# CJ-series Input Units CJ1W-ID/IA

#### CSM\_CJ1W-INPUT\_DS\_E\_7\_1

## 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		Sp	pecifications			consu	rent mption A)	Model	Standards	
Unit type	name	I/O points	Input voltage and current	Commons	External connection	No. of words allocated	5 V	24 V	Model	Standards	
		8 inputs	12 to 24 VDC, 10 mA	Independent contacts	Removable terminal block	1 word	0.09	-	CJ1W-ID201	UC1, N, L,	
	DC Input Units	16 inputs	24 VDC, 7 mA	16 points, 1 common	Removable terminal block	1 word	0.08	_	CJ1W-ID211	CE	
		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,	
		32 inputs	24 VDC, 4.1 mA	16 points, 1 common	MIL connector	2 words	0.09	-	CJ1W-ID232	CE	
CJ1 Basic I/O Units		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	
	ARIL	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*.

## CJ1W-ID/IA

#### 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	Applicable Units	Model	Standards	
	Soldered	FCN-361J040-AU Connector FCN-360C040-J2 Connector Cover		C500-CE404	
40-pin Connectors	Crimped	FCN-363J040 Housing FCN-363J-AU Contacto FCN-360C040-J2 Connecto Cover	CJ1W-ID261 (64 inputs): 2 per Unit CJ1W-OD231 (32 outputs):1 per Unit	C500-CE405	
	Pressure welded	FCN-367J040-AU/F		C500-CE403	
	Soldered	FCN-361J024-AU Connector FCN-360C024-J2 Connector Cover		C500-CE241	
24-pin Connectors	Crimped	FCN-363J024 Housing FCN-363J-AU Contacto FCN-360C024-J2 Connecto 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	_
20-pin Connectors	Pressure welded	FRC5-AO20-3TOS	MIL Connectors: CJ1W-MD232/233 (16 inputs, 16 outputs): 2 per Unit	XG4M-2030-T	

### Applicable Connector-Terminal Block Conversion Units

			Number		Terminal		Size		Mou	nting	Common	Bleeder				
Туре	Series	I/O	of poles	Wiring method	type	Depth (mm)	Height (mm)	Width (mm)	DIN Track	Screws			Indicators	I/O Units	Model	Standards
				Phillips screw										CJ1W-ID231 CJ1W-ID261	XW2R-J34G-C1	
				Renewald.	M3	50	48.35	130.7						CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-J34G-C2	
				Slotted screw (rise up)										CJ1W-ID231 CJ1W-ID261	XW2R-E34G-C1	1
PLCs	XW2R	Out put	34		M3 (European type)	50	45.11	98.5	Yes	Yes	No	No	No	CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-E34G-C2	-
				Push-in spring										CJ1W-ID231 CJ1W-ID261	XW2R-P34G-C1	
					Clamp	50	45.11	98.5						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.

						Specifica	ations				(horizon ounting)		Mou	inting				
Туре	Series		Classification Po		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	Model	Standards		
		Vertical		Relay outputs		16	5A or 3A								G70D-VSOC16			
		type G70D-V		MOSFET relay outputs	NPN	(SPST- NO × 16)	0.3A	Yes	Expandable	135	46	81	Yes	Yes	G70D-VFOM16	U, C, CE		
						8 (SPST- NO × 8)	5A			68	93	44			G70D-SOC08	-		
Space- saving	G70D		Outputs	Relay outputs	NPN	16 (SPST- NO × 16)	ЗА								G70D-SOC16			
		Flat type G70D			PNP	16 (SPST- NO × 16)	ЗA	Yes	-	156	51	39	Yes	Yes	G70D-SOC16-1			
				MOSFET relay	NPN	16 (SPST-	0.3A								G70D-FOM16			
				outputs	PNP	NO × 16)	0.3A								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	-		
				AC inputs		16 (0.000				100					G7TC-IA16	U, C		
			Inputs	DC inputs	NPN	(SPST- NO × 16)	1A			182		5 68	8 Yes	_	G7TC-ID16			
Standard	G7TC					8 (SPST- NO × 8)		Yes	_	102	85				G7TC-OC08			
Standard	0/10		Outputs	Relay outputs	NPN	16 (SPST- NO × 16)	5A	163		182	85	00	163		G7TC-OC16			
					PNP	16 (SPST- NO × 16)				182					G7TC-OC16-1	-		
High-			G70A		0.4-14	Relay	NPN	16 (SPDT× 16	10 A (Terminal	No		004	75	64	Ver		G70A-ZOC16-3 (Socket only) + Relay/SSR/ MOSFET Relay/ Timer	U, C,
capacity socket		et only)	Outputs	outputs	PNP	possible with G2R Relays)	block allowable current)	No	-	234	75	64	Yes	-	G70A-ZOC16-4 (Socket only) + Relay/SSR/ MOSFET Relay/ Timer	CE		

