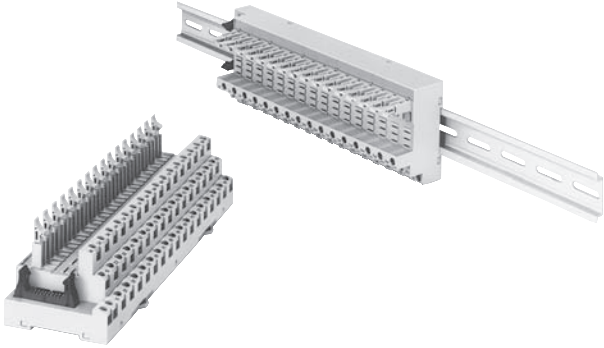
I/O Terminal Socket
G70A

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



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

- Connects to a PLC with a simple snap-in connector.
- The G70A-ZOC16-3 cab be combined with a DRT1-OD32ML I/O Terminal for DeviceNet connectivity.
- SPDT relays can be mounted.
- Conforms to VDE (VDE0106) and CE standards.
- Electric-shock preventive (finger-touch protection) terminal socket.
- DIN rail mountable.
- High-capacity (10 A) terminal socket.
- Excellent noise resistance characteristics.
- Built-in diodes for coil surge suppression.

Ordering Information

I/O Terminal Socket

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

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

Suitable Relay/Solid State Relay/Solid-State Timer

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

Accessories (Order Separately)

Short Bar

Applicable model	Model
G70A-ZOC16-3 G70A-ZOC16-4	G78-16-E

Connecting Sockets for I/O Terminal Expansion

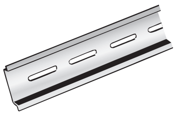
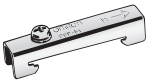
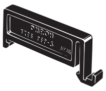
Number of poles	Model
1 pole (G2R: 1 pole usage)	P2RFZ-05-E
2 poles (G2R: 2 poles usage)	P2RFZ-08-E

Cables for I/O Relay Terminals XW2Z-R

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

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

Accessories for DIN Track Mounting

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

Specifications

Ratings/Characteristics

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

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

Approved Standards

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

UL standard certification (File No. E95399)

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

CSA certified (File No. LR35535)

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

VDE Standards

Model	Standard number	Certification No.
G70A-ZOC16-3 G70A-ZOC16-4	VDE0160	124796

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

Coil Ratings

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

Contact Ratings

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

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

Coil Ratings

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

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

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

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

●Solid State Relay (G3R-I/O)

Ratings

Input Module

Input

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

Output

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

Output Module

Input

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

Output

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

✻1. Depends on the ambient temperature. Refer to the Engineering Data (Reference Value) *Load Current vs. Ambient Temperature Rating* on page 7 for details.

✻2. The minimum current value is measured at 10°C min.

Characteristics

Input Module

Item	G3R-IAZR1SN	G3R-IDZR1SN	G3R-IDZR1SN-1
Operate time	20 ms max.	0.1 ms max.	15 ms max.
Release time	20 ms max.	0.1 ms max.	15 ms max.
Response frequency	10 Hz	1 kHz	10 Hz
Output ON voltage drop	1.6 V max.		
Leakage current	5 µA max.		
Insulation resistance	100 MΩ min. between input and output		
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between input and output		
Vibration resistance	10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)		
Shock resistance	1,000 m/s^2		
Ambient temperature	Operating: –30 to 80°C (with no icing) Storage: –30 to 100°C (with no icing)		
Ambient humidity	Operating: 45% to 85%		
Weight	Approx. 18 g		

Output Module

Item	G3R-OA202SZN-UTU	G3R-OA202SLN-UTU	G3R-ODX02SN-UTU	G3R-OD201SN-UTU
Operate time	1/2 of load power source cycle + 1 ms max.	1 ms max.		
Release time	1/2 of load power source cycle + 1 ms max.		2 ms max.	
Response frequency	20 Hz		100 Hz	
Output ON voltage drop	1.6 V max.			2.5 V max.
Leakage current	1.5 mA max.		1 mA max.	
Insulation resistance	100 MΩ min. between input and output			
Dielectric strength	4,000 VAC, 50/60 Hz for 1 min between input and output			
Vibration resistance	10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)			
Shock resistance	1,000 m/s^2			
Ambient temperature	Operating: –30 to 80°C (with no icing) Storage: –30 to 100°C (with no icing)			
Ambient humidity	Operating: 45% to 85%			
Weight	Approx. 18 g			

●Solid State Relay (G3RZ)

Ratings

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

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

Characteristics

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

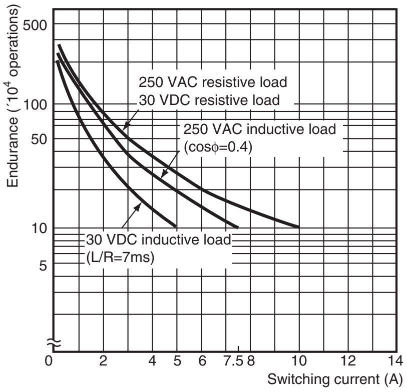
●Solid-State Timer (H3RN)

For H3RN specifications, refer to the H3RN Datasheet.

