

CJ-series Input Units

CJ1W-ID/IA

CSM_CJ1W-ID_IA_DS_E_11_13

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 / OTAX 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.

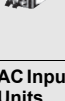
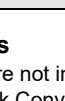
*2. For models with 32 or 64 inputs.

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 / OTAX 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 / OTAX connector	4 words	0.09	—	CJ1W-ID261	
		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	UC1, N, L, CE
		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 / OTAX 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	Connector Fujitsu FCN-361J040-AU Connector Cover Fujitsu FCN-360C040-J2 OTAX N360C040J2	Fujitsu / OTAX 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	Housing Fujitsu FCN-363J040 OTAX N363J040 Contactors Fujitsu FCN-363J-AU OTAX N363JAU Connector Cover Fujitsu FCN-360C040-J2 OTAX N360C040J2		C500-CE405	
	Pressure welded	Fujitsu FCN-367J040-AU/F		C500-CE403	
24-pin Connectors	Soldered	Connector Fujitsu FCN-361J024-AU Connector Cover Fujitsu FCN-360C024-J2 OTAX N360C024J2	Fujitsu / OTAX Connectors: CJ1W-MD231 (16 inputs, 16 outputs): 2 per Unit	C500-CE241	—
	Pressure welded	Fujitsu FCN-367J024-AU/F OTAX N367J024AUF		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.

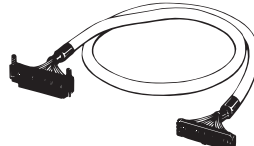
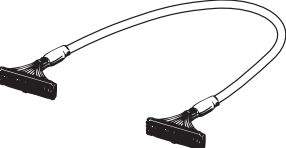
Applicable Connector-Terminal Block Conversion Units

Type	Series	Number of connector poles	Number of terminal block poles	Wiring method	Terminal type	Size			Mounting		Common terminals	I/O Units	Model *	Standards
						Depth (mm)	Height (mm)	Width (mm)	DIN Track	Screws				
PLCs	XW2K	40	36	Push-In Plus 	Spring	75	39	40.8	Yes	—	No	CJ1W-ID231 CJ1W-ID261	XW2K-40G-O32A	—
		40	102	Push-In Plus 	Spring	124	52.7	40.8			Yes	CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2K-40G-O32C	
	XW2R	40	34	Phillips screw 	M3	130.7	50	48.05			No	CJ1W-ID231 CJ1W-ID261	XW2R-J34GD-C1	
		40	34	Slotted screw (rise up) 	M3 (European type)	98.5	50	44.81			No	CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-J34GD-C2	
		40	34								No	CJ1W-ID231 CJ1W-ID261	XW2R-E34GD-C1	
		40	34									CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-E34GD-C2	

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

* Representative models only. For details, refer to the XW2K series Datasheet (Cat. No. G152) and XW2R Datasheet.

Connecting Cables for Connector-Terminal Block Conversion Units

Appearance	Connectors	Cable length [m]	Model
XW2Z-□□□B 	One 40-pin FCN Connector to One 40-pin MIL Connector	0.5	XW2Z-050B
		1	XW2Z-100B
		1.5	XW2Z-150B
		2	XW2Z-200B
		3	XW2Z-300B
		5	XW2Z-500B
XW2Z-□□□K 	One 40-pin MIL Connector to One 40-pin MIL Connector	0.5	XW2Z-C50K
		1	XW2Z-100K
		1.5	XW2Z-150K
		2	XW2Z-200K
		3	XW2Z-300K
		5	XW2Z-500K

Applicable I/O Relay Terminals

Type	Series	Specifications						Size (horizontal mounting)			Mounting		Model	Standards										
		Classification		Polarity	Number of points	Rated ON current at contacts	Rated voltage	Horizontal (mm)	Vertical (mm)	Height (mm)	DIN Track	Screws												
Push-In Plus terminal block		Inputs	DC inputs	NPN	16 (SPSTNO × 16)	50 mA	24 VDC	143	90	56	Yes	Yes	G70V-SID16P *4	UC, CE (TUV certified)										
				PNP									G70V-SID16P-1 *4											
				NPN									G70V-SID16P-C16 *5											
				PNP									G70V-SID16P-1-C16 *5											
		Outputs	Relay outputs	NPN	16 (SPDT × 16)	6 A/point, 10 A/ common							G70V-SOC16P *4											
				PNP									G70V-SOC16P-1 *4											
				NPN									G70V-SOC16P-C4 *6											
				PNP									G70V-SOC16P-1-C4 *6											
Standard		Inputs	AC inputs	NPN	16 (SPSTNO × 16)	1A	100/(110) VAC	182	85	68	Yes	No	G7TC-IA16 AC100/110	U, C										
							200/(220) VAC						G7TC-IA16 AC200/220											
			DC inputs				12 VDC						G7TC-ID16 DC12											
							24 VDC						G7TC-ID16 DC24											
							100/110 VDC						G7TC-ID16 DC100/110											
							Outputs						Relay outputs		NPN	8 (SPSTNO × 8)	5A	12 VDC	102	G7TC-OC08 DC12				
		16 (SPSTNO × 16)	24 VDC	182	G7TC-OC08 DC24																			
			PNP		16 (SPSTNO × 16)	12 VDC		G7TC-OC16 DC12																
					24 VDC	G7TC-OC16 DC24																		
			PNP		16 (SPSTNO × 16)	12 VDC		G7TC-OC16-1 DC12																
		24 VDC		G7TC-OC16-1 DC24																				
		High-capacity socket		Inputs	Relay inputs	NPN/ PNP		16 (SPDT × 16 possible with G2R Relays)							100 mA	110 VDC max., 240 VAC max. *2		234	75	64	Yes	No	G70A-ZOC16-5	U, C, CE (VDE certified)
																Outputs							Relay outputs	
				G70A-ZOC16-4																				
		Space-saving	Vertical type G70D-V	Outputs	Relay outputs	NPN		16 (SPSTNO × 16)							5 A or 3 A *3	24 VDC		135	46	81	Yes	Yes	G70D-VSOC16	U, C, CE (VDE certified)
							MOSFET relay outputs						0.3 A		G70D-VFOM16									
Flat type G70D	Relay outputs		NPN		8 (SPSTNO × 8)	5 A	24 VDC	68	93	44	Yes	Yes	G70D-SOC08	-										
					16 (SPSTNO × 16)	3 A							G70D-SOC16											
PNP			16 (SPSTNO × 16)		3 A	G70D-SOC16-1																		
			MOSFET relay outputs		NPN	16 (SPSTNO × 16)		0.3 A	G70D-FOM16															
PNP									G70D-FOM16-1 *7															
High-capacity, space-saving					Outputs	Relay outputs		NPN	8 (SPSTNO × 8)	10 A			24 VDC		136	93	55	Yes	Yes	G70R-SOC08 *7	-			

*1. G70A is a I/O terminal socket product. Relay is not provided with the socket. Be sure to order a relay, timer separately.

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

*3. Eight or fewer points ON: 5 A, Nine or more points ON: 3 A.

*4. Internal common at terminal block: No internal connections

*5. Internal common at terminal block: Internal IO common 16 points internally connected

*6. Internal common at terminal block: Every 4 points internally connected at terminal block middle row.

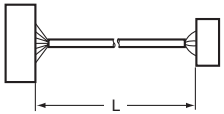
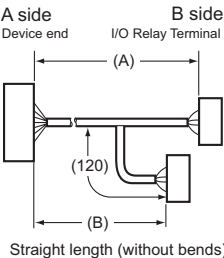
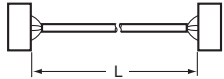
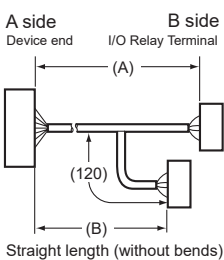
*7. Product no longer available to order.

