>connectors<br>(1 for 32 inputs and<br>1 for 32 outputs) | Sinking<br>(NPN)  | B                         | 1:2            | XW2Z-RI□C-□  | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
|                                  |                |                                                                           |                   |                           |                | XW2Z-RO□C-□  | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                  | CS1W-<br>MD262 | 2 Fujitsu/Otax<br>connectors<br>(1 for 32 inputs and<br>1 for 32 outputs) | Sourcing<br>(PNP) |                           |                | XW2Z-RI□C-□  | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 2                    |
|                                  |                |                                                                           |                   |                           |                | XW2Z-RO□C-□  | 1                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 2                    |
| 48 inputs<br>and 48<br>outputs   | CS1W-<br>MD291 | 2 Fujitsu/Otax<br>connectors<br>(1 for 48 inputs and<br>1 for 48 outputs) | Sinking<br>(NPN)  | D                         | 1:3            | XW2Z-R□C-□-□ | 2                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 3                    |
|                                  |                |                                                                           |                   |                           |                |              |                      | NPN outputs              | G70V-SOC16P(-C4)      | 3                    |
|                                  | CS1W-<br>MD292 | 2 Fujitsu/Otax<br>connectors<br>(1 for 48 inputs and<br>1 for 48 outputs) | Sourcing<br>(PNP) |                           |                | XW2Z-R□C-□-□ | 1                    | Inputs *3                | G70V-SID16P(-1)(-C16) | 3                    |
|                                  |                |                                                                           |                   |                           |                |              |                      | ---                      |                       |                      |

\*1. For details on the types of connectors, refer to pages 24 and 25.

\*2. The box □ is replaced by the cable length.

\*3. 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                   |                             |                              |               | Conne<br>ction<br>pattern | XW2Z-R Cables  |                      |                      | G70V I/O Relay Terminals |                       |                      |
|--------------------------------|-----------------------------|------------------------------|---------------|---------------------------|----------------|----------------------|----------------------|--------------------------|-----------------------|----------------------|
| I/O<br>capacity                | Model                       | External<br>connectors       | Polarity      |                           | Specifications | Model *1             | Quantity<br>required | Specifications           | Model                 | Quantity<br>required |
| Input Units                    |                             |                              |               |                           |                |                      |                      |                          |                       |                      |
| 32 inputs                      | LX41C4                      | 1 Fujitsu/Otax<br>connector  | NPN or<br>PNP | A                         | 1:2            | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | QX41/QX41-S1/<br>QX41-S2    |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | QX71                        |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | RX41C4                      |                              |               |                           |                |                      |                      |                          |                       |                      |
| 64 inputs                      | LX42C4                      | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP | B                         | 1:2            | XW2Z-RI□□□□<br>-□□MN | 2                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 4                    |
|                                | QX42/QX42-S1                |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | QX82/QX82-S1                |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | RX42C4                      |                              |               |                           |                |                      |                      |                          |                       |                      |
| Output Units                   |                             |                              |               |                           |                |                      |                      |                          |                       |                      |
| 32<br>outputs                  | LY41NT1P                    | 1 Fujitsu/Otax<br>connector  | NPN           | A                         | 1:2            | XW2Z-RO□□□□<br>-□□MN | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                | QY41P                       |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | QY71                        |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | RY41NT2P                    |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | LY41PT1P                    | 1 Fujitsu/Otax<br>connector  | PNP           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 2                    |
|                                | RY41PT1P                    |                              |               |                           |                |                      |                      |                          |                       |                      |
| RY41PT2H                       |                             |                              |               |                           |                |                      |                      |                          |                       |                      |
| 64<br>outputs                  | LY42NT1P                    | 2 Fujitsu/Otax<br>connectors | NPN           | B                         | 1:2            | XW2Z-RO□□□□<br>-□□MN | 2                    | NPN outputs              | G70V-SOC16P(-C4)      | 4                    |
|                                | RY42NT2P                    |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | QY42P                       |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | LY42PT1P                    | 2 Fujitsu/Otax<br>connectors | PNP           |                           |                | XW2Z-RO□□□□<br>-□□MN | 2                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 4                    |
|                                | RY42PT1P                    |                              |               |                           |                |                      |                      |                          |                       |                      |
|                                | QY82P                       |                              |               |                           |                |                      |                      |                          |                       |                      |
| Mixed I/O Units                |                             |                              |               |                           |                |                      |                      |                          |                       |                      |
| 32 inputs<br>and 32<br>outputs | RH42C4NT2P<br>(Input side)  | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP | B                         | 1:2            | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | RH42C4NT2P<br>(Output side) |                              | NPN           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                | QH42P<br>(Input side)       | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP |                           |                | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | QH42P<br>(Output side)      |                              | NPN           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                | QX41Y41P<br>(Input side)    | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP |                           |                | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | QX41Y41P<br>(Output side)   |                              | NPN           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                | LH42C4NT1P<br>(Input side)  | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP |                           |                | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | LH42C4NT1P<br>(Output side) |                              | NPN           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | NPN outputs              | G70V-SOC16P(-C4)      | 2                    |
|                                | LH42C4PT1P<br>(Input side)  | 2 Fujitsu/Otax<br>connectors | NPN or<br>PNP |                           |                | XW2Z-RI□□□□<br>-□□MN | 1                    | Inputs *2                | G70V-SID16P(-1)(-C16) | 2                    |
|                                | LH42C4PT1P<br>(Output side) |                              | PNP           |                           |                | XW2Z-RO□□□□<br>-□□MN | 1                    | PNP outputs              | G70V-SOC16P-1(-C4)    | 2                    |

**Note:** Cables that can be connected to the QX81, QX81-S2, and QY81P have not been prepared.

\*1. The box □ is replaced by the cable length. For details on the types, refer to page 25.

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

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**CSM\_2\_21**

**Cat. No. J215-E1-15** 0426 (0316)