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CJ-series Input Units
CJ1W-ID/IA

A Wide Range of Basic Input Units for High Speed Input and Different Applications

- Receive ON/OFF signals from external devices into the PLC System to update I/O memory in the CPU Unit.
- New high-speed input models CJ1W-ID212 and CJ1W-ID233 are now available. These units can help to increase system throughput.

CJ1W-ID212   **CJ1W-ID233**

Features

- High-speed input models are available, meeting versatile applications.
     ON Response Time: 15μs, OFF Response Time: 90μs
- Use 24-VDC, 100-VAC, and 200-VAC models to connect to devices with different types of outputs.
- The 24-VDC models can be connected to devices with either NPN or PNP outputs. There is no need to select the polarity. *1
- A digital filter in the Unit can be set from 0 to 32 ms to reduce the influence of external noise.
- Either a Fujitsu or MIL connector interface can be used. *2
- Several models of Terminal Block Conversion Units are available, making it easy to connect to external devices.

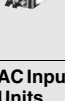*1. The same polarity is used for the same common.
*2. For models with 32 or 64 inputs.

Ordering Information

International Standards

- The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, and CE: EC Directives.
- Contact your OMRON representative for further details and applicable conditions for these standards.

Input Units

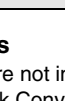| Unit type	Product name	Specifications					Current consumption (A)		Model	Standards
		I/O points	Input voltage and current	Commons	External connection	No. of words allocated	5 V	24 V		
CJ1 Basic I/O Units	DC Input Units	8 inputs	12 to 24 VDC, 10 mA	Independent contacts	Removable terminal block	1 word	0.09	–	**CJ1W-ID201**	UC1, N, L, CE
		16 inputs	24 VDC, 7 mA	16 points, 1 common	Removable terminal block	1 word	0.08	–	**CJ1W-ID211**	
		16 inputs (High speed)	24 VDC, 7 mA	16 points, 1 common	Removable terminal block	1 word	0.13	–	**CJ1W-ID212**	N, L, CE
		32 inputs	24 VDC, 4.1 mA	16 points, 1 common	Fujitsu connector	2 words	0.09	–	**CJ1W-ID231**	UC1, N, L, CE
		32 inputs	24 VDC, 4.1 mA	16 points, 1 common	MIL connector	2 words	0.09	–	**CJ1W-ID232**	
		32 inputs (High speed)	24 VDC, 4.1 mA	16 points, 1 common	MIL connector	2 words	0.20	–	**CJ1W-ID233**	N, L, CE
		64 inputs	24 VDC, 4.1 mA	16 points, 1 common	Fujitsu connector	4 words	0.09	–	**CJ1W-ID261**	UC1, N, L, CE
		64 inputs	24 VDC, 4.1 mA	16 points, 1 common	MIL connector	4 words	0.09	–	**CJ1W-ID262**	
	AC Input Units	8 inputs	200 to 24 VAC, 10 mA (200 V, 50 Hz)	8 points, 1 common	Removable Terminal Block	1 words	0.08	–	**CJ1W-IA201**	
		16 inputs	100 to 120 VAC, 7 mA (100 V, 50 Hz)	16 points, 1 common	Removable Terminal Block	1 words	0.09	–	**CJ1W-IA111**	

Accessories

Connectors are not included for models with connectors. Either use one of the applicable connector listed below or use an applicable Connector-Terminal Block Conversion Unit or I/O Relay Terminal. For details on wiring methods, refer to *External Interface*.

Applicable Connectors

Fujitsu Connectors for 32-input, 32-output, 64-input, 64-output, 32-input/32-output, and 16-input/16-output Units

Name	Connection	Remarks		Applicable Units	Model	Standards
40-pin Connectors	Soldered	FCN-361J040-AU FCN-360C040-J2	Connector Connector Cover	Fujitsu Connectors: CJ1W-ID231(32 inputs): 1 per Unit CJ1W-ID261 (64 inputs): 2 per Unit CJ1W-OD231 (32 outputs):1 per Unit CJ1W-OD261 (64 outputs): 2 per Unit CJ1W-MD261 (32 inputs, 32 outputs): 2 per Unit	**C500-CE404**	–
	Crimped	FCN-363J040 FCN-363J-AU FCN-360C040-J2	Housing Contactor Connector Cover		**C500-CE405**	
	Pressure welded	FCN-367J040-AU/F			**C500-CE403**	
24-pin Connectors	Soldered	FCN-361J024-AU FCN-360C024-J2	Connector Connector Cover	Fujitsu Connectors: CJ1W-MD231 (16 inputs, 16 outputs): 2 per Unit	**C500-CE241**	
	Crimped	FCN-363J024 FCN-363J-AU FCN-360C024-J2	Housing Contactor Connector Cover		**C500-CE242**	
	Pressure welded	FCN-367J024-AU/F			**C500-CE243**	

MIL Connectors for 32-input, 32-output, 64-input, 64-output, 32-input/32-output, and 16-input/16-output Units

Name	Connection	Remarks	Applicable Units	Model	Standards
40-pin Connectors	Pressure welded	FRC5-AO40-3TOS	MIL Connectors: CJ1W-ID232/233 (32 inputs): 1 per Unit CJ1W-OD232/233/234 (32 outputs):1 per Unit CJ1W-ID262 (64 inputs): 2 per Unit CJ1W-OD262/263 (64 outputs): 2 per Unit CJ1W-MD263/563 (32 inputs, 32 outputs): 2 per Unit	**XG4M-4030-T**	–
	Crimped	–		**XG5N-401***	
20-pin Connectors	Pressure welded	FRC5-AO20-3TOS	MIL Connectors: CJ1W-MD232/233 (16 inputs, 16 outputs): 2 per Unit	**XG4M-2030-T**	–
	Crimped	–		**XG5N-201***	

* Crimp Contacts are also required. Refer to page 20 for details.

Applicable Connector-Terminal Block Conversion Units

Type	Series	I/O	Number of poles	Wiring method	Terminal type	Size Depth (mm)	Size Height (mm)	Size Width (mm)	Mounting DIN Track	Mounting Screws	Common terminals	Bleeder resistance	Indicators	I/O Units	Model	Standards
PLCs	XW2R	Out put	34	Phillips screw	M3	50	48.35	130.7	Yes	Yes	No	No	No	CJ1W-ID231 CJ1W-ID261	**XW2R-J34G-C1**	–
														CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	**XW2R-J34G-C2**	
				Slotted screw (rise up)	M3 (European type)	50	45.11	98.5						CJ1W-ID231 CJ1W-ID261	**XW2R-E34G-C1**	
														CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	**XW2R-E34G-C2**	
				Push-in spring	Clamp	50	45.11	98.5						CJ1W-ID231 CJ1W-ID261	**XW2R-P34G-C1**	
														CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	**XW2R-P34G-C2**	

Note: For the combination of Input Units with Connector-Terminal Block Conversion Units, refer to *2. Connecting Connector-Terminal Block Conversion Units*.

Applicable I/O Relay Terminals

Type	Series		Specifications						Size (horizontal mounting)			Mounting		Model	Standards
			Classification	Polarity	Number of points	Rated ON current at contacts	Operation indicators	Terminal block for power supply wiring	Horizontal (mm)	Vertical (mm)	Height (mm)	DIN Track	Screws		
Space-saving	G70D	Vertical type G70D-V	Relay outputs	NPN	16 (SPST-NO × 16)	5A or 3A	Yes	Expandable	135	46	81	Yes	Yes	**G70D-VSOC16**	U, C, CE
			MOSFET relay outputs			0.3A								**G70D-VFOM16**	
		Flat type G70D	Outputs	Relay outputs	NPN	8 (SPST-NO × 8)	5A	Yes	–	68	93	44	Yes	Yes	**G70D-SOC08**	–
					16 (SPST-NO × 16)	3A			156	51	39			**G70D-SOC16**	–
					PNP	16 (SPST-NO × 16)	3A							**G70D-SOC16-1**	
				MOSFET relay outputs	NPN	16 (SPST-NO × 16)	0.3A								**G70D-FOM16**	–
					PNP									**G70D-FOM16-1**	
High-capacity, space-saving	G70R		Outputs	Relay outputs	NPN	8 (SPST-NO × 8)	10A	Yes	–	136	93	55	Yes	Yes	**G70R-SOC08**	–
Standard	G7TC		Inputs	AC inputs	NPN	16 (SPST-NO × 16)	1A	Yes	–	182	85	68	Yes	–	**G7TC-IA16**	U, C
				DC inputs											**G7TC-ID16**	
			Outputs	Relay outputs	NPN	8 (SPST-NO × 8)	5A			102					**G7TC-OC08**	
						16 (SPST-NO × 16)				182					**G7TC-OC16**	
					PNP	16 (SPST-NO × 16)									**G7TC-OC16-1**	–
High-capacity socket	G70A (Socket only)		Outputs	Relay outputs	NPN	16 (SPDT × 16 possible with G2R Relays)	10 A (Terminal block allowable current)	No	–	234	75	64	Yes	–	**G70A-ZOC16-3** (Socket only) + Relay/SSR/ MOSFET Relay/ Timer	U, C, CE
					PNP										**G70A-ZOC16-4** (Socket only) + Relay/SSR/ MOSFET Relay/ Timer	