Note: 1. For the combination of Input Units with I/O Relay Terminal and Connecting Cables, refer to 3. *Connecting I/O Relay Terminals*.

2. Please refer to each Datasheet about details.

3. When the G7TC is used with an AC rated voltage, three rated currents can be used. If a coil voltage of 110 or 220 VAC is used, 50 Hz cannot be used.

Cables for I/O Relay Terminals

Type	Name	I/O Classification	Appearance	Cable length L (mm)		Models
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		(A) 1,000	(B) 750	XW2Z-RI100C-75
		32 output points		(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
				(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
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
MIL connectors (40 pins)	Cables with Connectors (1:2) XW2Z-RO□-□-D1, XW2Z-RI□-□-D1	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

Note: Refer to the Datasheet for the XW2Z-R Cables for I/O Relay Terminals (Cat. No. G126).

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							

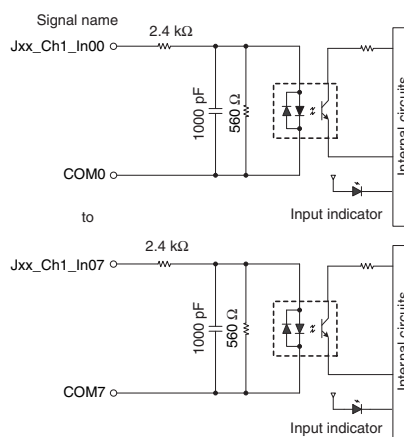
* Product no longer available to order.

Specifications

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

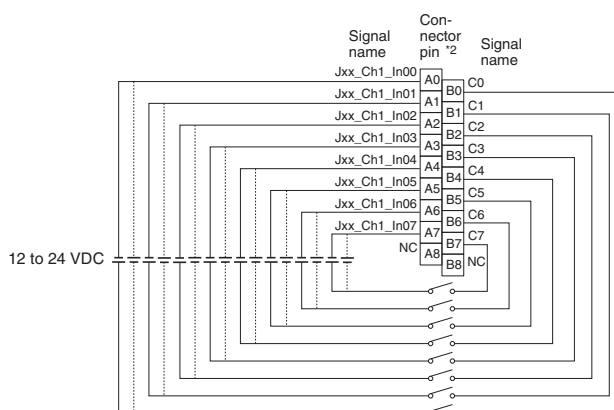
Name	8-point DC Input Unit with Terminal Block
Model	CJ1W-ID201
Rated Input Voltage	12 to 24 VDC
Rated Input Voltage Range	10.2 to 26.4 VDC
Input Impedance	2.4 k Ω
Input Current	10 mA typical (at 24 VDC)
ON Voltage/ON Current	8.8 VDC min./3 mA min.
OFF Voltage/OFF Current	3 VDC max./1 mA max.
ON Response 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 M Ω min. 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.

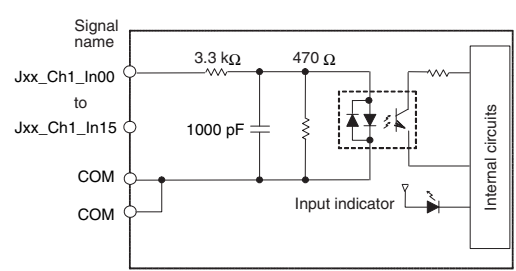
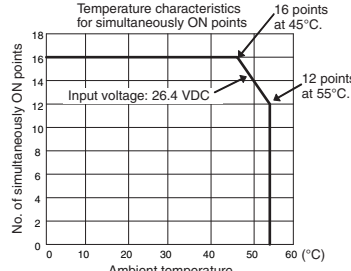
*1. The ON response time will be 20 μ s maximum and OFF response time will be 400 μ s maximum even if the response time are set to 0 ms due to internal element delays.

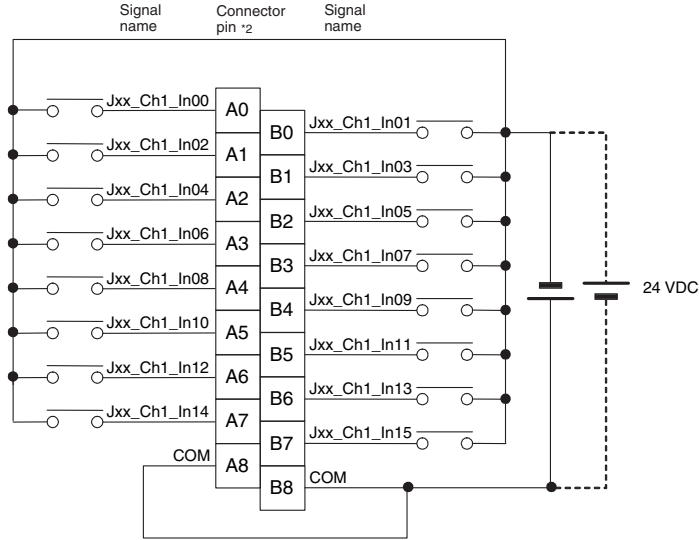
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

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

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 k Ω
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 M Ω min. 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.	
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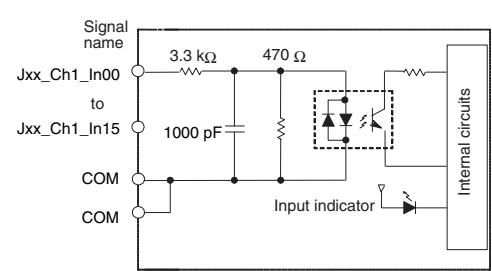
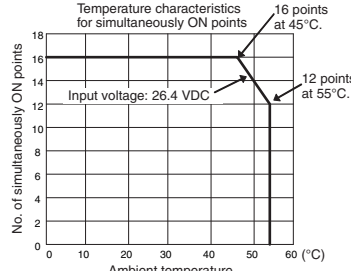
External connection and terminal-device variable diagram	 • Polarity of the input power supply can be connected in either direction. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
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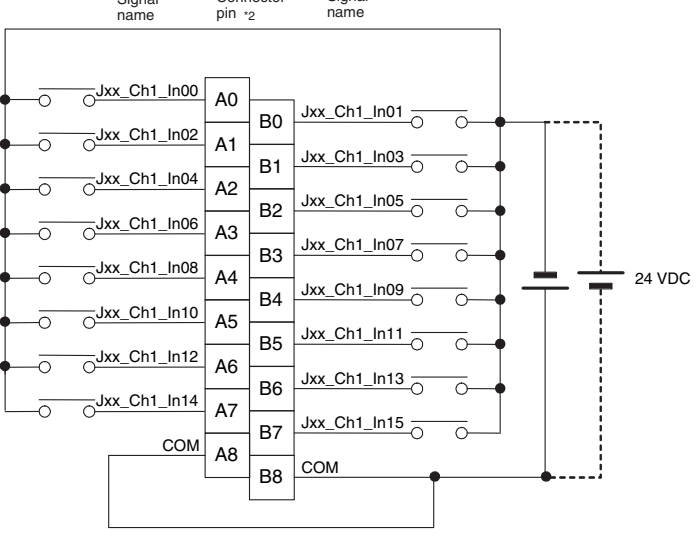
*1. The ON response time will be 20 μ s maximum and OFF response time will be 400 μ s maximum even if the response time are set to 0 ms due to internal element delays.