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

## CJ1W-ID/IA

## **Mountable Racks**

	NJ sy	/stem	CJ system	(CJ1, CJ2)	CP1H system	NSJ s	ystem
Model	CPU Rack	Expansion Rack	CPU Rack	Expansion Backplane	CP1H PLC	NSJ Controller	Expansion Backplane
CJ1W-ID201							
CJ1W-ID211							
CJ1W-ID212				10 Units	Net surgested	Notourported	10 Units
CJ1W-ID231							
CJ1W-ID232	10 Units	10 Units	10 Units				
CJ1W-ID233	TO UNITS	(per Expansion Rack)	TO ONIS	(per Expansion Backplane)	Not supported	Not supported	(per Expansion Backplane)
CJ1W-ID261		,		. ,			1 /
CJ1W-ID262	1						
CJ1W-IA201	]						
CJ1W-IA111	]						

## **Specifications**

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

8-point DC Input Unit with Terminal Block
CJ1W-ID201
12 to 24 VDC
10.2 to 26.4 VDC
2.4 kΩ
10 mA typical (at 24 VDC)
8.8 VDC min./3 mA min.
3 VDC max./1 mA max.
8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1
8 independent circuits
100% simultaneously ON
20 M $\Omega$ between external terminals and the GR terminal (100 VDC)
1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
80 mA max.
110 g max.
Signal name Jxx_Ch1_ln00 COM0 to Input indicator Jxx_Ch1_ln07 2.4 kΩ Jxx_Ch1_ln07 COM7 COM7 COM7 COM7 COM7 Liput indicator Input indicator
<ul> <li>Polarity of the input power supply can be connected in either direction.</li> <li>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.</li> </ul>

\*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.

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

Rated Input Voltage 2 Rated Input Voltage 2 Range 2	CJ1W-ID211 24 VDC								
Rated Input Voltage 22	24 VDC								
lange									
	20.4 to 26.4 VDC								
nput Impedance 3	3.3 kΩ								
nput Current 7	7 mA typical (at 24 VDC)								
ON Voltage/ON Current 1	14.4 VDC min./3 mA min.								
DFF Voltage/OFF 5	5 VDC max./1 mA max.								
	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1								
	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1								
lumber of Circuits 1	16 (16 points/common, 1 circuit)								
	100% simultaneously ON (at 24 VDC) (Refer to the following illustration.)								
nsulation Resistance 2	20 M $\Omega$ between external terminals and the GR terminal (100 VDC)								
	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.								
oternal Current	80 mA max.								
Veight 1	110 g max.								
Circuit Configuration	<ul> <li>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.</li> </ul>								
	<ul> <li>Signal <u>connector</u> <u>Signal</u> <u>name</u></li> <li><u>Jxx_Ch1_In00</u> <u>A0</u> <u>B0</u> <u>Jxx_Ch1_In01</u> <u></u></li></ul>								