Note: For the combination of Input Units with I/O Relay Terminal and Connecting Cables, refer to *3. Connecting I/O Relay Terminals*.
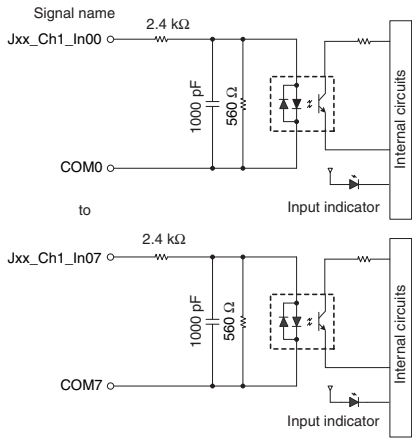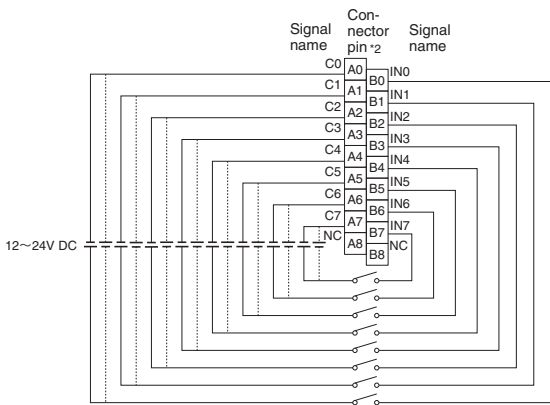
Mountable Racks

Model	NJ system		CJ system (CJ1, CJ2)		CP1H system	NSJ system	
	CPU Rack	Expansion Rack	CPU Rack	Expansion Backplane	CP1H PLC	NSJ Controller	Expansion Backplane
CJ1W-ID201	10 Units	10 Units (per Expansion Rack)	10 Units	10 Units (per Expansion Backplane)	Not supported	Not supported	10 Units (per Expansion Backplane)
CJ1W-ID211							
CJ1W-ID212							
CJ1W-ID231							
CJ1W-ID232							
CJ1W-ID233							
CJ1W-ID261							
CJ1W-ID262							
CJ1W-IA201							
CJ1W-IA111							

Specifications

CJ1W-ID201 DC Input Unit (12 to 24-VDC, 8 Points)

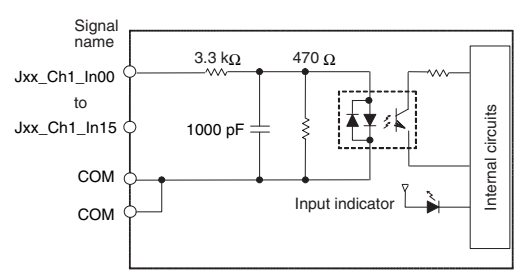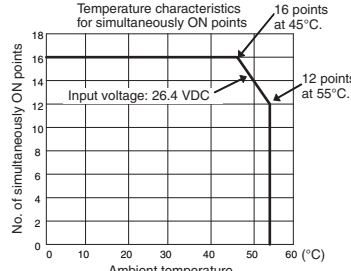| Name	8-point DC Input Unit with Terminal Block
Model	CJ1W-ID201
Rated Input Voltage	12 to 24 VDC
Rated Input Voltage Range	10.2 to 26.4 VDC
Input Impedance	2.4 kΩ
Input Current	10 mA typical (at 24 VDC)
ON Voltage/ON Current	8.8 VDC min./3 mA min.
OFF Voltage/OFF Current	3 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
Number of Circuits	8 independent circuits
Number of Simultaneously ON Points	100% simultaneously ON
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	80 mA max.
Weight	110 g max.
Circuit Configuration	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	 • Polarity of the input power supply can be connected in either direction. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

*1. The ON response time will be 20 μs maximum and OFF response time will be 400 μs maximum even if the response time are set to 0 ms due to internal element delays.
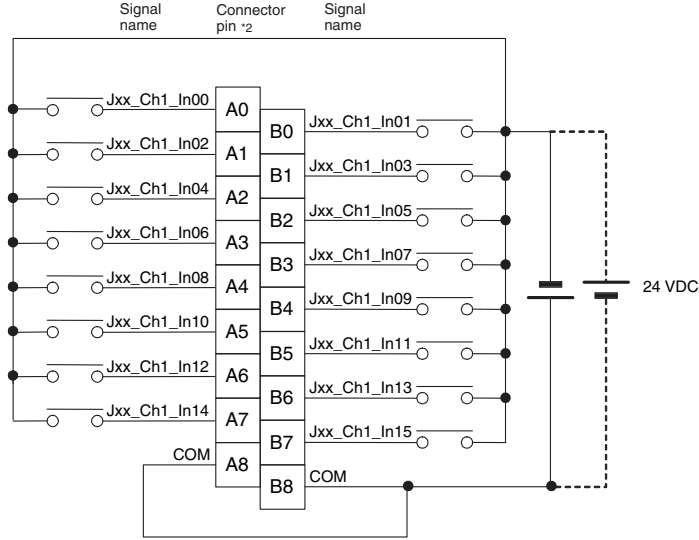
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

Note: Although 16 I/O bits (1 word) are allocated, only 8 of these can be used for external I/O.

6

CJ1W-ID211 DC Input Unit (24 VDC, 16 Points)

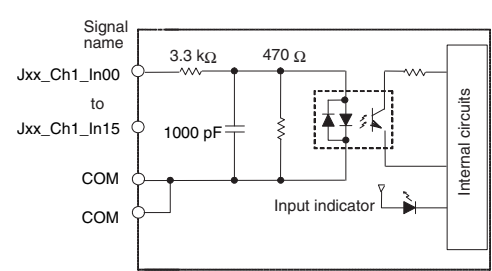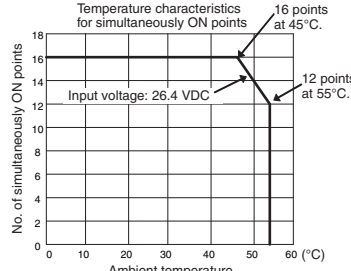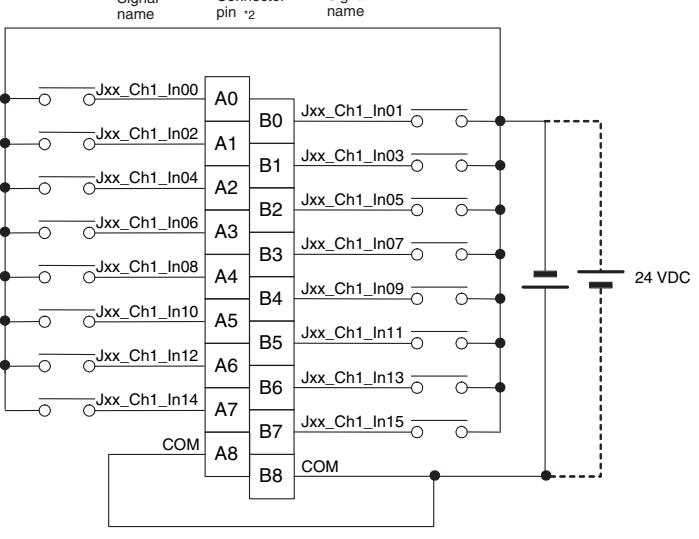| Name	16-point DC Input Unit with Terminal Block
Model	CJ1W-ID211
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	3.3 kΩ
Input Current	7 mA typical (at 24 VDC)
ON Voltage/ON Current	14.4 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
Number of Circuits	16 (16 points/common, 1 circuit)
Number of Simultaneously ON Points	100% simultaneously ON (at 24 VDC) (Refer to the following illustration.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	80 mA max.
Weight	110 g max.
Circuit Configuration	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	 • Polarity of the input power supply can be connected in either direction. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

*1. The ON response time will be 20 μs maximum and OFF response time will be 400 μs maximum even if the response time are set to 0 ms due to internal element delays.

*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

CJ1W-ID212 DC Input Unit (24 VDC, 16 Points)