*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 k Ω
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 M Ω min. 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.	 Temperature characteristics for simultaneously ON points 16 points at 45°C. 12 points at 55°C. Input voltage: 26.4 VDC
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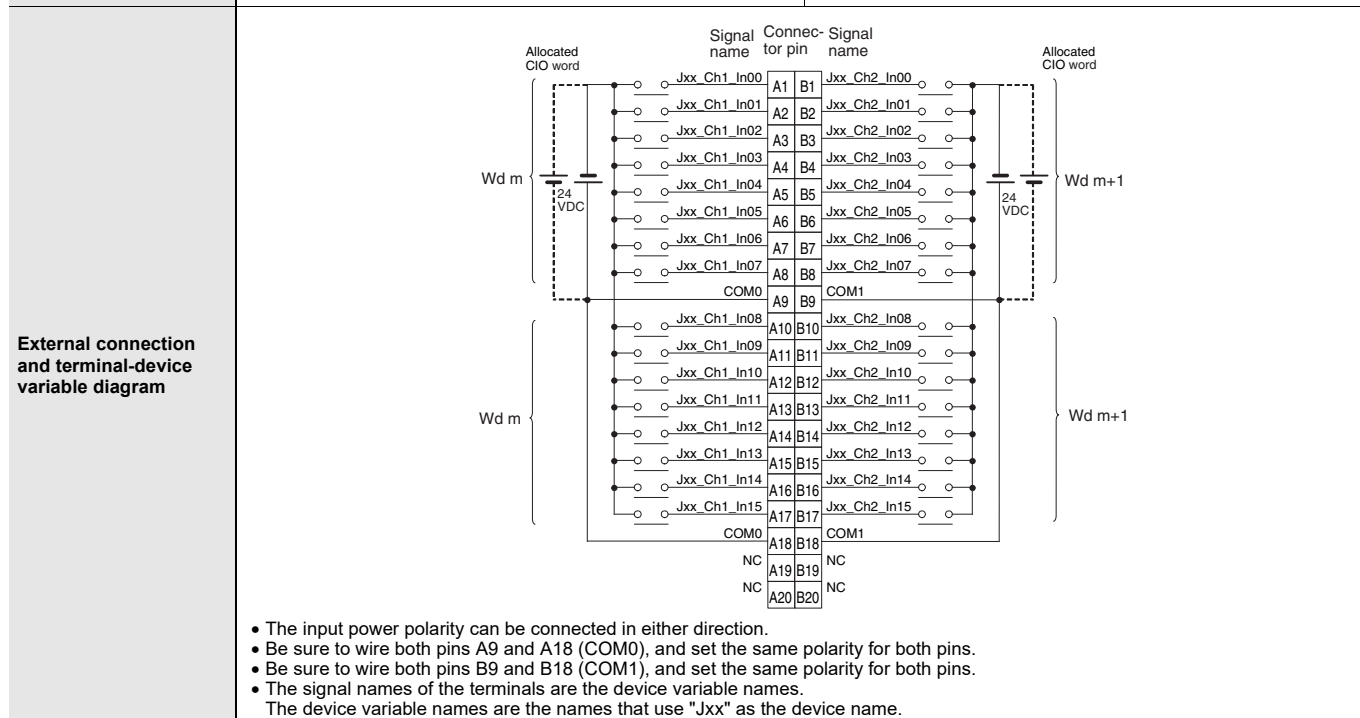
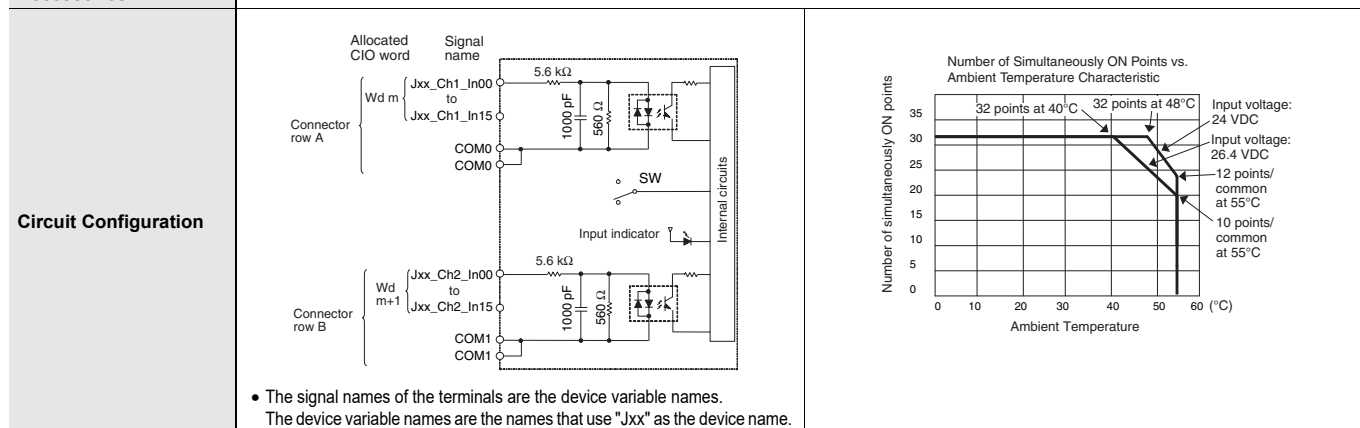
External connection and terminal-device variable diagram	 • Polarity of the input power supply can be connected in either direction. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.
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*1. The ON response time will be 15 μ s maximum and OFF response time will be 90 μ s 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 / OTAX Connector
Model	CJ1W-ID231
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 k Ω
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 M Ω min. 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



* The ON response time will be 20 μ s maximum and OFF response time will be 400 μ s 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 k Ω
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 M Ω min. 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

Number of Simultaneously ON Points vs. Ambient Temperature Characteristic

- 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.