Engineering Data (Reference Value)

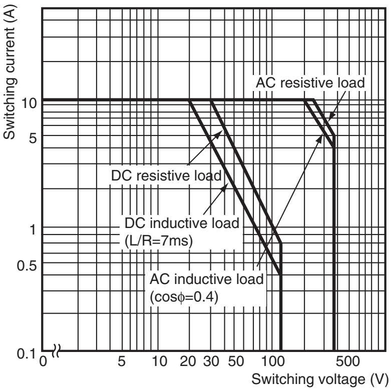
When Mounted to a G2R

Endurance



Maximum Switching Power

G2R-1-S (24 VDC)

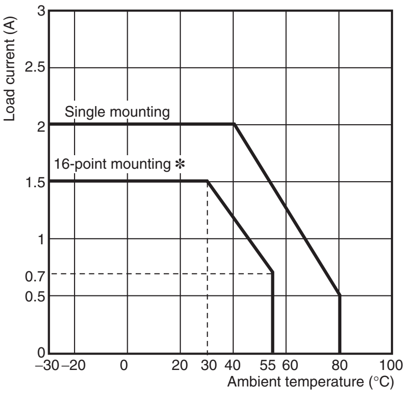


Note: The characteristics shown here are for 16-point mounting.
This data was produced from actual values sampled on production lines, and should be used for reference purposes only.
Since relays are mass-produced, a certain amount of tolerance is generally allowed in their application.

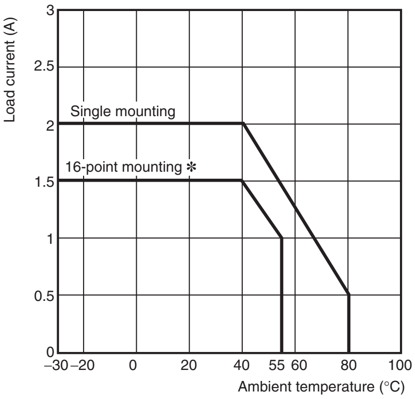
When Mounted to a G3R-I/O

Load Current vs. Ambient Temperature Rating

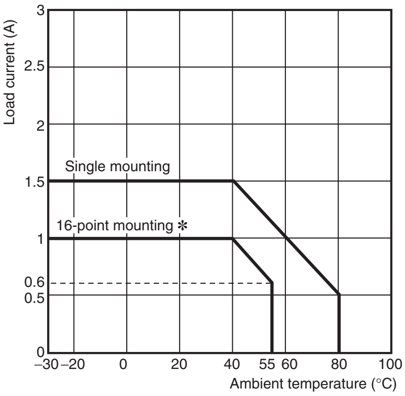
G3R-OA202SZN-UTU
G3R-OA202SLN-UTU



G3R-ODX02SN-UTU



G3R-OD201SN-UTU

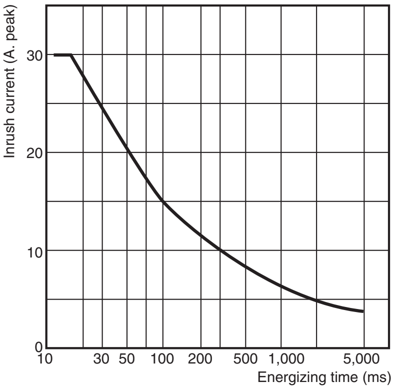


✻ On G70A-ZOC16, fully mounted.