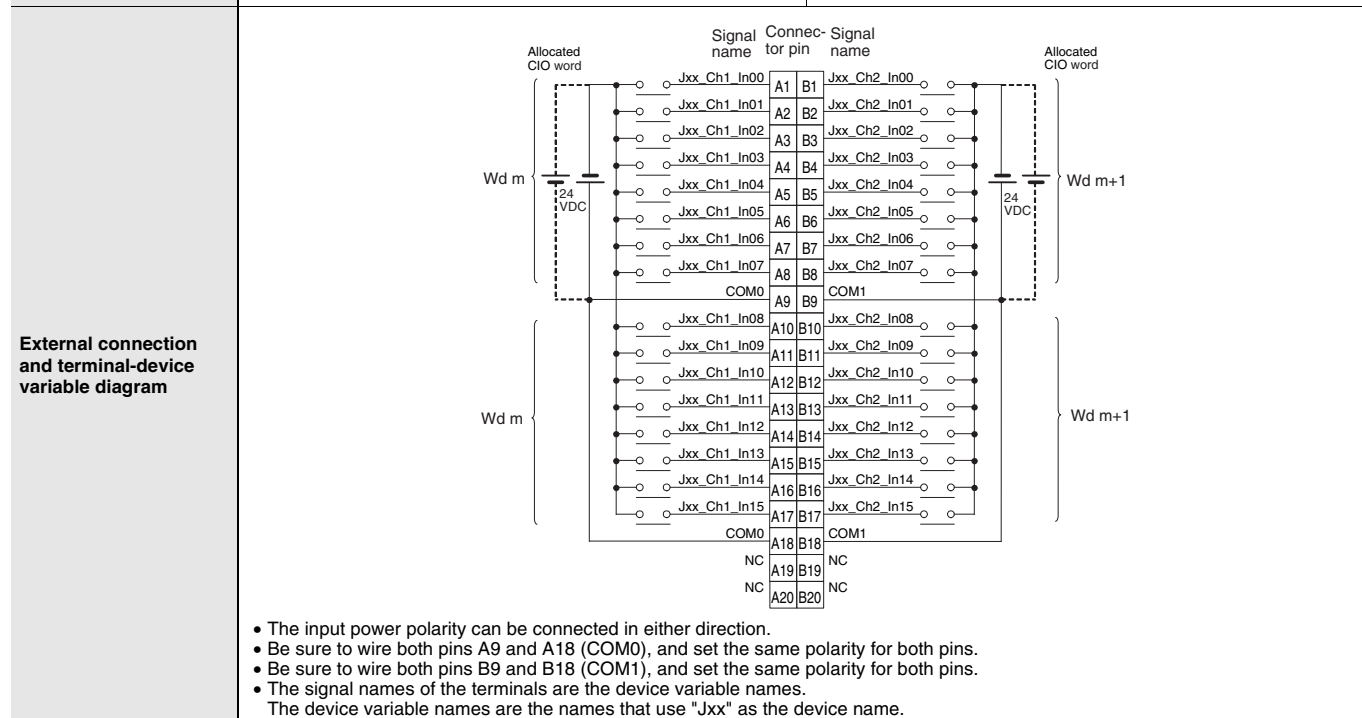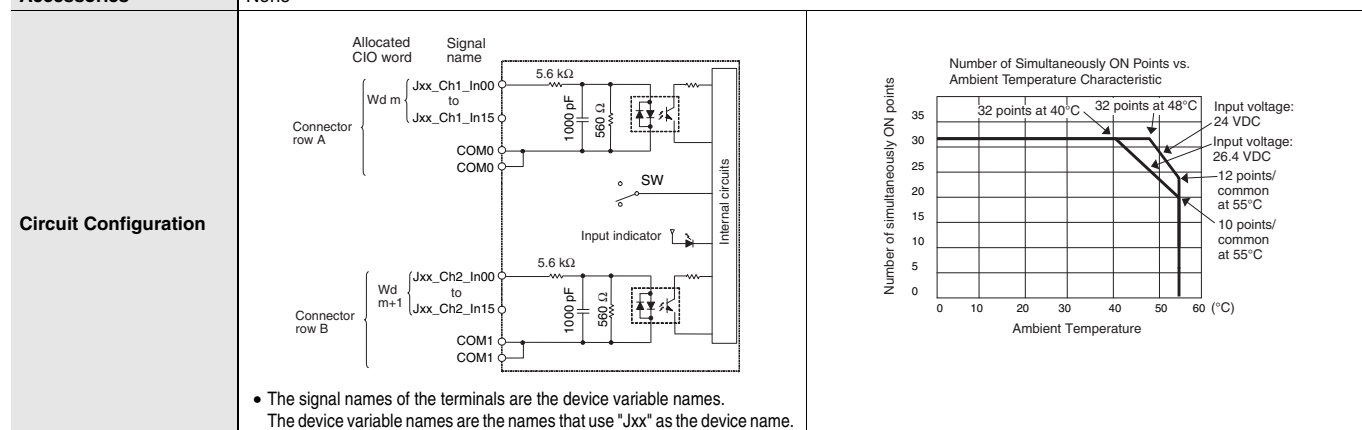| Name	16-point DC Input Unit with Terminal Block
Model	CJ1W-ID212
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	3.3 kΩ
Input Current	7 mA typical (at 24 VDC)
ON Voltage/ON Current	14.4 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
Number of Circuits	16 (16 points/common, 1 circuit)
Number of Simultaneously ON Points	100% simultaneously ON (at 24 VDC) (Refer to the following illustration.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	130 mA max.
Weight	110 g max.
Circuit Configuration	 • The signal names of the terminals are the device variable names. 　The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	 • Polarity of the input power supply can be connected in either direction. • The signal names of the terminals are the device variable names. 　The device variable names are the names that use "Jxx" as the device name.

*1. The ON response time will be 15 µs maximum and OFF response time will be 90 µs maximum even if the response time are set to 0 ms due to internal element delays.

*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

CJ1W-ID231 DC Input Unit (24 VDC, 32 Points)

Name	32-point DC Input Unit with Fujitsu Connector
Model	CJ1W-ID231
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 kΩ
Input Current	4.1 mA typical (at 24 VDC)
ON Voltage/ON Current	19.0 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Number of Circuits	32 (16 points/common, 2 circuits)
Number of Simultaneously ON Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	90 mA max.
Weight	70 g max.
Accessories	None

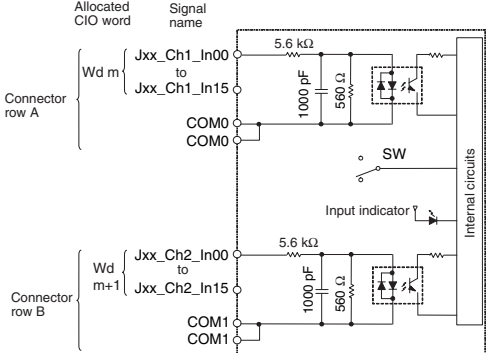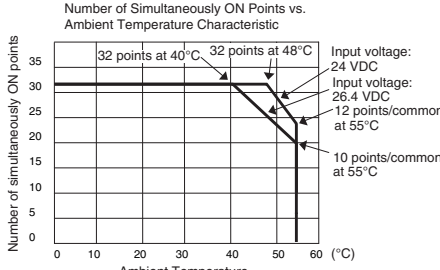|	
Circuit Configuration	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	 • The input power polarity can be connected in either direction. • Be sure to wire both pins A9 and A18 (COM0), and set the same polarity for both pins. • Be sure to wire both pins B9 and B18 (COM1), and set the same polarity for both pins. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

* The ON response time will be 20 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.
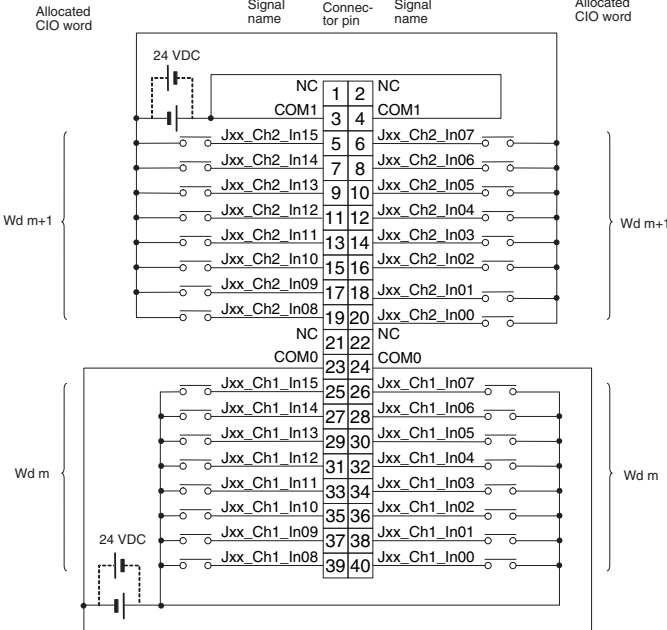
Note: Observe the following restrictions when connecting to a 2-wire sensor.
   • Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
   • Use a sensor with a minimum load current of 3 mA min.
   • Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

CJ1W-ID232 DC Input Unit (24 VDC, 32 Points)

Name	32-point DC Input Unit with MIL Connector
Model	CJ1W-ID232
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 kΩ
Input Current	4.1 mA typical (at 24 VDC)
ON Voltage/ON Current	19.0 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Number of Circuits	32 (16 points/common, 2 circuits)
Number of Simultaneously ON Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	90 mA max.
Weight	70 g max.
Accessories	None

Circuit Configuration

- The signal names of the terminals are the device variable names.
  The device variable names are the names that use "Jxx" as the device name.