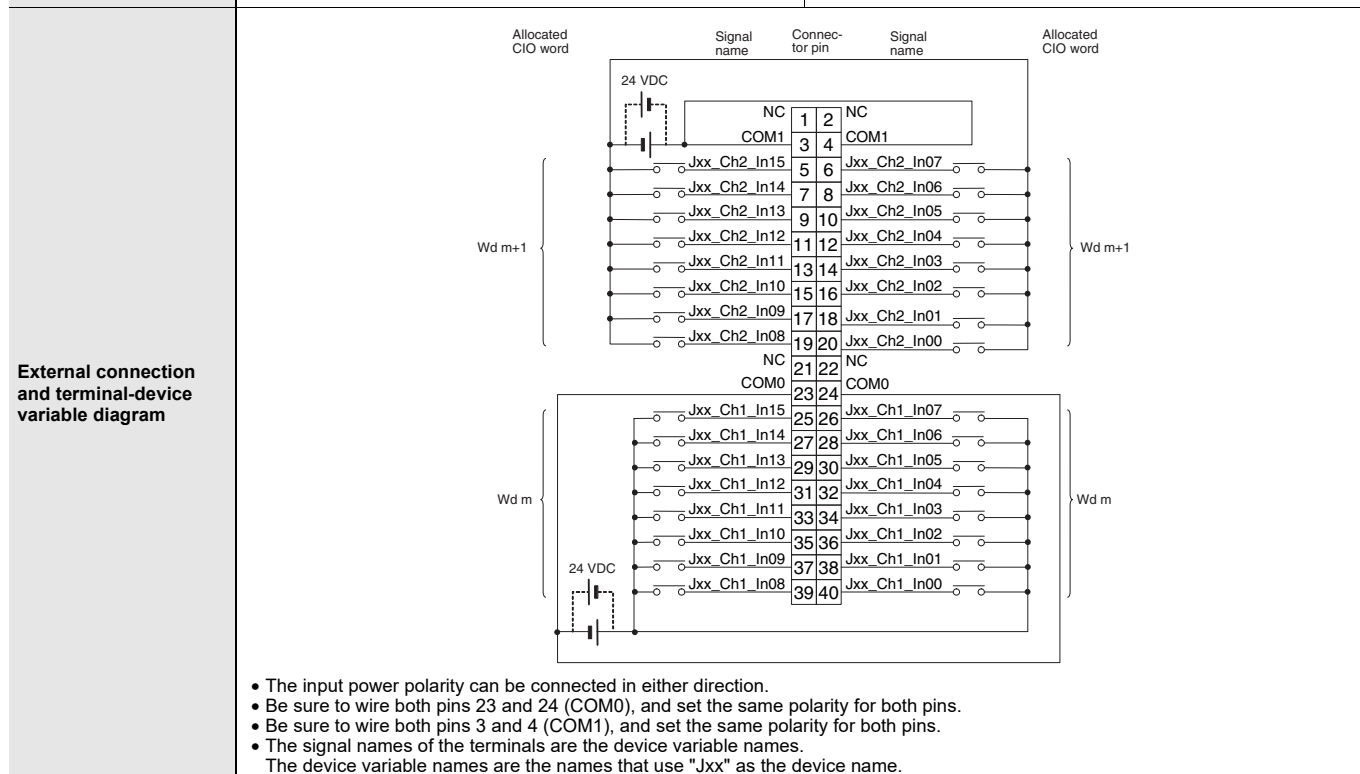
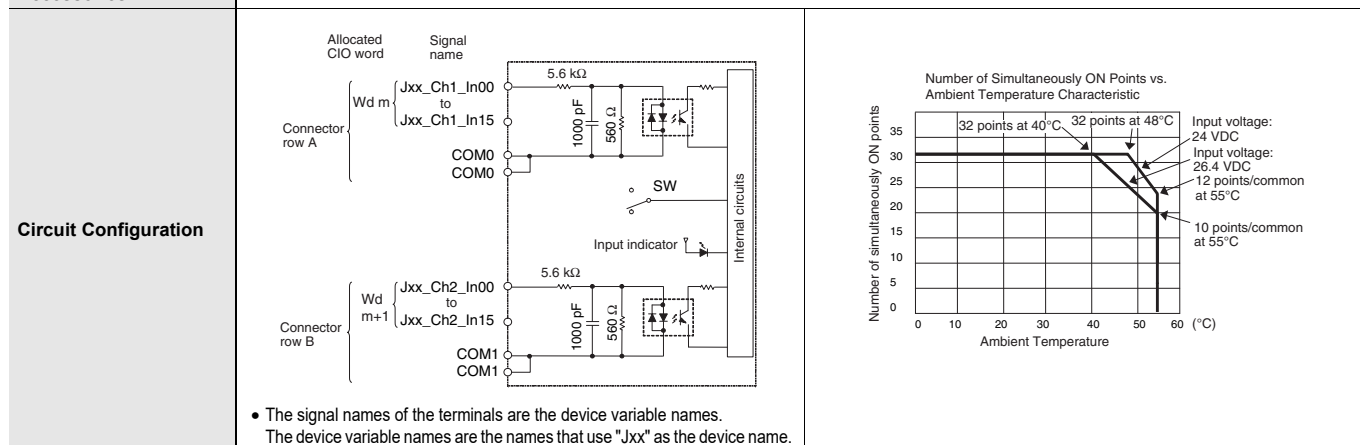
* The ON response time will be 20 μ s maximum and OFF response time will be 400 μ s maximum even if the response times are set to 0 ms due to internal element delays.

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 k Ω
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 M Ω min. 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



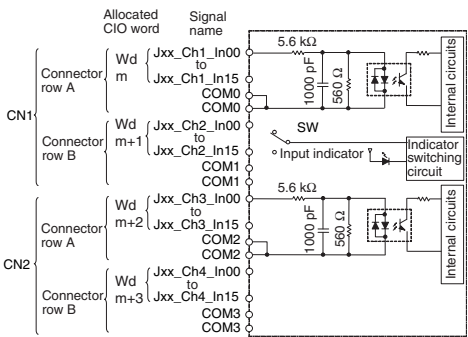
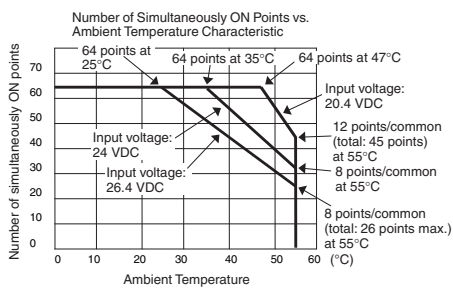
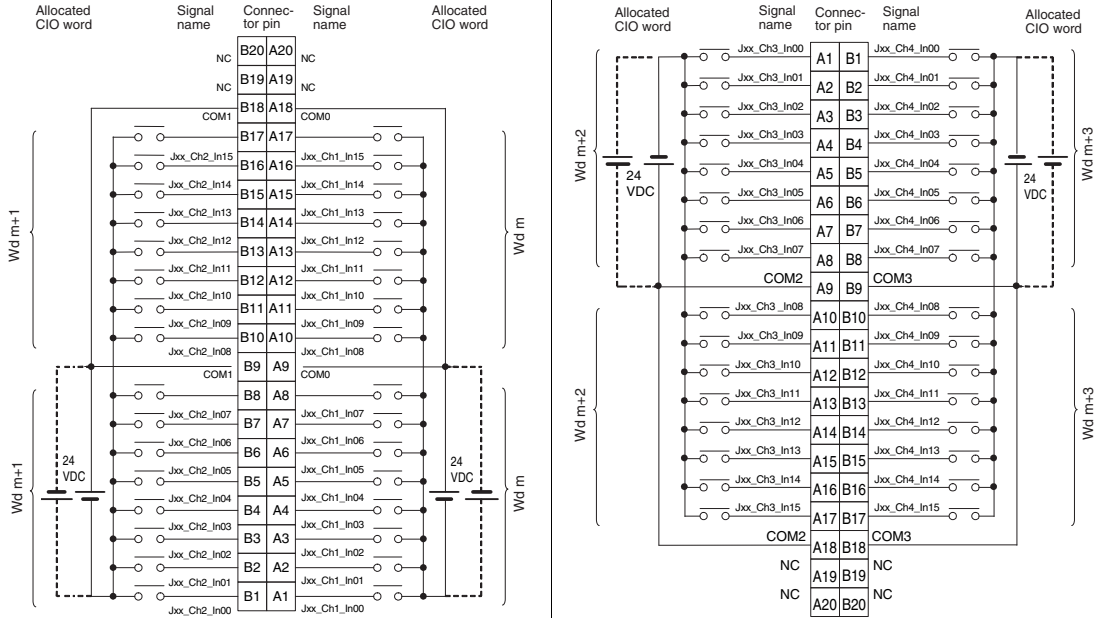
* The ON response time will be 15 μ s maximum and OFF response time will be 90 μ s maximum even if the response times are set to 0 ms due to internal element delays.

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 / OTAX Connector
Model	CJ1W-ID261
Rated Input Voltage	24 VDC
Rated Input Voltage Range	20.4 to 26.4 VDC
Input Impedance	5.6 k Ω
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 M Ω min. 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	 • 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. • 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.	