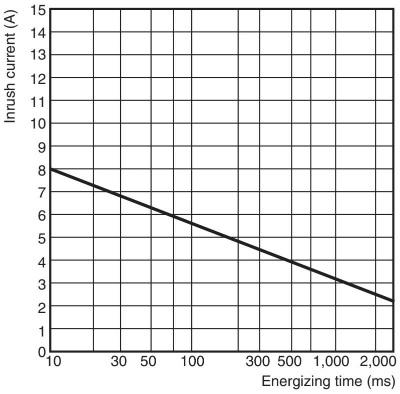
Inrush Current Resistivity

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

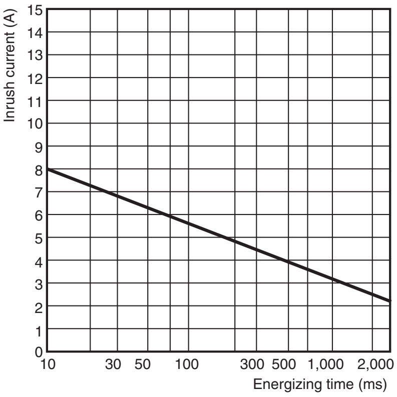
G3R-OA202SZN-UTU
G3R-OA202SLN-UTU



G3R-ODX02SN-UTU



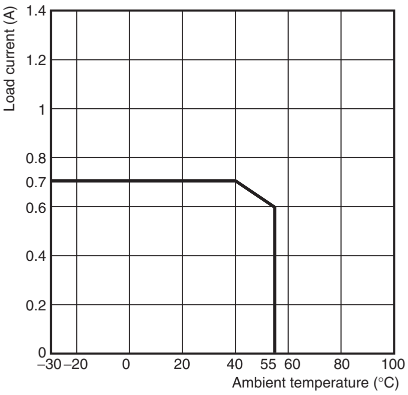
G3R-OD201SN-UTU



When Mounted to a G3RZ

Load Current vs. Ambient Temperature Rating

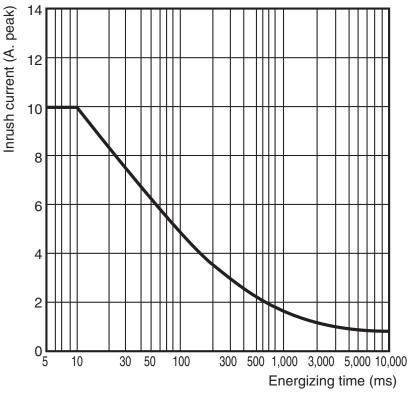
G3RZ-201SLN



Inrush Current Resistivity

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

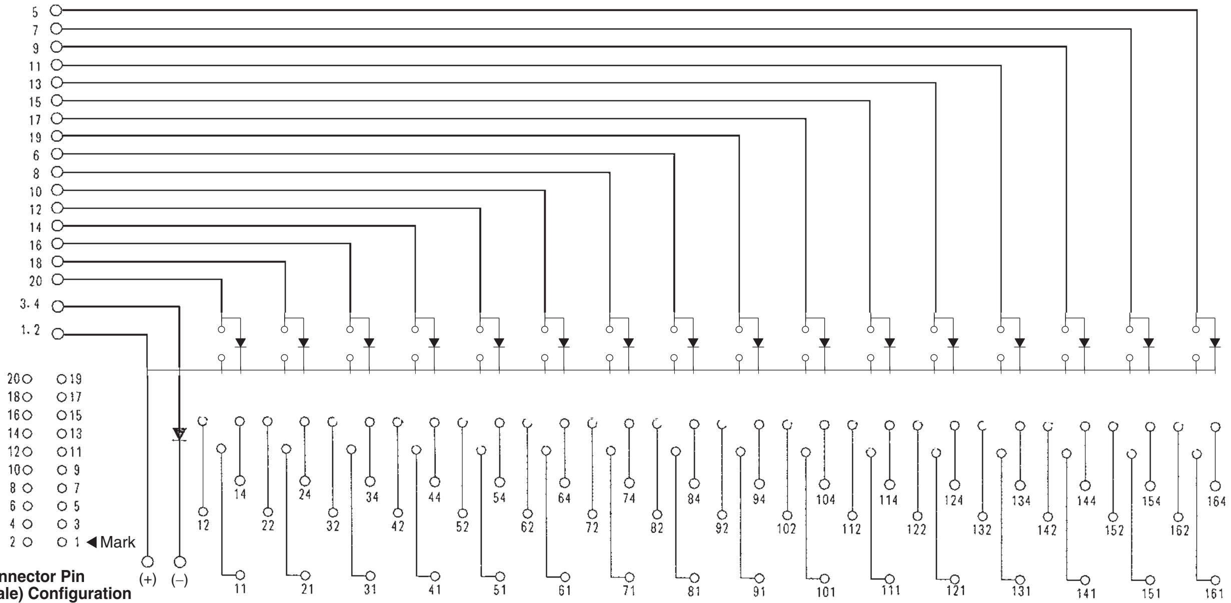
G3RZ-201SLN



Internal Circuits

- G70A-ZOC16-3 (NPN)