External connection and terminal-device variable diagram

- The input power polarity can be connected in either direction.
- Be sure to wire both pins 23 and 24 (COM0), and set the same polarity for both pins.
- Be sure to wire both pins 3 and 4 (COM1), and set the same polarity for both pins.
- The signal names of the terminals are the device variable names.
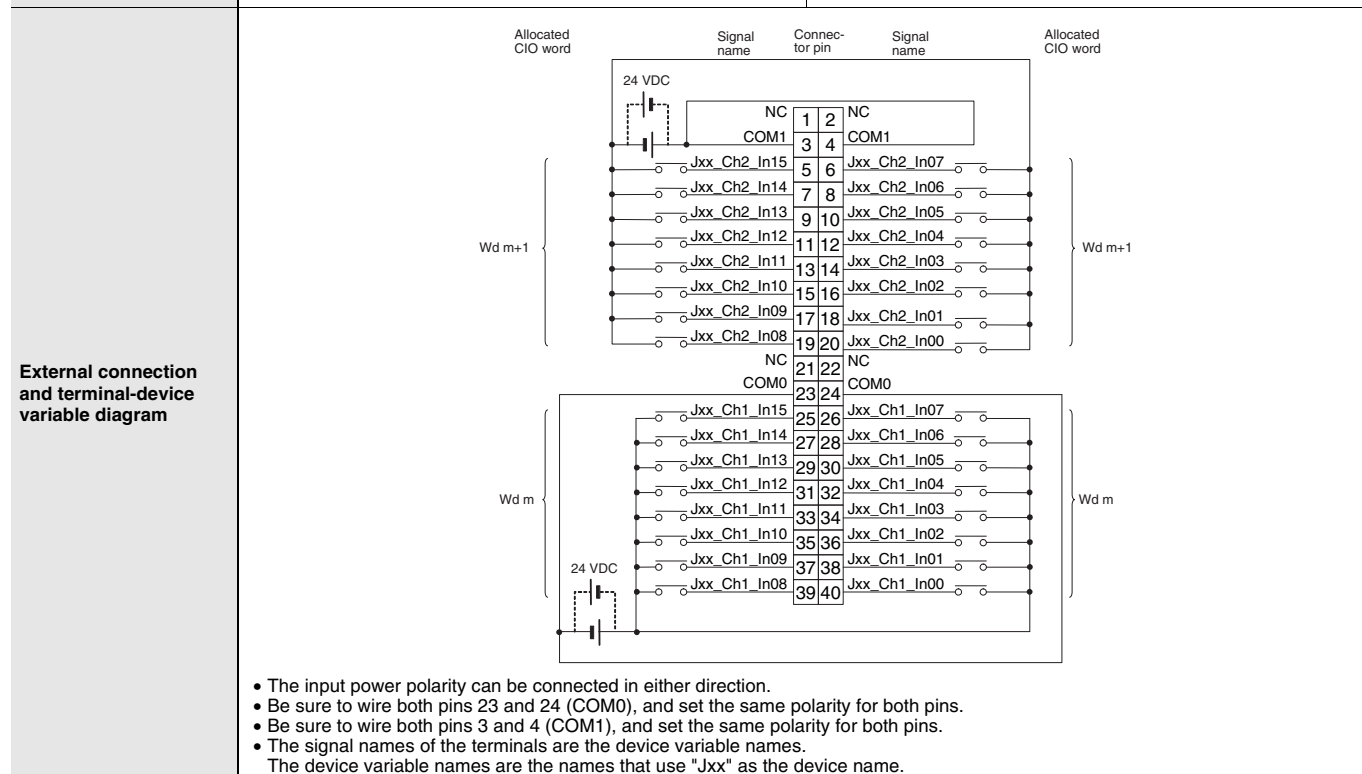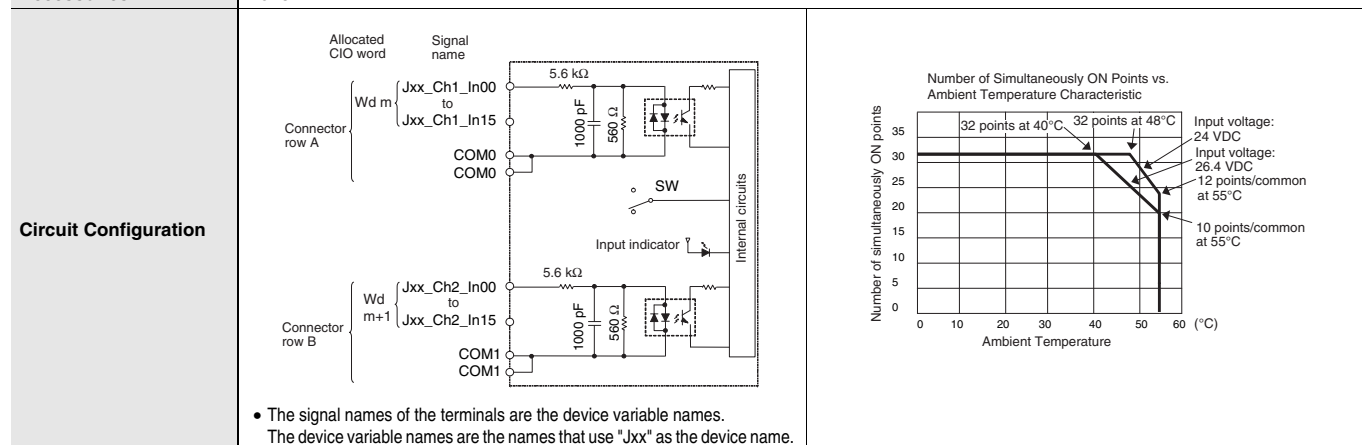 The device variable names are the names that use "Jxx" as the device name.

* The ON response time will be 20 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.

Note: Observe the following restrictions when connecting to a 2-wire sensor.
- Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
- Use a sensor with a minimum load current of 3 mA min.
- Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

CJ1W-ID233 DC Input Unit (24 VDC, 32 Points)

Name	32-point DC Input Unit with MIL Connector
Model	CJ1W-ID233
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 kΩ
Input Current	4.1 mA typical (at 24 VDC)
ON Voltage/ON Current	19.0 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Number of Circuits	32 (16 points/common, 2 circuits)
Number of Simultaneously ON Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	200 mA max.
Weight	70 g max.
Accessories	None
Circuit Configuration	
External connection and terminal-device variable diagram	

• The signal names of the terminals are the device variable names.
The device variable names are the names that use "Jxx" as the device name.

• The input power polarity can be connected in either direction.
• Be sure to wire both pins 23 and 24 (COM0), and set the same polarity for both pins.
• Be sure to wire both pins 3 and 4 (COM1), and set the same polarity for both pins.
• The signal names of the terminals are the device variable names.
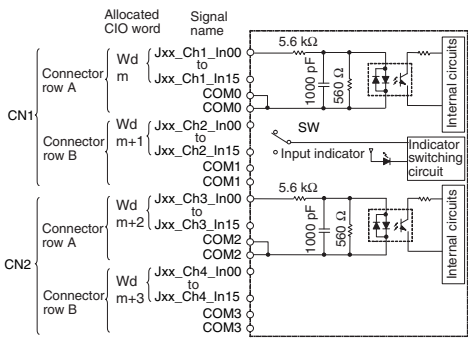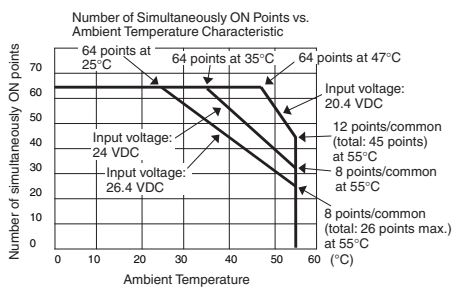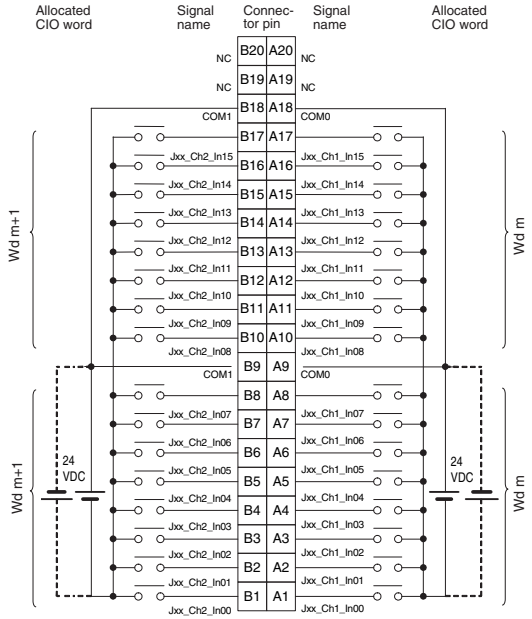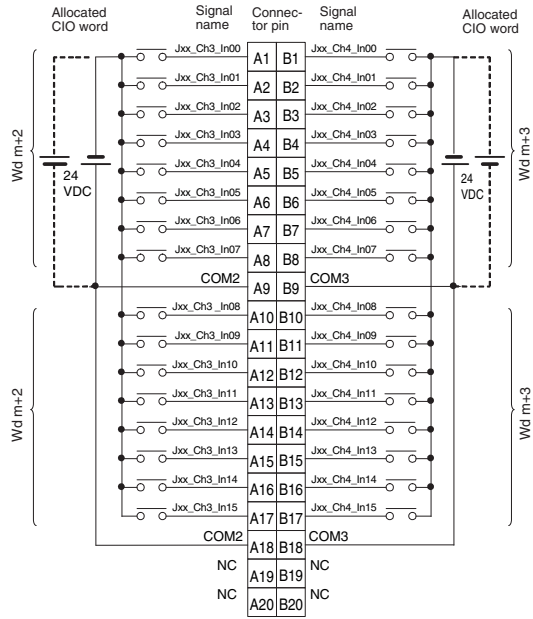The device variable names are the names that use "Jxx" as the device name.

* The ON response time will be 15 μs maximum and OFF response time will be 90 μs maximum even if the response times are set to 0 ms due to internal element delays.

Note: Observe the following restrictions when connecting to a 2-wire sensor.
• Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
• Use a sensor with a minimum load current of 3 mA min.
• Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

CJ1W-ID261 DC Input Unit (24 VDC, 64 Points)

Name	64-point DC Input Unit with Fujitsu Connector
Model	CJ1W-ID261
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 kΩ
Input Current	4.1 mA typical (at 24 VDC)
ON Voltage/ON Current	19.0 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Number of Circuits	64 (16 points/common, 4 circuits)
Number of Simultaneously ON Points	50% (16 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustrations.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	90 mA max.
Weight	110 g max.
Accessories	None

Circuit Configuration

- The signal names of the terminals are the device variable names.
  The device variable names are the names that use "Jxx" as the device name.

Number of Simultaneously ON Points vs. Ambient Temperature Characteristic

External connection and terminal-device variable diagram

CN1

- The input power polarity can be connected in either direction.
- Be sure to wire both pins A9 and A18 (COM0) of CN1, and set the same polarity for both pins.
- Be sure to wire both pins B9 and B18 (COM1) of CN1, and set the same polarity for both pins.
- The signal names of the terminals are the device variable names.
  The device variable names are the names that use "Jxx" as the device name.