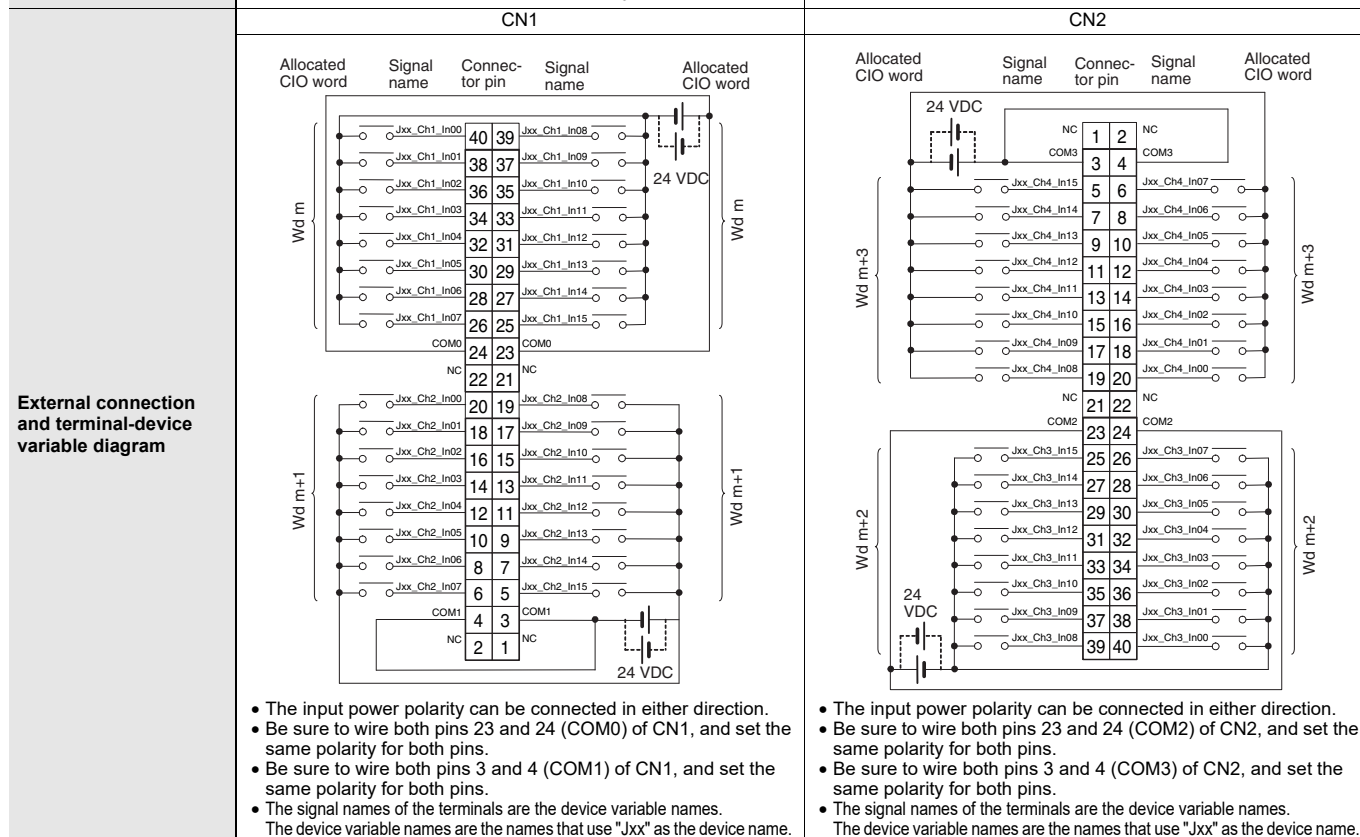
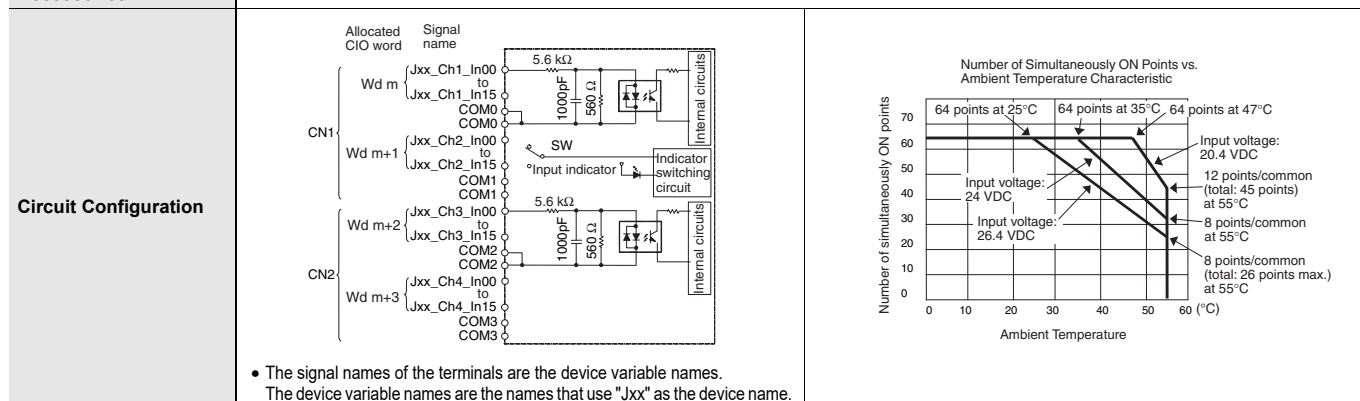
* The ON response time will be 120 μ s maximum and OFF response time will be 400 μ s maximum even if the response times are set to 0 ms due to internal element delays.

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 k Ω
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 M Ω min. 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



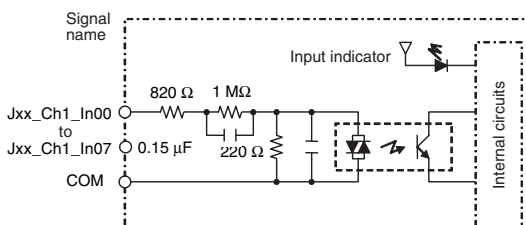
* The ON response time will be 120 μ s maximum and OFF response time will be 400 μ s maximum even if the response times are set to 0 ms due to internal element delays.

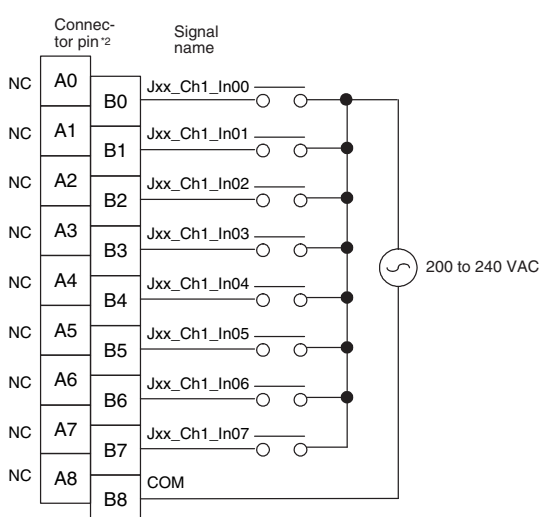
Note: Observe the following restrictions when connecting to a 2-wire sensor.

- 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 k Ω (50 Hz), 18 k Ω (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 M Ω min. 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.
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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.
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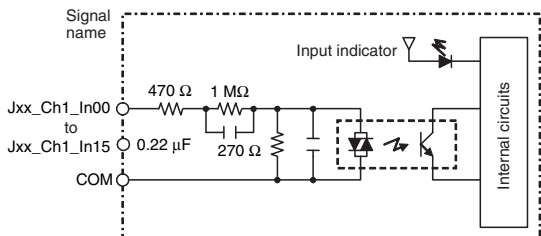
*1. Can be set to 0 ms, 0.5 ms, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, or 32ms in the settings. When the response times have been set to 0 ms, the ON response time will be 10 ms maximum and the OFF response time will be 40 ms maximum due to internal element delays.