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


5
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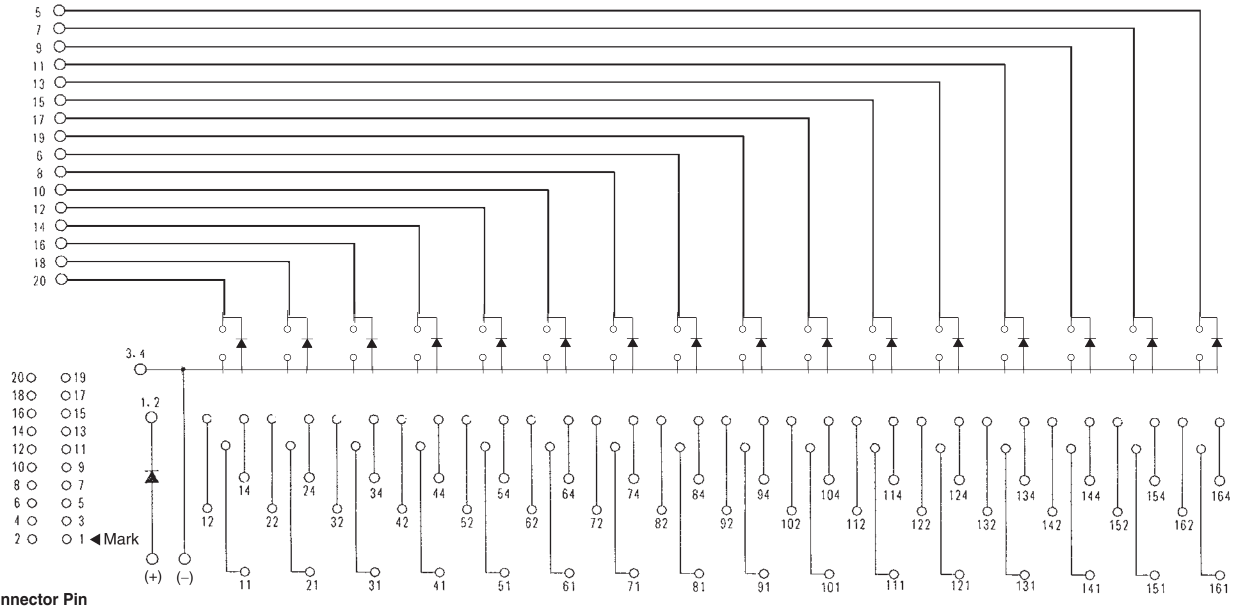
12
14
16
18
20
3. 4
1. 2
20 19
18 17
16 15
14 13
12 11
10 9
8 7
6 5
4 3
2 1 ◀Mark
(+)
(–)
11 12 14
21 22 24
31 32 34
41 42 44
51 52 54
61 62 64
71 72 74
81 82 84
91 92 94
101 102 104
111 112 114
121 122 124
131 132 134
141 142 144
151 152 154
161 162 164

Connector Pin (male) Configuration View from engaged side

G70A-ZOC16-4 (PNP)

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


5
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14
16
18
20
3. 4
1. 2
20 19
18 17
16 15
14 13
12 11
10 9
8 7
6 5
4 3
2 1 ◀Mark
(+)
(–)
11 12 14
21 22 24
31 32 34
41 42 44
51 52 54
61 62 64
71 72 74
81 82 84
91 92 94
101 102 104
111 112 114
121 122 124
131 132 134
141 142 144
151 152 154
161 162 164

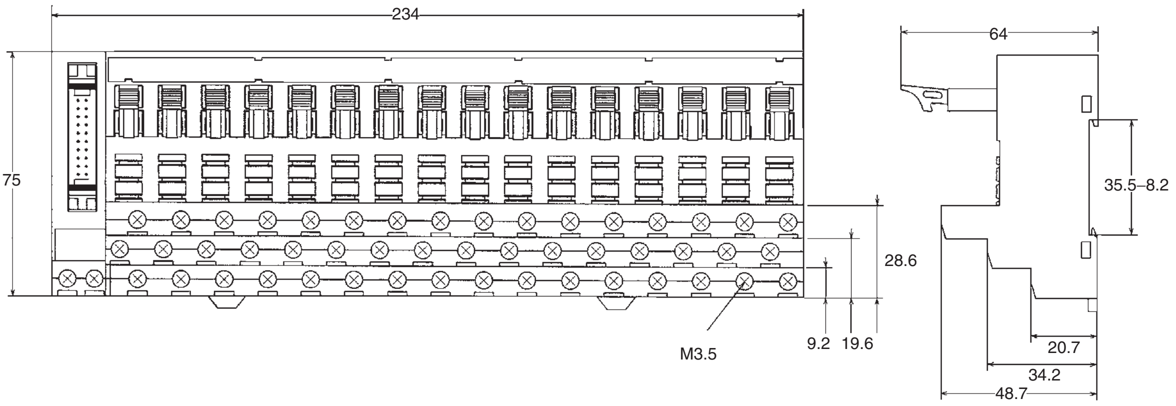
Connector Pin (male) Configuration View from engaged side