CN2

- The input power polarity can be connected in either direction.
- Be sure to wire both pins A9 and A18 (COM2) of CN2, and set the same polarity for both pins.
- Be sure to wire both pins B9 and B18 (COM3) of CN2, and set the same polarity for both pins.
- The signal names of the terminals are the device variable names.
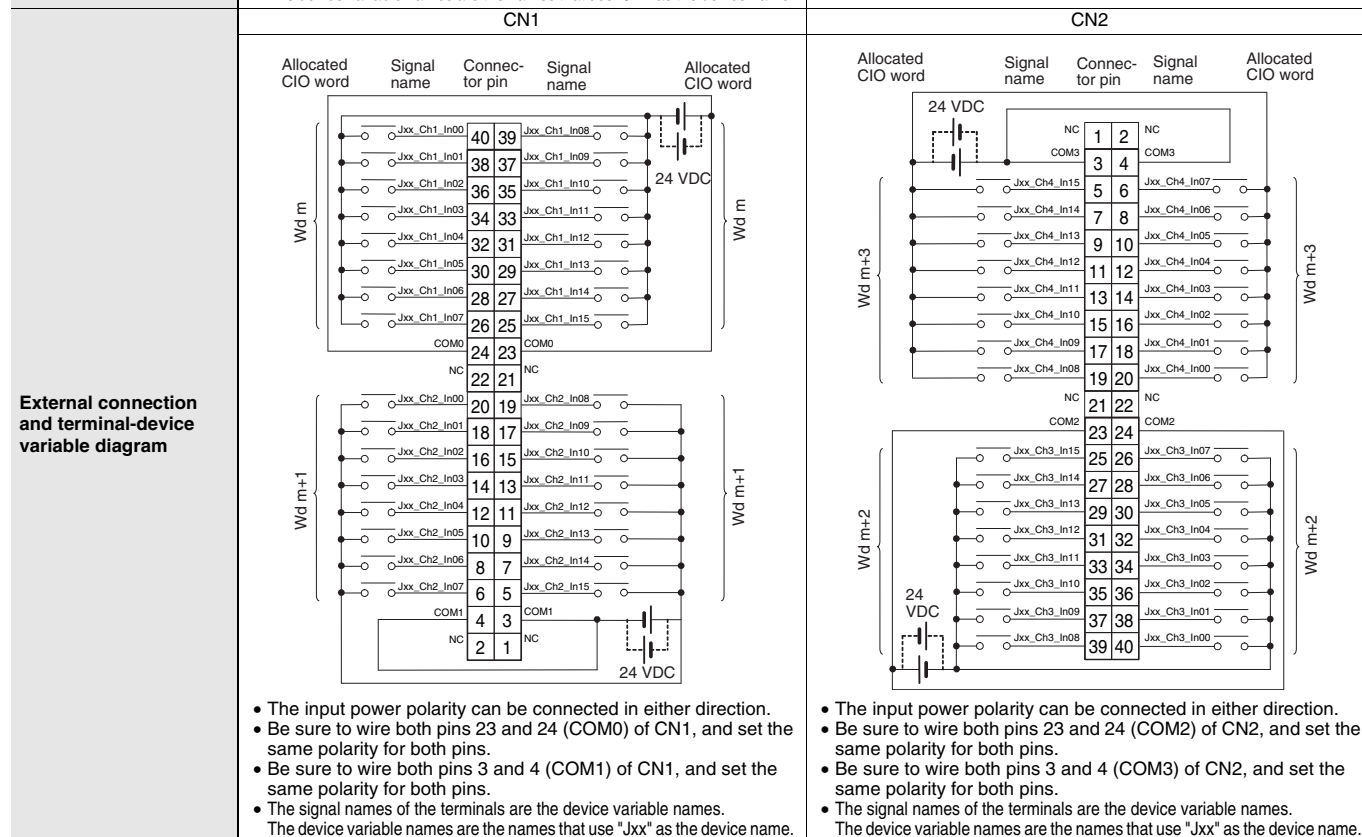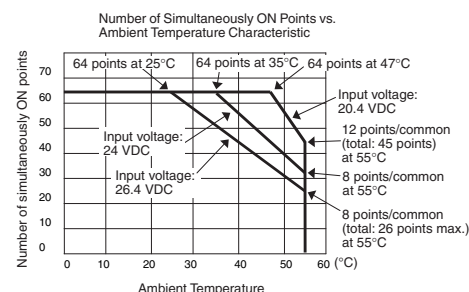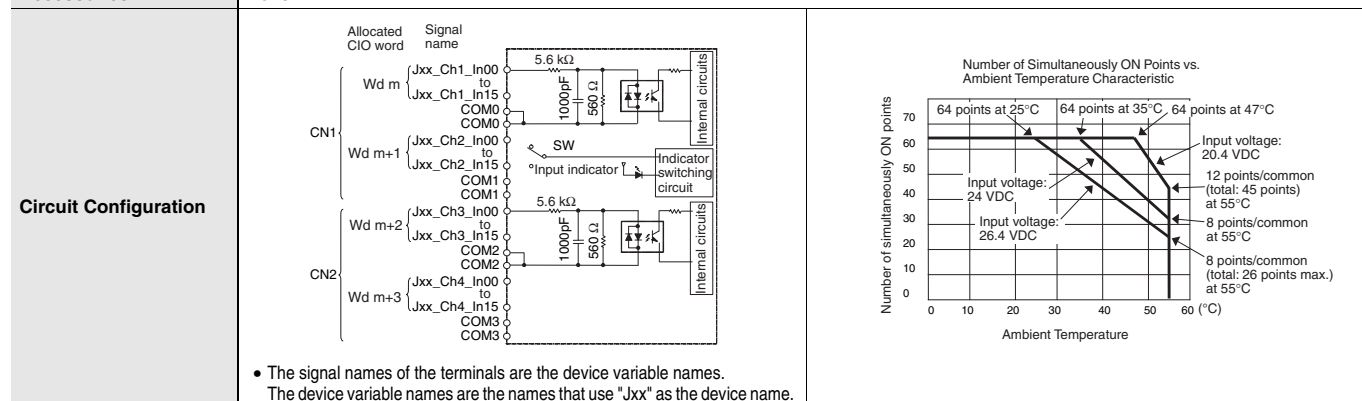 The device variable names are the names that use "Jxx" as the device name.

* The ON response time will be 120 µs maximum and OFF response time will be 400 µs maximum even if the response times are set to 0 ms due to internal element delays.

Note: Observe the following restrictions when connecting to a 2-wire sensor.
- Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
- Use a sensor with a minimum load current of 3 mA min.
- Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

CJ1W-ID262 DC Input Unit (24 VDC, 64 Points)

Name	64-point DC Input Unit with MIL Connector
Model	CJ1W-ID262
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 kΩ
Input Current	4.1 mA typical (at 24 VDC)
ON Voltage/ON Current	19.0 VDC min./3 mA min.
OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Number of Circuits	64 (16 points/common, 4 circuits)
Number of Simultaneously ON Points	50% (8 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustrations.)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (100 VDC)
Dielectric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	90 mA max.
Weight	110 g max.
Accessories	None

Circuit Configuration	• The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	

CN1

CN2

• The input power polarity can be connected in either direction.
• Be sure to wire both pins 23 and 24 (COM0) of CN1, and set the same polarity for both pins.
• Be sure to wire both pins 3 and 4 (COM1) of CN1, and set the same polarity for both pins.
• The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

• The input power polarity can be connected in either direction.
• Be sure to wire both pins 23 and 24 (COM2) of CN2, and set the same polarity for both pins.
• Be sure to wire both pins 3 and 4 (COM3) of CN2, and set the same polarity for both pins.
• The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
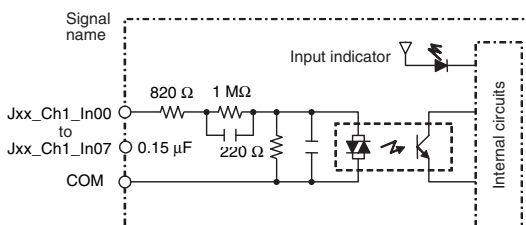
* The ON response time will be 120 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.
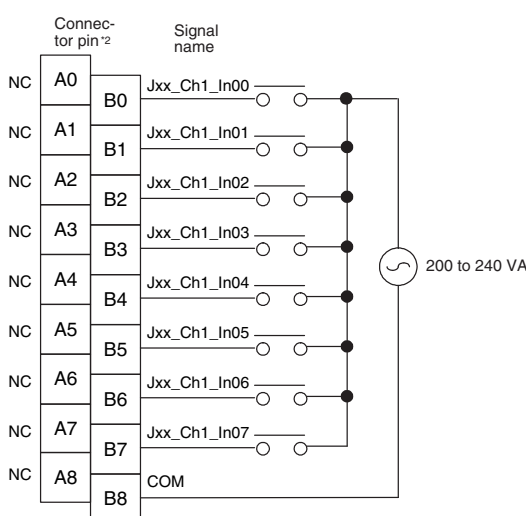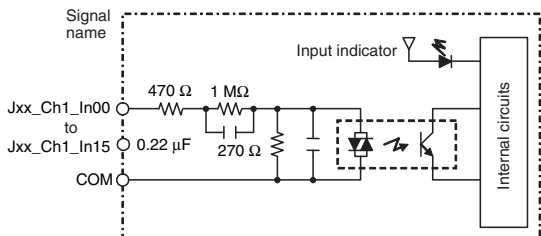
Note: Observe the following restrictions when connecting to a 2-wire sensor.
• Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
• Use a sensor with a minimum load current of 3 mA min.
• Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