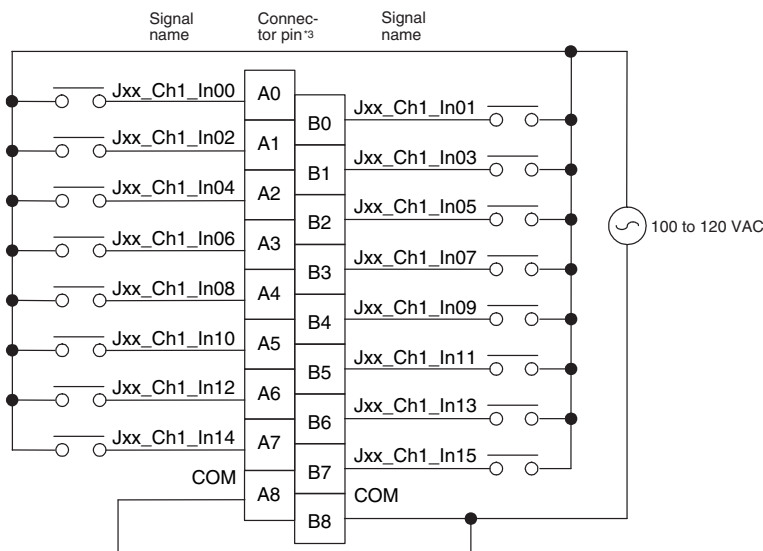
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

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 k Ω (50 Hz), 12 k Ω (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 M Ω min. 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.
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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.
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*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	—

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

16-point Input Unit

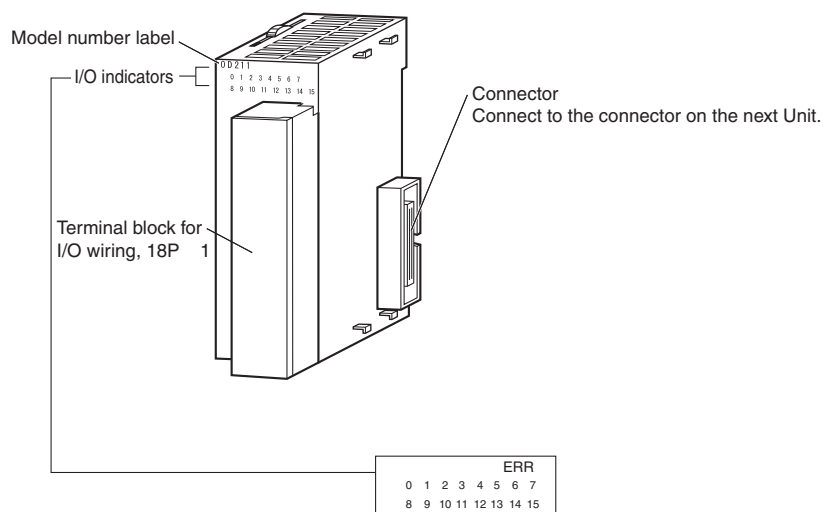
Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15

64-point Input Unit

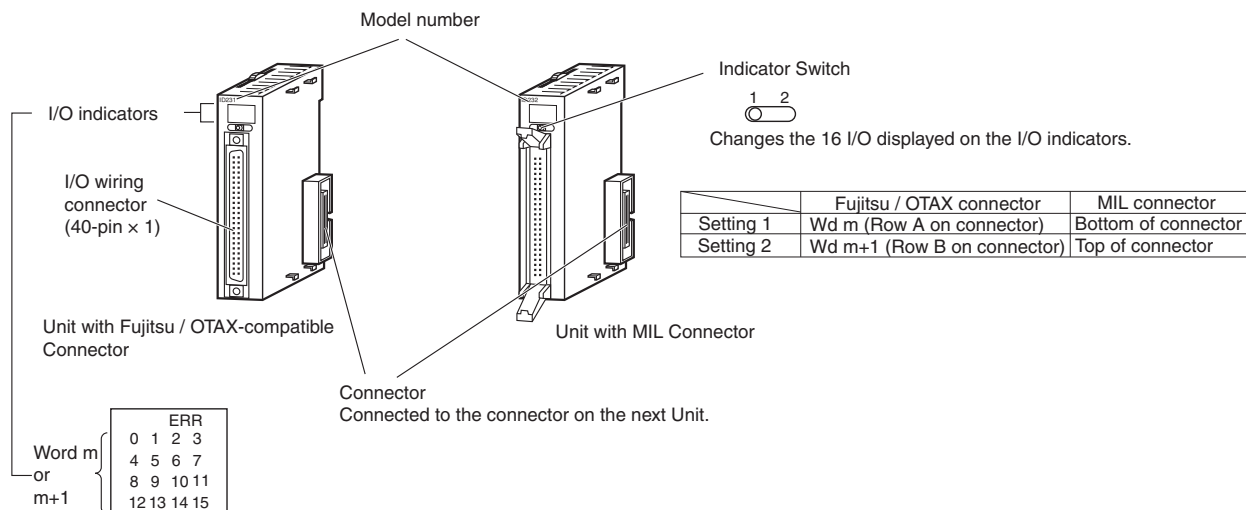
Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
Wd m+1 (Input)	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
	:	:
	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15
Wd m+2 (Input)	00	IN0/Jxx_Ch3_In00
	01	IN1/Jxx_Ch3_In01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

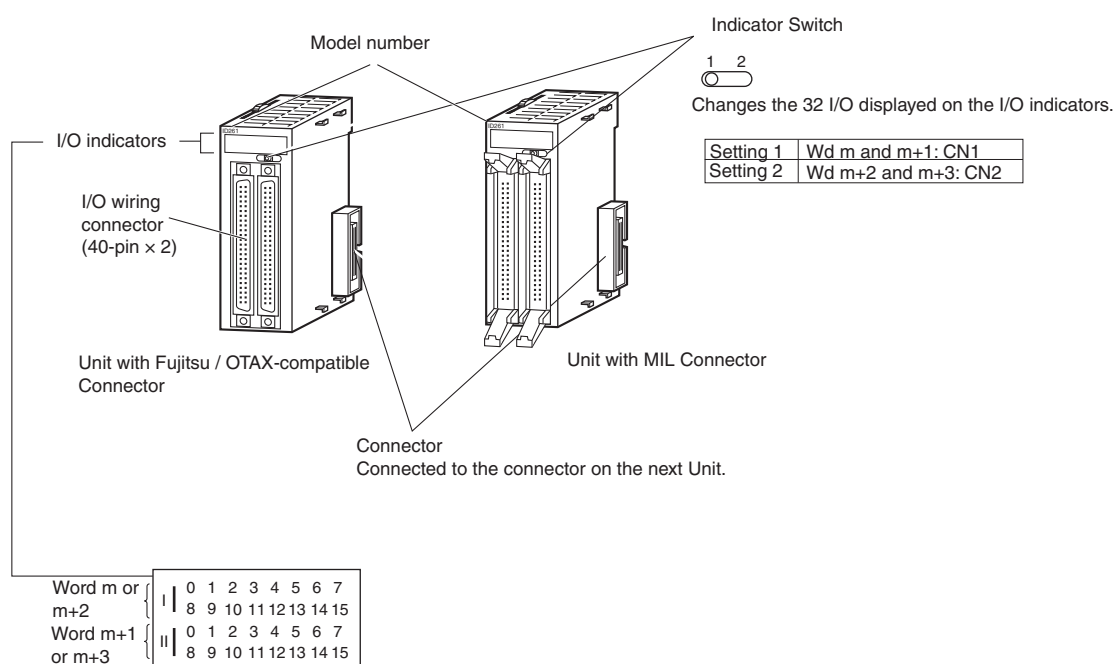
8-point/16-point Units (18-point Terminal Blocks)



32-point Units (Models with 40-point Fujitsu / OTAX Connector or MIL Connector)



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



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.