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

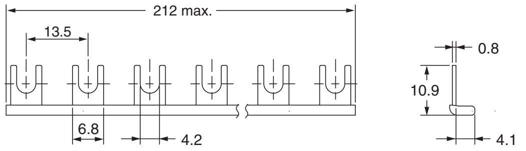
Dimensions

(Unit: mm)

G70A-ZOC16 (Output)

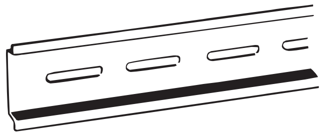

234
75
28.6
M3.5
9.2
19.6
64
35.5–8.2
20.7
34.2
48.7

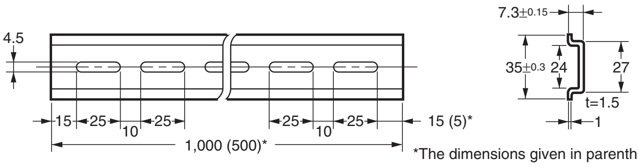
Short Bar
G78-16-E


212 max.
13.5
6.8
4.2
0.8
10.9
4.1

Parts for Rail Mounting

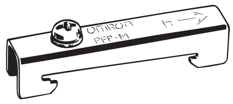
DIN Track
PFP-100N
PFP-50N

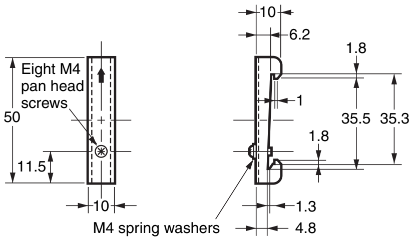



4.5
15
25
10
25
25
10
25
15 (5)*
1,000 (500)*
7.3±0.15
35±0.3
24
27
t=1.5
1

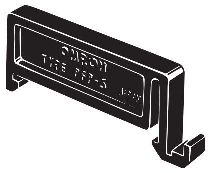
*The dimensions given in parentheses () are for the PFP-50N.

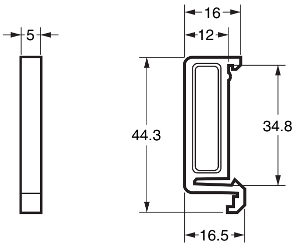
End Plate
PFP-M



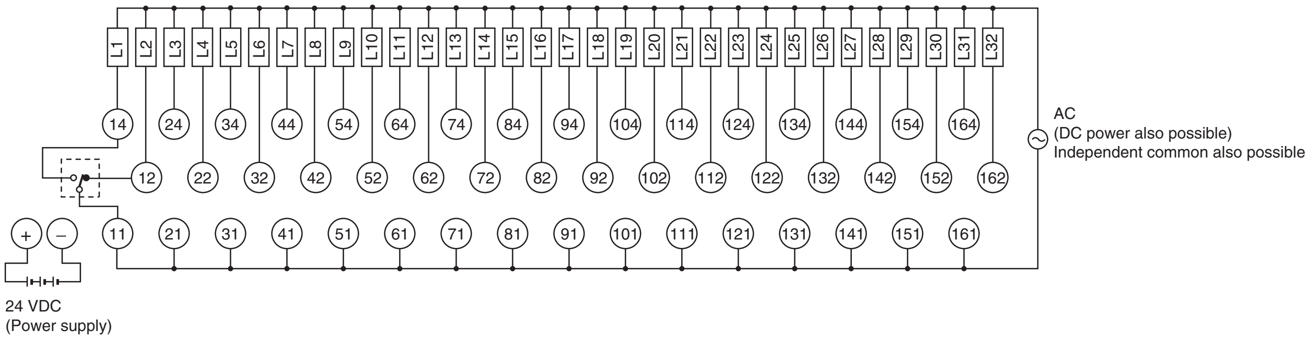

Eight M4 pan head screws
50
11.5
10
M4 spring washers
10
6.2
1.8
1
35.5
35.3
1.8
1.3
4.8

Spacer
PFP-S




5
16
12
44.3
34.8
16.5

Terminal Arrangement/Internal Connection


L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
L12
L13
L14
L15
L16
L17
L18
L19
L20
L21
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64
74
84
94
104
114
124
134
144
154
164
12
22
32
42
52
62
72
82
92
102
112
122
132
142
152
162
+
−
11
21
31
41
51
61
71
81
91
101
111
121
131
141
151
161
AC
(DC power also possible)
Independent common also possible
24 VDC
(Power supply)