CJ1W-IA201 AC Input Unit (200 VAC, 8 Points)

Name	8-point AC Input Unit with Terminal Block
Model	CJ1W-IA201
Rated Input Voltage	200 to 240 VAC 50/60 Hz
Rated Input Voltage Range	170 to 264 VAC
Input Impedance	21 kΩ (50 Hz), 18 kΩ (60 Hz)
Input Current	9 mA typical (at 200 VAC, 50 Hz), 11 mA typical (at 200 VAC, 60 Hz)
ON Voltage/ON Current	120 VAC min./4 mA min.
OFF Voltage/OFF Current	40 VAC max./2 mA max.
ON Response Time	18.0 ms max. (default setting: 8 ms) *1
OFF Response Time	48.0 ms max. (default setting: 8 ms) *1
Number of Circuits	8 (8 points/common, 1 circuit)
Number of Simultaneously ON Points	100% (8 points/common) simultaneously ON
Insulation Resistance	20 MΩ between external terminals and the GR terminal (500 VDC)
Dielectric Strength	2,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	80 mA max.
Weight	130 g max.
Accessories	None
Circuit Configuration	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

*1. Can be set to 0 ms, 0.5 ms, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, or 32ms in the settings. When the response times have been set to 0 ms, the ON response time will be 10 ms maximum and the OFF response time will be 40 ms maximum due to internal element delays.

*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

Note: Although 16 I/O bits (1 word) are allocated, only 8 of these can be used for external I/O.

CJ1W-IA111 AC Input Unit (100 VAC, 16 points)

Name	16-point AC Input Unit with Terminal Block
Model	CJ1W-IA111
Rated input voltage	100 to 120 VAC 50/60 Hz *2
Rated Input Voltage Range	85 to 132 VAC
Input Impedance	14.5 kΩ (50 Hz), 12 kΩ (60 Hz)
Input Current	7 mA typical (at 100 VAC, 50 Hz), 8 mA typical (at 100 VAC, 60 Hz)
ON Voltage/ON Current	70 VAC min./4 mA min
OFF Voltage/OFF Current	20 VAC max./2 mA max
ON Response Time	18 ms max. (default setting: 8 ms) *1
OFF Response Time	48 ms max. (default setting: 8 ms) *1
Number of Circuits	16 (16 points/common, 1 circuit)
Number of Inputs ON Simultaneously	100% simultaneously ON (16 points/common)
Insulation Resistance	20 MΩ between external terminals and the GR terminal (500 VDC)
Dielectric Strength	2,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Internal Current Consumption	90 mA max.
Weight	130 g max.
Accessories	None
Circuit Layout	• The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
External connection and terminal-device variable diagram	• The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

*1. Can be set to 0 ms, 0.5 ms, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, or 32ms in the settings. When the response times have been set to 0 ms, the ON response time will be 10 ms maximum and the OFF response time will be 40 ms maximum due to internal element delays.

*2. Use an input voltage of 90 VAC or higher when connecting 2-wire sensors.

*3. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

Bit Allocations for Input Unit

8-point Input Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	06	IN6/Jxx_Ch1_In06
	07	IN7/Jxx_Ch1_In07
	08	–
	09	–
	:	:
	14	–
	15	–

16-point Input Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15

32-point Input Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
Wd m+1 (Input)	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
	:	:
	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15

64-point Input Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
Wd m+1 (Input)	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
	:	:
	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15
Wd m+2 (Input)	00	IN0/Jxx_Ch3_In00
	01	IN1/Jxx_Ch3_In01
	:	:
	14	IN14/Jxx_Ch3_In14
	15	IN15/Jxx_Ch3_In15
Wd m+3 (Input)	00	IN0/Jxx_Ch4_In00
	01	IN1/Jxx_Ch4_In01
	:	:
	14	IN14/Jxx_Ch4_In14
	15	IN15/Jxx_Ch4_In15

External Interface

8-point/16-point Units (18-point Terminal Blocks)

Model number label

I/O indicators

Connector
Connect to the connector on the next Unit.

Terminal block for
I/O wiring, 18P × 1

		ERR					
0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
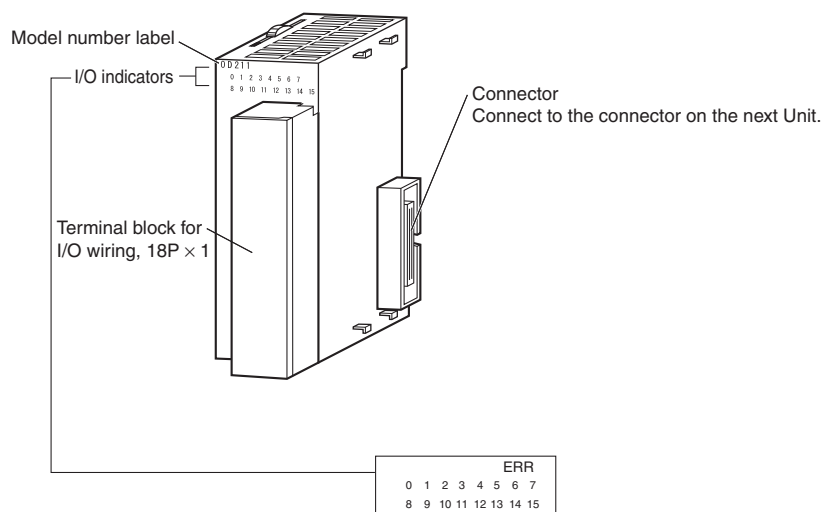
32-point Units (Models with 40-point Fujitsu Connector or MIL Connector)

Model number

I/O indicators

I/O wiring
connector
(40-pin × 1)

Unit with Fujitsu-compatible
Connector

Unit with MIL Connector

Connector
Connected to the connector on the next Unit.

Indicator Switch

1 2

Changes the 16 I/O displayed on the I/O indicators.

	Fujitsu connector	MIL connector
Setting 1	Wd m (Row A on connector)	Bottom of connector
Setting 2	Wd m+1 (Row B on connector)	Top of connector

ERR			
0	1	2	3
4	5	6	7
8	9	10	11
12	13	14	15

Word m
or
m+1

64-point Units (Models with Two 40-point Fujitsu Connectors or MIL Connector)

Model number

Indicator Switch

1   2

Changes the 32 I/O displayed on the I/O indicators.

Setting 1	Wd m and m+1: CN1
Setting 2	Wd m+2 and m+3: CN2

I/O indicators

I/O wiring connector (40-pin × 2)

Unit with Fujitsu-compatible Connector

Unit with MIL Connector

Connector
Connected to the connector on the next Unit.

Word m or m+2

I | 0 1 2 3 4 5 6 7
    8 9 10 11 12 13 14 15

Word m+1 or m+3

II | 0 1 2 3 4 5 6 7
     8 9 10 11 12 13 14 15

Wiring Basic I/O Units with Terminal Blocks

Electric Wires

The following wire gauges are recommended.

Terminal Block Connector	Wire Size
18-terminal	AWG 22 to 18 (0.32 to 0.82 mm^2)

Crimp terminals

Use crimp terminals (M3) having the dimensions shown below.

6.2 mm max.

6.2 mm max.

I/O Unit Wiring Methods

An I/O Unit can be connected to an external device by any of the following three methods.

1. User-provided Cable
An I/O Unit can be directly connected to an external device by using a connector.
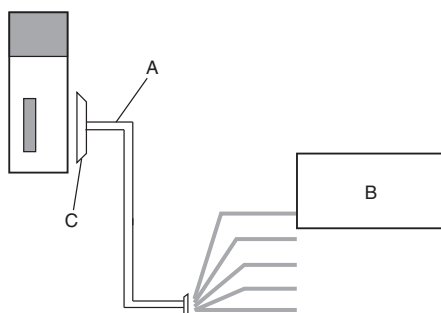
A	User-provided cable
B	External device
C	Connector

2. Connector-Terminal Block Conversion Unit
Use a Connecting Cable to connect to a Connector-Terminal Block Conversion Unit.
Converting the I/O Unit connector to a screw terminal block makes it easy to connect external devices.
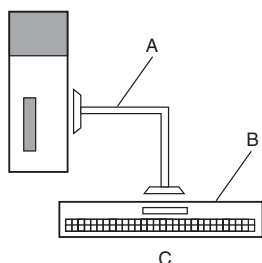
A	Connecting Cable for Connector-Terminal Block Conversion Unit XW2Z
B	Connector-Terminal Block Conversion Unit XW2R
C	Conversion to a screw terminal block

3. I/O Relay Terminal
Use a Connecting Cable to connect to an I/O Relay Terminal.
The I/O specifications can be converted to relay outputs and AC inputs by connecting the I/O Relay Terminal to an I/O Unit.
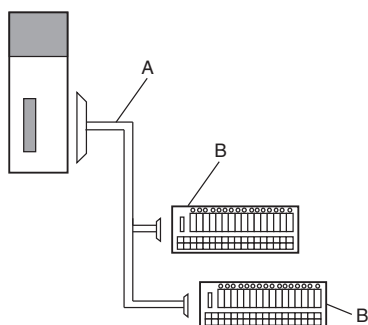
A	G79 I/O Relay Terminal Connecting Cable
B	G7□□ I/O Relay Terminals Or, conversion to relay outputs and AC inputs.

1. Using User-made Cables with Connector

Available Connectors

Use the following connectors when assembling a connector and cable.