\*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	/DC 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 $\Omega$ 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	Signal name Jxx_Ch1_In00 to Jxx_Ch1_In15 COM COM COM COM Com Com Linput indicator 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	<ul> <li>Signal name pin r2 Signal name</li> <li>O Jxx_Ch1_In00 A0 B0 Jxx_Ch1_In01 O Jxx_Ch1_In02 A1 B1 Jxx_Ch1_In03 O Jxx_Ch1_In04 A2 B2 Jxx_Ch1_In05 O Jxx_Ch1_In06 A3 B3 Jxx_Ch1_In05 O Jxx_Ch1_In06 A3 B3 Jxx_Ch1_In07 O Jxx_Ch1_In08 A4 B4 Jxx_Ch1_In09 O Jxx_Ch1_In09 O Jxx_Ch1_In10 A5 B5 Jxx_Ch1_In10 O Jxx_Ch1_In11 O Jxx_Ch1_In15 O Jxx_Ch15 D Xx_Ch1_In15 O Jxx_Ch1_In15 O Jxx_Ch1_In15 O Jxx_Ch1_In15 O</li></ul>								
	<ul> <li>Polarity of the input power supply can be connected in either direction.</li> <li>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.</li> <li>me will be 15 μs maximum and OFF response time will be 90 μs maximum even if the response time are set to 0 ms du</li> </ul>								

\*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	4 VDC								
Rated Input Voltage Range	20.4 to 26.4 VDC								
Input Impedance	5.6 kΩ								
Input Current	.1 mA typical (at 24 VDC)								
ON Voltage/ON Current	9.0 VDC min./3 mA min.								
OFF Voltage/OFF Current	5 VDC max./1 mA max.								
ON Response Time	ms max. (Can be set to between 0 and 32 in the Setup.) *								
OFF Response Time	ms max. (Can be set to between 0 and 32 in the Setup.) *								
Number of Circuits	(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 $\Omega$ 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	Allocated Signal Clowed name Connector row A Connector row B Connector row B C								
External connection and terminal-device variable diagram	Signal Connec-Signal Allocated CIO word Allocated CIO word Allocate								

\* 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 The ON response time will be 20 µs maximum and OT response time will be 400 µs maximum even a set response time will be 400 µs maximum and OT response time will be 400 µs maximum even a set response time even a set response

## 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								
nput Impedance	5.6 kΩ								
nput 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.								
N Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *								
) FF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *								
lumber of Circuits	32 (16 points/common, 2 circuits)								
lumber of Simultaneously N Points	5% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)								
sulation Resistance	$0 \ M\Omega$ between external terminals and the GR terminal (100 VDC)								
electric Strength	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.								
ternal Current Consumption	90 mA max.								
/eight	70 g max.								
ccessories	None								
Circuit Configuration	Connector row A Connector row A Connector row A Connector row B Connector row								
External connection and terminal-device trariable diagram	Wd m+1 Wd m								

\* 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.

<sup>•</sup> 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)

	20 paint DC Input Linit with MIL Connector		
	32-point DC Input Unit with MIL Connector		
	CJ1W-ID233 24 VDC		
	20.4 to 26.4 VDC		
	5.6 kΩ		
	4.1 mA typical (at 24 VDC)		
•	19.0 VDC min./3 mA min.		
•	5 VDC max./1 mA max.		
	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *		
	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *		
	32 (16 points/common, 2 circuits)		
N POINS	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)		
	20 M $\Omega$ between external terminals and the GR terminal (100 VDC)		
-	1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.		
ternal Current onsumption	200 mA max.		
leight	70 g max.		
ccessories	None		
ircuit Configuration	Allocated Signal Connector Wd m (Jxc_Ch1_Int) Connector Wd m (Jxc_Ch2_Int) Connector Wd (Jxc_Ch2_Int) Connector Wd (Jxc_Ch2_Int) Connector Wd (Jxc_Ch2_Int) Connector Connecto		
xternal connection nd terminal-device ariable diagram	Allocated CO word Signal CO word Allocated CO word Allocated Allocated CO word Allocated CO		

\* 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.