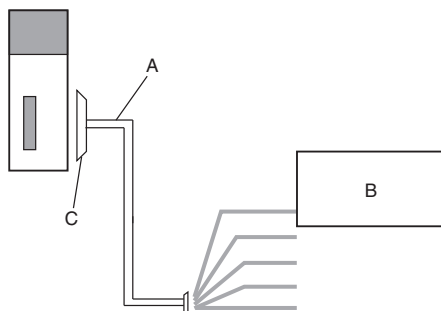


I/O Unit Wiring Methods

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.

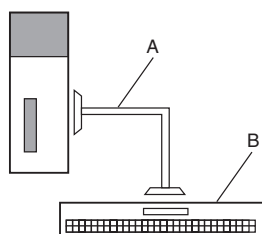


A	User-provided cable
B	External device
C	Connector

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 or push-in terminal block makes it easy to connect external devices.

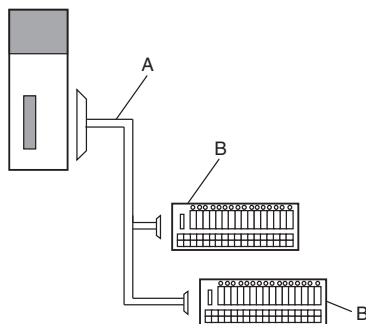


A	Connecting Cable for Connector-Terminal Block Conversion Unit XW2Z
B	Connector-Terminal Block Conversion Unit XW2□

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	Connecting Cable for I/O Relay Terminals XW2Z-R
B	I/O Relay Terminals G70V, G7TC Relay Terminals G70D, G70R I/O Terminal Socket G70A 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 / OTAX-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 / OTAX parts
Solder-type	40	C500-CE404	Socket: Fujitsu FCN-361J040-AU Connector cover: Fujitsu FCN-360C040-J2 OTAX N360C040J2
Crimped	40	C500-CE405	Socket: Fujitsu FCN-363J040 OTAX N363J040 Connector cover: Fujitsu FCN-360C040-J2 OTAX N360C040J2 Contacts: Fujitsu FCN-363J-AU OTAX N363JAU
Pressure-welded	40	C500-CE403	Fujitsu 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
	40	XG5N-401 *2	HU-400S2-001
Crimped	—	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 mm²). 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 / OTAX 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)

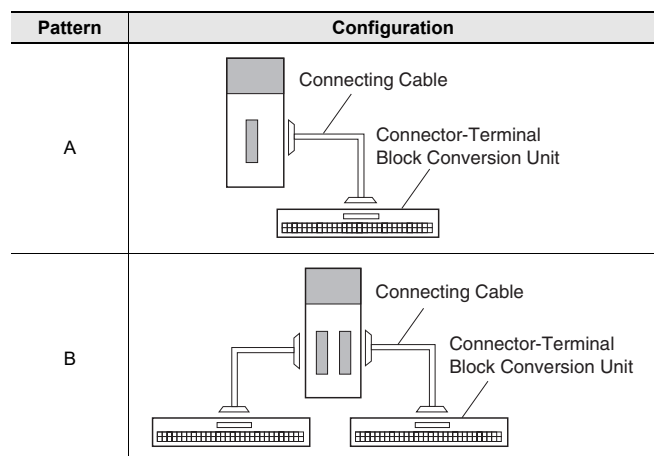
Product Name	Model
Pressure-welding Tool	XY2B-0002
Attachment	XY2B-1007

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



Combination of I/O Units with Connector-Terminal Block Conversion Units

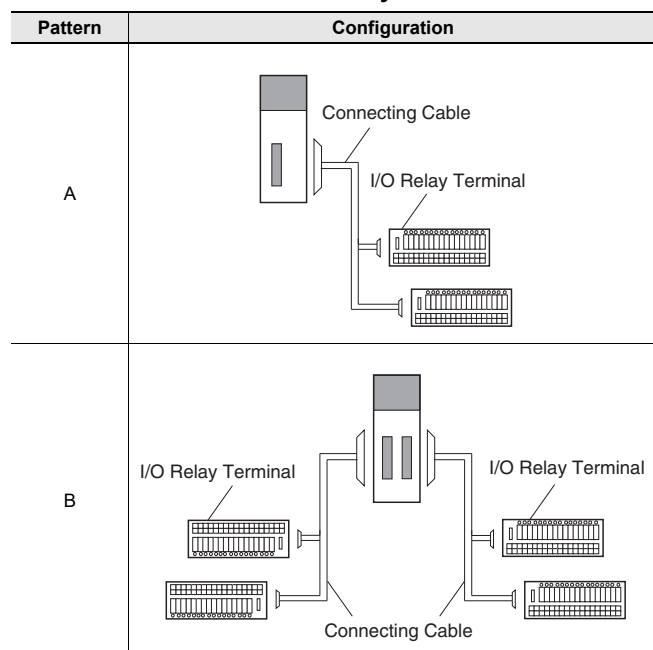
Unit	I/O capacity	Number of connectors	Polarity	Connection pattern	Connecting Cable *	Connector-Terminal Block Conversion Unit	Wiring method	Common terminals
CJ1W-ID231	32 inputs	1 Fujitsu / OTAX connector	NPN/PNP	A	XW2Z-□□□B	XW2K-40G-O32A	Push-In Plus	No
						XW2K-40G-O32A-IN	Push-In Plus	Yes
						XW2R-J34GD-C1	Phillips screw	No
						XW2R-E34GD-C1	Slotted screw (rise up)	No
CJ1W-ID232	32 inputs	1 MIL connector	NPN/PNP	A	XW2Z-□□□K	XW2K-40G-O32C	Push-In Plus	No
						XW2K-40G-O32C-IN	Push-In Plus	Yes
						XW2R-J34GD-C2	Phillips screw	No
						XW2R-E34GD-C2	Slotted screw (rise up)	No
CJ1W-ID233	32 inputs	1 MIL connector	NPN/PNP	A	XW2Z-□□□K	XW2K-40G-O32C	Push-In Plus	No
						XW2K-40G-O32C-IN	Push-In Plus	Yes
						XW2R-J34GD-C2	Phillips screw	No
						XW2R-E34GD-C2	Slotted screw (rise up)	No
CJ1W-ID261	64 inputs	2 Fujitsu / OTAX connectors	NPN/PNP	B	XW2Z-□□□B (2 pcs)	XW2K-40G-O32A (2 Units)	Push-In Plus	No
						XW2K-40G-O32A-IN (2 Units)	Push-In Plus	Yes
						XW2R-J34GD-C1 (2 Units)	Phillips screw	No
						XW2R-E34GD-C1 (2 Units)	Slotted screw (rise up)	No
CJ1W-ID262	64 inputs	2 MIL connectors	NPN/PNP	B	XW2Z-□□□K (2 pcs)	XW2K-40G-O32C (2 Units)	Push-In Plus	No
						XW2K-40G-O32C-IN (2 Units)	Push-In Plus	Yes
						XW2R-J34GD-C2 (2 Units)	Phillips screw	No
						XW2R-E34GD-C2 (2 Units)	Slotted screw (rise up)	No

* The box □ is replaced by the cable length.

Note: For details, refer to the XW2K series Datasheet (Cat. No. G152) and XW2R Datasheet.