32- and 64-point Basic I/O Units with Fujitsu-compatible Connectors
Applicable Units

Model	Specifications	Pins
CJ1W-ID231	Input Unit, 24 VDC, 32 inputs	40
CJ1W-ID261	Input Unit, 24 VDC, 64 inputs	

Applicable Cable-side Connectors

Connection	Pins	OMRON set	Fujitsu parts
Solder-type	40	C500-CE404	Socket: FCN-361J040-AU Connector cover: FCN-360C040-J2
Crimped	40	C500-CE405	Socket: FCN-363J040 Connector cover: FCN-360C040-J2 Contacts: FCN-363J-AU
Pressure-welded	40	C500-CE403	FCN-367J040-AU/F

32- and 64-point Basic I/O Units with MIL Connectors
Applicable Units

Model	Specifications	Pins
CJ1W-ID232 CJ1W-ID233	Input Unit, 24 VDC, 32 inputs	40
CJ1W-ID262	Input Unit, 24 VDC, 64 inputs	

Applicable Cable-side Connectors

Connection	Pins	OMRON set	DDK parts
Pressure-welded	40	XG4M-4030-T *1	FRC5-A040-3T0S
Crimped	40	XG5N-401 *2	HU-40OS2-001
	–	Crimp Contacts for XG5N *3 XG5W-0232 (loose contacts: 100 pieces) XG5W-0232-R (reel contacts: 10,000 pieces)	HU-111S

*1. Socket and Stain Relief set.
*2. Crimp Contacts (XG5W-0232) are sold separately.
*3. Applicable wire size is AWG 28 to 24. For applicable conductor construction and more information, visit the OMRON website at www.ia.omron.com.

Wire Size

We recommend using cable with wire gauges of AWG 28 to 24 (0.08 to 0.2 mm^2). Use cable with external wire diameters of 1.61 mm max.

Crimping Tools

The following models are recommended for crimping tools and pressure-welding tools for Fujitsu connectors.
Tools for Crimped Connectors (Fujitsu Component)

Product Name	Model
Hand Crimping Tool	FCN-363T-T005/H
Contact Withdrawal Tool	FCN-360T-T001/H

Tools for Pressure-welded Connectors (Fujitsu Component)

Product Name	Model
Hand Press	FCN-707T-T101/H
Cable Cutter	FCN-707T-T001/H
Locator Plate	FCN-367T-T012/H

The following models are recommended for tools for OMRON MIL connectors.
Tools for Pressure-welded Connectors (OMRON)
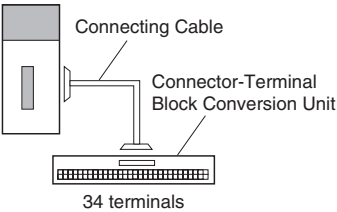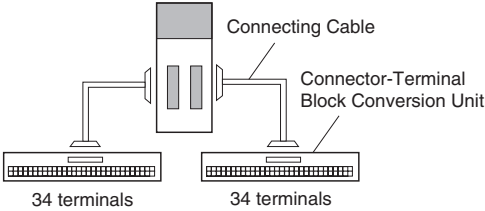
Product Name	Model
Pressure-welding Tool	XY2B-0002
Attachment	XY2B-1007

Tools for Crimped Connectors (OMRON)

Product Name	Model
Manual Crimping Tool	XY2B-7007

2. Connecting Connector-Terminal Block Conversion Units
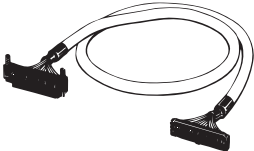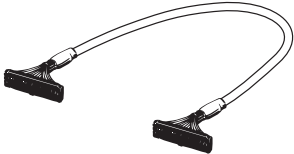
Connection Patterns for Connector-Terminal Block Conversion Units

Pattern	Configuration	Number of connectors
A	Connecting Cable Connector-Terminal Block Conversion Unit 34 terminals	1
B	Connecting Cable Connector-Terminal Block Conversion Unit 34 terminals 34 terminals	2

Combination of I/O Units with Connector-Terminal Block Conversion Units
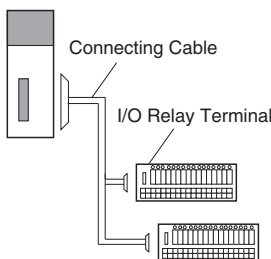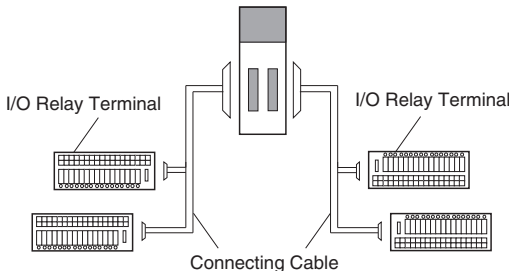
Unit	I/O capacity	Number of connectors	Polarity	Connection pattern	Connecting Cable	Connector-Terminal Block Conversion Unit	Wiring method	Common terminals
CJ1W-ID231	32 inputs	1 Fujitsu connector	NPN/PNP	A	XW2Z-□□□B	XW2R-J34G-C1	Phillips screw	No
						XW2R-E34G-C1	Slotted screw (rise up)	
						XW2R-P34G-C1	Push-in spring	
CJ1W-ID232	32 inputs	1 MIL connector	NPN/PNP	A	XW2Z-□□□K	XW2R-J34G-C2	Phillips screw	No
						XW2R-E34G-C2	Slotted screw (rise up)	
						XW2R-P34G-C2	Push-in spring	
CJ1W-ID233	32 inputs	1 MIL connector	NPN/PNP	A	XW2Z-□□□K	XW2R-J34G-C2	Phillips screw	No
						XW2R-E34G-C2	Slotted screw (rise up)	
						XW2R-P34G-C2	Push-in spring	
CJ1W-ID261	64 inputs	2 Fujitsu connectors	NPN/PNP	B	XW2Z-□□□B (2 Cables)	XW2R-J34G-C1 (2 Units)	Phillips screw	No
						XW2R-E34G-C1 (2 Units)	Slotted screw (rise up)	
						XW2R-P34G-C1 (2 Units)	Push-in spring	
CJ1W-ID262	64 inputs	2 MIL connectors	NPN/PNP	B	XW2Z-□□□K (2 Cables)	XW2R-J34G-C2 (2 Units)	Phillips screw	No
						XW2R-E34G-C2 (2 Units)	Slotted screw (rise up)	
						XW2R-P34G-C2 (2 Units)	Push-in spring	

Types of Connecting Cables

Appearance	Connectors	Model	Cable lenght [m]
XW2Z-□□□B	One 40-pin Connector Made by Fujitsu Component, Ltd. to One 40-pin MIL Connector	XW2Z-050B	0.5
		XW2Z-100B	1
		XW2Z-150B	1.5
		XW2Z-200B	2
		XW2Z-300B	3
		XW2Z-500B	5
XW2Z-□□□K	One 40-pin MIL Connector to One 40-pin MIL Connector	XW2Z-C50K	0.5
		XW2Z-100K	1
		XW2Z-150K	1.5
		XW2Z-200K	2
		XW2Z-300K	3
		XW2Z-500K	5

3. Connecting I/O Relay Terminals

Connection Patterns for I/O Relay Terminals

Pattern	Configuration
A	
B	

Combination of I/O Units with I/O Relay Terminal and Connecting Cables

Model	I/O points	Number of connectors	Polarity	Connection pattern	Number of branches	Connecting Cable	I/O Relay Terminal
CJ1W-ID231	32 inputs	1 Fujitsu connector	NPN	A	2	G79-I□C-□	G7TC-ID16
				A	2	G79-I□C-□	G7TC-IA16
CJ1W-ID232	32 inputs	1 MIL connector	NPN	A	2	G79-O□-□-D1	G7TC-ID16
				A	2	G79-O□-□-D1	G7TC-IA16
CJ1W-ID233	32 inputs	1 MIL connector	NPN	A	2	G79-O□-□-D1	G7TC-ID16
				A	2	G79-O□-□-D1	G7TC-IA16
CJ1W-ID261	64 inputs	2 Fujitsu connectors	NPN	B	2	G79-I□C-□	G7TC-ID16
				B	2	G79-I□C-□	G7TC-IA16
CJ1W-ID262	64 inputs	2 MIL connectors	NPN	B	2	G79-O□-□-D1	G7TC-ID16
				B	2	G79-O□-□-D1	G7TC-IA16

Types of Connecting Cables

Cable lenght	G79-□C	G79-I□C	G79-I□C-□	G79-O□C	G79-O□C-□	G79-O□-□-D1
0.25m	–	G79-I25C	–	G79-O25C	–	–
0.5m	–	G79-I50C	–	G79-O50C	–	G79-O50-25-D1
1.0m	G79-100C	–	G79-I100C-75	–	G79-O100C-75	G79-O75-50-D1
1.5m	G79-150C	–	G79-I150C-125	–	G79-O150C-125	–
2.0m	G79-200C	–	G79-I200C-175	–	G79-O200C-175	–
3.0m	G79-300C	–	G79-I300C-275	–	G79-O300C-275	–
5.0m	G79-500C	–	G79-I500C-475	–	G79-O500C-475	–

Dimensions

8-point/16-point Units (18-point Terminal Blocks)