<sup>•</sup> Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

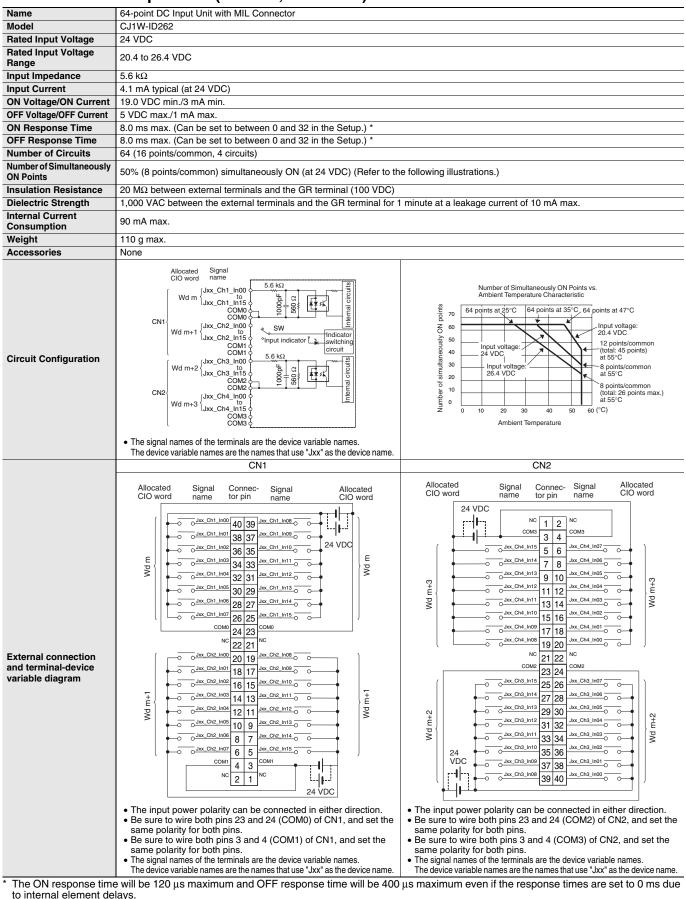
### CJ1W-ID261 DC Input Unit (24 VDC, 64 Points)

Name	64-point DC Input Unit with Fujitsu Connector			
Model	CJ1W-ID261			
Rated Input Voltage				
Rated Input Voltage Range	20.4 to 26.4 VDC			
Input Impedance	4.1 mA typical (at 24 VDC)	5.6 kΩ		
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 Number of Circuits		0 ms max. (Can be set to between 0 and 32 in the Setup.) *		
Number of Simultaneously ON Points	4 (16 points/common, 4 circuits) 0% (16 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustrations.)			
Insulation Resistance	20 M $\Omega$ 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	CN1 CN1 CN1 CN1 CN1 CN1 CN1 CN1	64 points at 35°C 64 points at 35°C 64 points at 35°C 10 put voltage: 20.4 VDC 12 points/common 1455°C 10 put voltage: 24 VDC 10 put voltage: 20.4 VDC 12 points/common 155°C 10 put voltage: 20.4 VDC 12 points/common 155°C 10 put voltage: 20.4 VDC 12 points/common 155°C 10 put voltage: 10 p		
External connection and terminal-device variable diagram	Allocated CIO word Signal Connec Signal Allocated CIO word NC Big At9 NC Big At1 At1 NC Big At1	Allocated CIO word Signal to pin Signal name COMMON ALBRING ALLOCATION ALBRING COMMON ALBRING ALBRING ALBRING COMMON ALBRING ALBRING COMMON ALBRING ALBRING COMMON ALBRING		

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)