3. Connecting I/O Relay Terminals

Connection Patterns for I/O Relay Terminals



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

I/O Units				Connection pattern	Connecting Cables		I/O Relay Terminals			
Model	I/O capacity	External connectors	Polarity		Model *1	Quantity required	Model	I/O points	Quantity required	Wiring method
CJ1W-ID231	32 inputs	1 Fujitsu / OTAX connector (40 p)	Sinking/ Sourcing (NPN/PNP)	A	XW2Z-RI□C-□	1	G70V-SID16P(-1)(-C16) *2	16	2	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
							G70A-ZIM16-5 *3	16		
CJ1W-ID232	32 inputs	1 MIL connector (40 p)	Sinking/ Sourcing (NPN/PNP)	A	XW2Z-RO□-□-D1	1	G70V-SID16P(-1)(-C16) *2	16	2	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
							G70A-ZIM16-5	16		
CJ1W-ID233	32 inputs	1 MIL connector (40 p)	Sinking/ Sourcing (NPN/PNP)	A	XW2Z-RO□-□-D1	1	G70V-SID16P(-1)(-C16) *2	16	2	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
							G70A-ZIM16-5*3	16		
CJ1W-ID261	64 inputs	2 Fujitsu / OTAX connectors (40 p)	Sinking/ Sourcing (NPN/PNP)	B	XW2Z-RI□C-□	2	G70V-SID16P(-1)(-C16) *2	16	4	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
							G70A-ZIM16-5 *3	16		
CJ1W-ID262	64 inputs	2 MIL connectors (40 p)	Sinking/ Sourcing (NPN/PNP)	B	XW2Z-RO□-□-D1	2	G70V-SID16P(-1)(-C16) *2	16	4	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
							G70A-ZIM16-5 *3	16		

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

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

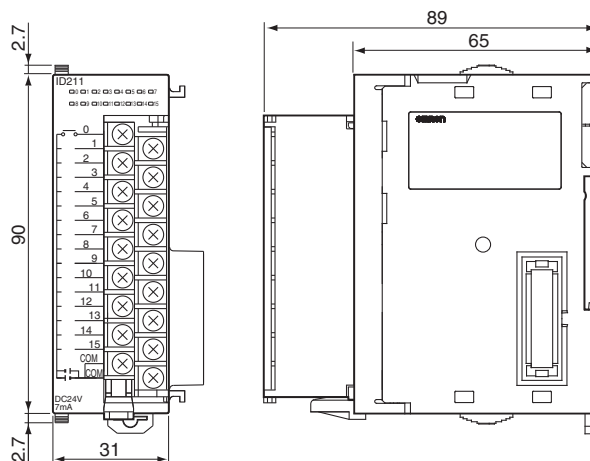
*3. G70A-ZIM16-5 is a I/O terminal socket products. Relay is not provided with the socket. Be sure to order a relay, timer separately. (with G2R Relays mounted: SPDT × 16)

Dimensions

(Unit: mm)

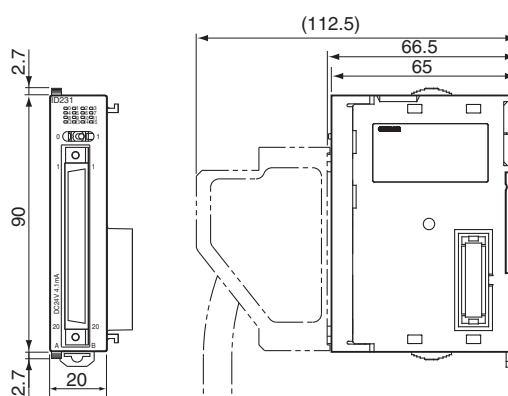
8-point/16-point Units (18-point Terminal Blocks)

CJ1W-ID201
CJ1W-ID211
CJ1W-ID212
CJ1W-IA201
CJ1W-IA111



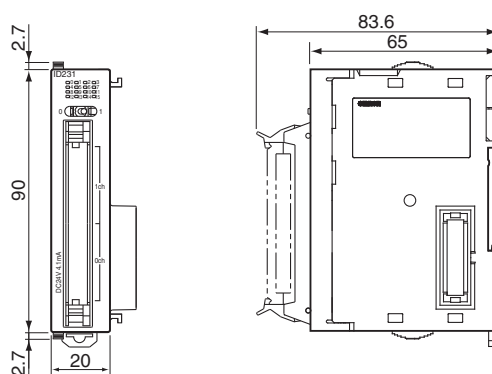
32-point Units (Input Units)

With Fujitsu / OTAX-compatible Connector (40-pin × 1)
CJ1W-ID231



With MIL Connector (40-pin × 1)

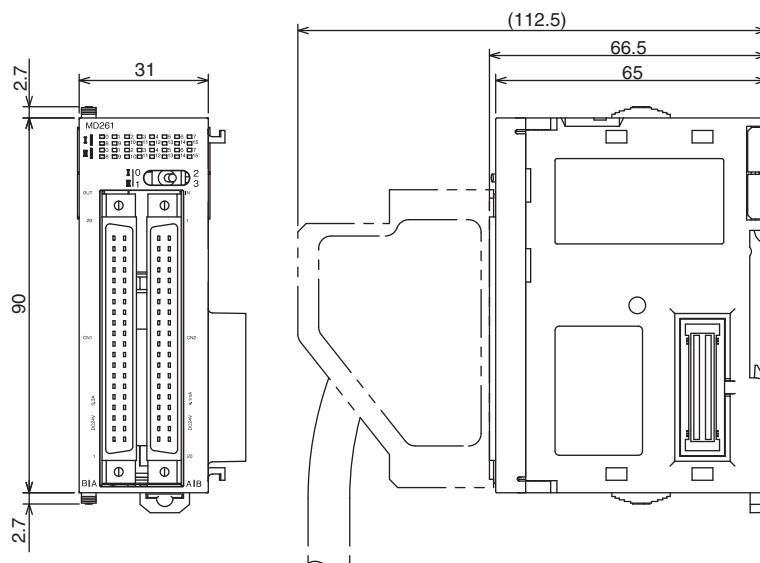
CJ1W-ID232
CJ1W-ID233



64-point Units (Input Units)

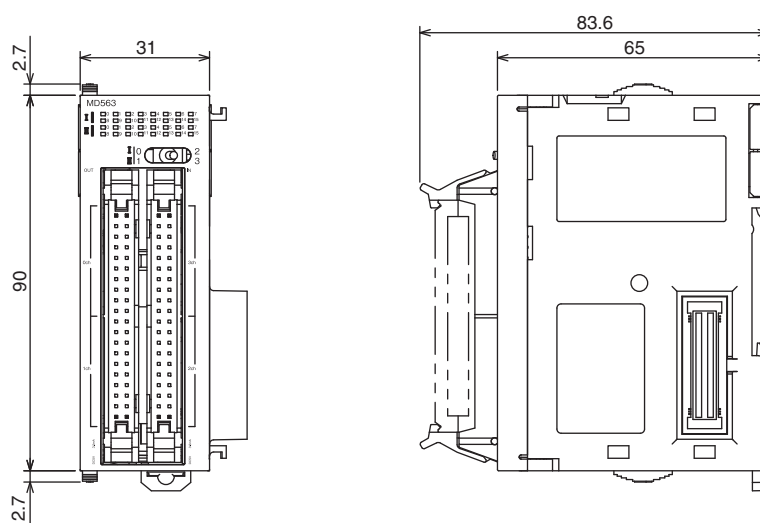
With Fujitsu / OTAX-compatible Connector (40-pin × 2)

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 <i>Software User's Manual</i> (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 <i>NJ-series CPU Unit Software User's Manual</i> (Cat. No. W501).

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