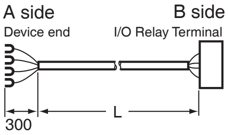
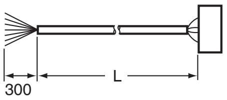
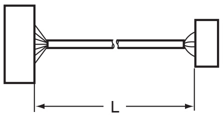
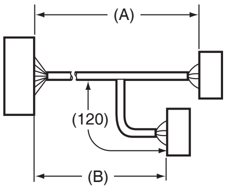
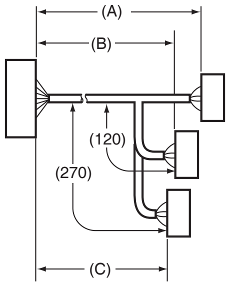
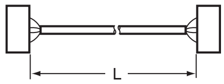
Note: The above diagram shows the Unit mounted to a G2R-1-S.
When mounting to a G3R-OA☐-UTU or G3RZ-201SLN, pins 11 to 14 are output terminals.
When mounting to a G3R-OD☐-UTU, pin 14 is a plus terminal and pin 11 is a minus terminal. When mounting to G3RZ-201SLN, there is no polarity.

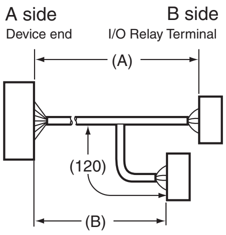
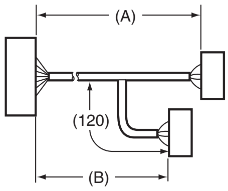
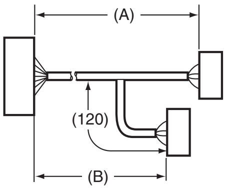
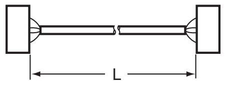
Safety Precautions

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

Connecting Cables

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

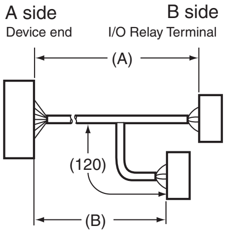
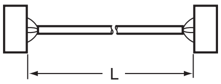
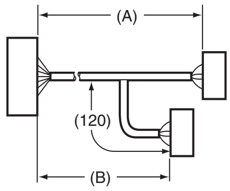
Type	Name	I/O Classification	Appearance	Cable length L (mm)	Models
Various devices	Cables with Loose Wires and Crimp Terminals XW2Z-RY☐C	16 I/O points	 A side Device end B side I/O Relay Terminal 300 L	1,000	**XW2Z-RY100C**
				1,500	**XW2Z-RY150C**
				2,000	**XW2Z-RY200C**
				3,000	**XW2Z-RY300C**
				5,000	**XW2Z-RY500C**
	Cables with Loose Wires XW2Z-RA☐C	16 I/O points		2,000	**XW2Z-RA200C**
				5,000	**XW2Z-RA500C**
Fujitsu/Otax connectors (24 pins)	Cables with Connectors (1:1) XW2Z-R☐C	16 I/O points		1,000	**XW2Z-R100C**
				1,500	**XW2Z-R150C**
				2,000	**XW2Z-R200C**
				3,000	**XW2Z-R300C**
				5,000	**XW2Z-R500C**
Fujitsu/Otax connectors (40 pins)	Cables with Connectors (1:2) XW2Z-RI☐C-☐ XW2Z-RO☐C-☐	32 input points	 Straight length (without bends)	(A) 1,000 (B) 750	**XW2Z-RI100C-75**
				(A) 1,500 (B) 1,250	**XW2Z-RI150C-125**
				(A) 2,000 (B) 1,750	**XW2Z-RI200C-175**
				(A) 3,000 (B) 2,750	**XW2Z-RI300C-275**
				(A) 5,000 (B) 4,750	**XW2Z-RI500C-475**
		32 output points		(A) 1,000 (B) 750	**XW2Z-RO100C-75**
				(A) 1,500 (B) 1,250	**XW2Z-RO150C-125**
				(A) 2,000 (B) 1,750	**XW2Z-RO200C-175**
				(A) 3,000 (B) 2,750	**XW2Z-RO300C-275**
				(A) 5,000 (B) 4,750	**XW2Z-RO500C-475**
Fujitsu/Otax connectors (56 pins)	Cables with Connectors (1:3) XW2Z-R☐C-☐-☐	48 I/O points	 Straight length (without bends)	(A) 1,500 (B) 1,250 (C) 1,000	**XW2Z-R150C-125-100**
				(A) 2,000 (B) 1,750 (C) 1,500	**XW2Z-R200C-175-150**
				(A) 3,000 (B) 2,750 (C) 2,500	**XW2Z-R300C-275-250**
MIL connectors (20 pins)	Cables with Connectors (1:1) XW2Z-RI☐C XW2Z-RO☐C	16 I/O points		250	**XW2Z-RI25C**
				500	**XW2Z-RI50C**
				250	**XW2Z-RO25C**
				500	**XW2Z-RO50C**