CJ1W-ID201
CJ1W-ID211
CJ1W-ID212
CJ1W-IA201
CJ1W-IA111
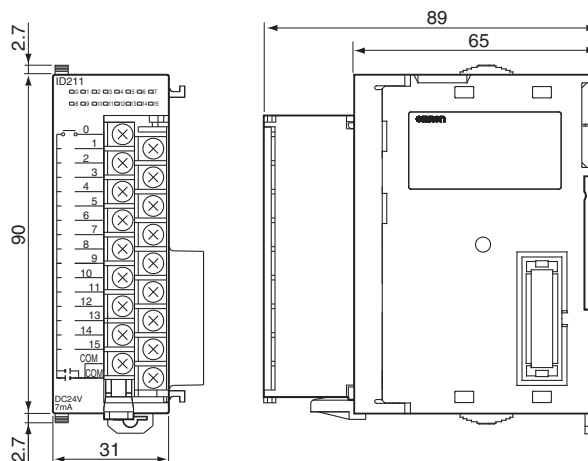
32-point Units (Input Units)

With Fujitsu-compatible Connector (40-pin × 1)
CJ1W-ID231
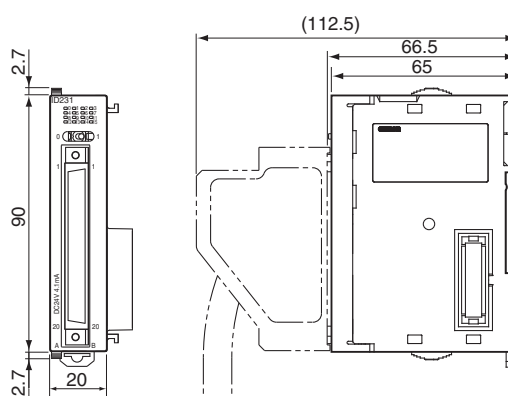
With MIL Connector (40-pin × 1)
CJ1W-ID232
CJ1W-ID233
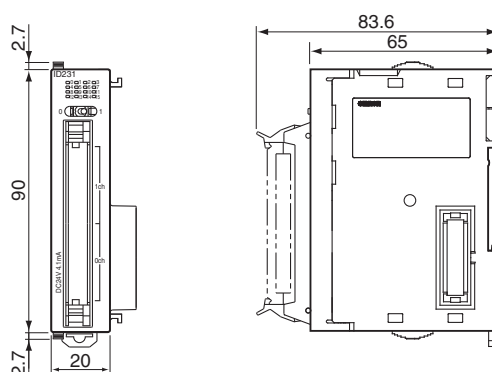
64-point Units (Input Units)

With Fujitsu-compatible Connector (40-pin × 2)
CJ1W-ID261
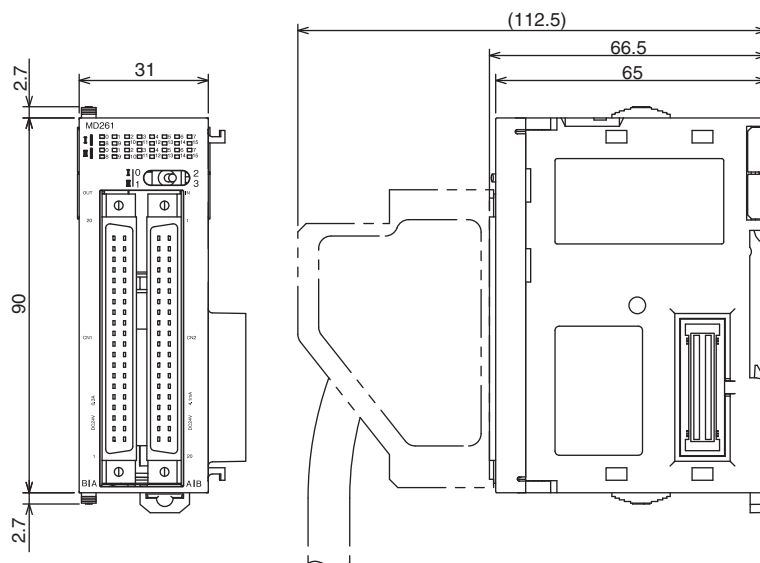
With MIL Connector (40-pin × 2)
CJ1W-ID262
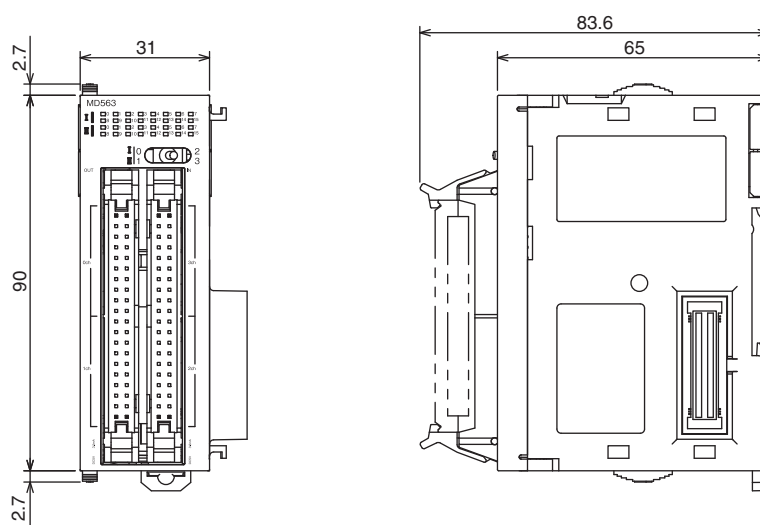
Related Manuals

Name	Cat. No.	Contents
CJ-series CJ2 CPU Unit Hardware User's Manual CJ2H-CPU6□-EIP CJ2H-CPU6□ CJ2M-CPU□□	W472	Describes the following for CJ2 CPU Units: • Overview and features • Basic system configuration • Part nomenclature and functions • Mounting and setting procedure • Remedies for errors • Also refer to the *Software User's Manual* (W473).
SYSMAC CJ Series CJ1H-CPU□□H-R, CJ1G/H-CPU□□H, CJ1G-CPU□□P, CJ1G-CPU□□, CJ1M-CPU□□ Programmable Controllers Operation Manual	W393	Provides an outlines of and describes the design, installation, maintenance, and other basic operations for the CJ-series PLCs.
NJ-series CPU Unit Hardware User's Manual NJ501-□□□□	W500	An introduction to the entire NJ-series system is provided along with the following information on a Controller built with an NJ501 CPU Unit. • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection Use this manual together with the NJ-series CPU Unit *Software User's Manual* (Cat. No. W501).

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Product	Code	Reference	Product link
Control system, module 64 outputs PNP MIL	136029	CJ1W-OD262	Buy on EAN
Control System, 16/16 Module E / S PNP MIL	156708	CJ1W-MD232	Buy on EAN
Control System, 32/32 Module E / S NPN MIL	156856	CJ1W-MD263	Buy on EAN
Control System, Module 16 inputs 24 VDC Screwless	171731	CJ1W-ID211	Buy on EAN
Control System, Fujitsu Module 32 inputs 24VDC	177393	CJ1W-ID231	Buy on EAN
Control System, Module 32 inputs 24VDC MIL	177394	CJ1W-ID232	Buy on EAN
Control System, Fujitsu Module 64 inputs 24VDC	177395	CJ1W-ID261	Buy on EAN
Control System, Module 64 inputs 24 Vdc MIL	177396	CJ1W-ID262	Buy on EAN
Control System, Fujitsu Module 32 NPN	177398	CJ1W-OD231	Buy on EAN
Control System, Module 32 outputs PNP MIL	177399	CJ1W-OD232	Buy on EAN
Control System, Fujitsu Module 64 NPN	177401	CJ1W-OD261	Buy on EAN
Control system, 100-120VAC Term Module 16 inputs.	315597	CJ1W-IA111	Buy on EAN
Control System, PLC Module G7TC Cable (2m)	144355	G79-200C	Buy on EAN
Control System, Module 16 24Vdc inputs Term.	382929	CJ1W-ID211	Buy on EAN
Control System, Module 8 Inputs 24Vdc - Connector M3	382928	CJ1W-ID201	Buy on EAN

Control System, Fujitsu G7xx connector module (1,5m)	122072	G79-O150C-125	Buy on EAN
Control system, MIL connector G7xx and XW2x module (50cm)	121994	G79-O50C	Buy on EAN
Control system, Omron Terminal Block Screw MIL MIL-Star 32 IN	372879	XW2R-J34G-C2	Buy on EAN
Control system, Omron Terminal Block MIL-MIL Push-In 32 IN	373000	XW2R-P34G-C2	Buy on EAN
Control System, Fujitsu Omron Terminal Block Screw-MIL Plano 32 IN	372893	XW2R-E34G-C1	Buy on EAN
Control system, Omron Terminal Block Screw MIL MIL-Plano 32 IN	372894	XW2R-E34G-C2	Buy on EAN
Control System, PLC Module G7TC Cable (3m)	121985	G79-300C	Buy on EAN
Control System, PLC Module G7TC Cable (5m)	121986	G79-500C	Buy on EAN
Control System, Fujitsu Omron Terminal Block Push-In-MIL 32 IN	372999	XW2R-P34G-C1	Buy on EAN
Control system, High Speed Inputs Module 32 MIL	270545	CJ1W-ID233	Buy on EAN
Control system, High Speed Inputs Module 16 - Connector M3	382930	CJ1W-ID212	Buy on EAN
Control System, 16/16 Module E / S NPN Fujitsu	104549	CJ1W-MD231	Buy on EAN
Control System, Fujitsu Omron Terminal Block Screw-MIL Star 32 IN	372878	XW2R-J34G-C1	Buy on EAN
Control System, Fujitsu G7xx connector module (1m)	122066	G79-I100C-75	Buy on EAN
Control system, 200-240VAC Module 8 Inputs Term.	315598	CJ1W-IA201	Buy on EAN