Type	Name	I/O Classification	Appearance	Cable length L (mm)		Models
MIL connectors (40 pins)	Cables with Connectors (1:2) XW2Z-RO□-□-D1, XW2Z-RI□-□-D1, XW2Z-RI□-□-D2, XW2Z-RM□-□-D1 *1, XW2Z-RM□-□-D2 *1	32 I/O points	 A side B side Device end I/O Relay Terminal (A) (120) (B) Straight length (without bends)	(A) 500	(B) 250	**XW2Z-RO50-25-D1**
				(A) 750	(B) 500	**XW2Z-RO75-50-D1**
				(A) 1,000	(B) 750	**XW2Z-RO100-75-D1**
				(A) 1,500	(B) 1,250	**XW2Z-RO150-125-D1**
				(A) 2,000	(B) 1,750	**XW2Z-RO200-175-D1**
				(A) 3,000	(B) 2,750	**XW2Z-RO300-275-D1**
				(A) 5,000	(B) 4,750	**XW2Z-RO500-475-D1**
				(A) 500	(B) 250	**XW2Z-RI50-25-D1**
				(A) 750	(B) 500	**XW2Z-RI75-50-D1**
				(A) 1,000	(B) 750	**XW2Z-RI100-75-D1**
				(A) 1,500	(B) 1,250	**XW2Z-RI150-125-D1**
				(A) 2,000	(B) 1,750	**XW2Z-RI200-175-D1**
				(A) 3,000	(B) 2,750	**XW2Z-RI300-275-D1**
				(A) 5,000	(B) 4,750	**XW2Z-RI500-475-D1**
				(A) 500	(B) 250	**XW2Z-RI50-25-D2**
				(A) 750	(B) 500	**XW2Z-RI75-50-D2**
		16 inputs and 16 outputs (32 I/O points)		(A) 500	(B) 250	**XW2Z-RM50-25-D1**
				(A) 750	(B) 500	**XW2Z-RM75-50-D1**
Mitsubishi Electric PLCs with 32-point connectors (1:2) *2	Mitsubishi Electric PLC Connecting Cables XW2Z-RI□C-□-MN XW2Z-RO□C-□-MN	32 input points	 Straight length (without bends)	(A) 1,000	(B) 750	**XW2Z-RI100C-75-MN**
				(A) 1,500	(B) 1,250	**XW2Z-RI150C-125-MN**
				(A) 2,000	(B) 1,750	**XW2Z-RI200C-175-MN**
				(A) 3,000	(B) 2,750	**XW2Z-RI300C-275-MN**
		32 output points		(A) 1,000	(B) 750	**XW2Z-RO100C-75-MN**
				(A) 1,500	(B) 1,250	**XW2Z-RO150C-125-MN**
				(A) 2,000	(B) 1,750	**XW2Z-RO200C-175-MN**
				(A) 3,000	(B) 2,750	**XW2Z-RO300C-275-MN**
Schneider Electric PLCs with 32-point connectors (1:2) Applicable models: For inputs: 140 DDI 353 00 For outputs: 140 DDO 353 00	Schneider Electric PLC Connecting Cables XW2Z-R□C-SCH-□	32 input points	 Straight length (without bends)	500		**XW2Z-R050C-SCH-A**
				1,000		**XW2Z-R100C-SCH-A**
				2,000		**XW2Z-R200C-SCH-A**
				3,000		**XW2Z-R300C-SCH-A**
				5,000		**XW2Z-R500C-SCH-A**
		32 output points		500		**XW2Z-R050C-SCH-B**
				1,000		**XW2Z-R100C-SCH-B**
				2,000		**XW2Z-R200C-SCH-B**
				3,000		**XW2Z-R300C-SCH-B**
				5,000		**XW2Z-R500C-SCH-B**
Schneider Electric PLCs with 16-point connectors (1:1) Applicable models: For inputs: BMX DDI 1602 For outputs: BMX DDO 1602		16 input points		500		**XW2Z-R050C-SCH-C**
				1,000		**XW2Z-R100C-SCH-C**
				2,000		**XW2Z-R200C-SCH-C**
				3,000		**XW2Z-R300C-SCH-C**
				5,000		**XW2Z-R500C-SCH-C**
		16 output points		500		**XW2Z-R050C-SCH-D**
				1,000		**XW2Z-R100C-SCH-D**
				2,000		**XW2Z-R200C-SCH-D**
				3,000		**XW2Z-R300C-SCH-D**
				5,000		**XW2Z-R500C-SCH-D**

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

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

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

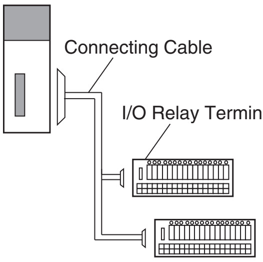
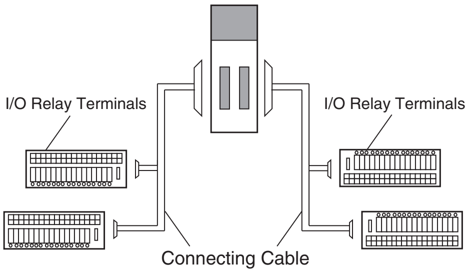
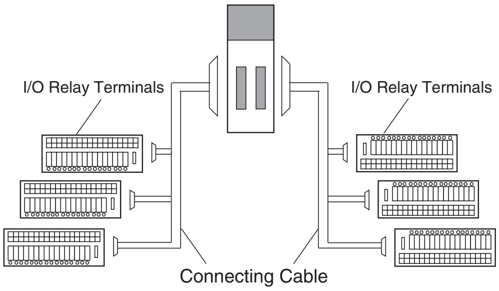
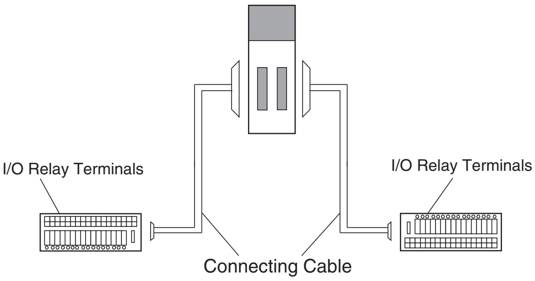
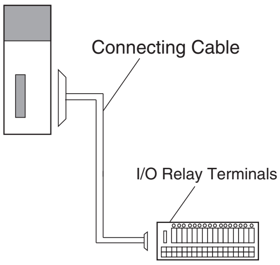
Type	Name	I/O Classification	Appearance	Cable length L (mm)	Models
Siemens PLCs with 32-point connectors (1:2) Applicable models: For inputs: 6ES7 321-1BL00-0AA0 For outputs: 6ES7 322-1BL00-0AA0	Siemens PLC Connecting Cables XW2Z-R□C-SIM-□	32 input points	 A side Device end B side I/O Relay Terminal (A) (120) (B) Straight length (without bends)	500	**XW2Z-R050C-SIM-A**
				1,000	**XW2Z-R100C-SIM-A**
				2,000	**XW2Z-R200C-SIM-A**
				3,000	**XW2Z-R300C-SIM-A**
				5,000	**XW2Z-R500C-SIM-A**
		32 output points		500	**XW2Z-R050C-SIM-B**
				1,000	**XW2Z-R100C-SIM-B**
				2,000	**XW2Z-R200C-SIM-B**
				3,000	**XW2Z-R300C-SIM-B**
				5,000	**XW2Z-R500C-SIM-B**
Siemens PLCs with 16-point connectors (1:1) Applicable models: For inputs: 6ES7 321-1BH02-0AA0		16 input points		500	**XW2Z-R050C-SIM-C**
				1,000	**XW2Z-R100C-SIM-C**
				2,000	**XW2Z-R200C-SIM-C**
				3,000	**XW2Z-R300C-SIM-C**
				5,000	**XW2Z-R500C-SIM-C**
Siemens PLCs with 32-point connectors (1:2) Applicable models: For inputs: 6ES7 421-1BL-0AA0 For outputs: 6ES7 422-1BL-0AA0		32 input points	 Straight length (without bends)	500	**XW2Z-R050C-SIM-D**
				1,000	**XW2Z-R100C-SIM-D**
				2,000	**XW2Z-R200C-SIM-D**
				3,000	**XW2Z-R300C-SIM-D**
				5,000	**XW2Z-R500C-SIM-D**
		32 output points		500	**XW2Z-R050C-SIM-E**
				1,000	**XW2Z-R100C-SIM-E**
				2,000	**XW2Z-R200C-SIM-E**
				3,000	**XW2Z-R300C-SIM-E**
				5,000	**XW2Z-R500C-SIM-E**

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

Combinations of Connections

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

Connection Patterns

Pattern	Configuration
A	 Connecting Cable I/O Relay Terminals
B	 I/O Relay Terminals I/O Relay Terminals Connecting Cable
D	 I/O Relay Terminals I/O Relay Terminals Connecting Cable
E	 I/O Relay Terminals I/O Relay Terminals Connecting Cable
F	 Connecting Cable I/O Relay Terminals

List of Combinations with the OMRON PLC NX Series

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

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

List of Combinations with the OMRON PLC CJ Series

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

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

List of Combinations with the OMRON PLC CS Series

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

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

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

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

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

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

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

✻ The box □ is replaced by the cable length. For details on the types, refer to page 13.

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