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	l 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	0 VAC max./2 mA max.				
ON Response Time	8.0 ms max. (default setting: 8 ms) *1				
OFF Response Time	18.0 ms max. (default setting: 8 ms) *1				
Number of Circuits	8 (8 points/common, 1 circuit)				
Number of Simultaneously ON Points	00% (8 points/common) simultaneously ON				
Insulation Resistance	20 M $\Omega$ 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	) mA max.				
Weight	130 g max.				
Accessories	None				
Circuit Configuration       Input indicator         Visual configuration $Jxx_{-Ch1_{-In07}}$ 0.15 $\mu$ F $220 \Omega$					
External connection and terminal-device variable diagram	<ul> <li>The signal names of the terminals are the device variable names.</li> <li>The signal names of the terminals are the device variable names.</li> </ul>				
*1. Can be act to 0 ma	<ul> <li>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.</li> <li>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 O</li> </ul>				

\*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)

ModelCJ1Rated input voltage100Rated Input Voltage85 tInput Impedance14.5Input Current7 mON Voltage/ON Current70 NOFF Voltage/OFF20 NCurrent18 mOFF Response Time48 mNumber of Circuits16 (Number of Inputs ON100Insulation Resistance20 NDielectric Strength2,00Internal Current90 mWeight130AccessoriesNom	Signal name Input indicator		
Rated input voltage100Rated Input Voltage85 tRange14.5Input Impedance14.5Input Current7 mON Voltage/ON Current70 VOFF Voltage/OFF Current20 VON Response Time18 mOFF Response Time18 mNumber of Circuits160 (Number of Inputs ON Simultaneously100Insulation Resistance20 MDielectric Strength2,00 MConsumption90 mWeight130AccessoriesNom	to 120 VAC 50/60 Hz *2 o 132 VAC 5 kΩ (50 Hz), 12 kΩ (60 Hz) A typical (at 100 VAC, 50 Hz), A typical (at 100 VAC, 60 Hz) /AC min./4 mA min /AC max./2 mA max ms max. (default setting: 8 ms) *1 ms max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 20 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. mA max. g max. terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. Input indicator Input indicator		
Rated Input Voltage Range85 t 85 tInput Impedance14.5Input Current7 m 8 mON Voltage/ON Current70 V 70 V 70 V OFF Voltage/OFF Current20 V 70 V <br< th=""><th>o 132 VAC 5 kΩ (50 Hz), 12 kΩ (60 Hz) A typical (at 100 VAC, 50 Hz), A typical (at 100 VAC, 60 Hz) /AC min./4 mA min /AC max./2 mA max ms max. (default setting: 8 ms) *1 ms max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) //Ω between external terminals and the GR terminal (500 VDC) 20 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. mA max. g max. le</th></br<>	o 132 VAC 5 kΩ (50 Hz), 12 kΩ (60 Hz) A typical (at 100 VAC, 50 Hz), A typical (at 100 VAC, 60 Hz) /AC min./4 mA min /AC max./2 mA max ms max. (default setting: 8 ms) *1 ms max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) //Ω between external terminals and the GR terminal (500 VDC) 20 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. mA max. g max. le		
Input Impedance       14.5         Input Current       7 m         ON Voltage/ON Current       70 V         OFF Voltage/OFF       20 V         Current       18 m         ON Response Time       18 m         OFF Response Time       48 m         Number of Circuits       16 (         Number of Inputs ON       100         Simultaneously       100         Insulation Resistance       20 M         Dielectric Strength       2,00         Internal Current       90 m         Weight       130         Accessories       Nom	A typical (at 100 VAC, 50 Hz), A typical (at 100 VAC, 60 Hz) /AC min./4 mA min /AC max./2 mA max ns max. (default setting: 8 ms) *1 ns max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. le Signal Input indicator		
Input Current       7 m, 8 m         ON Voltage/ON Current       70 V         OFF Voltage/ONF       20 V         OFF Voltage/OFF       20 V         ON Response Time       18 r         Number of Circuits       16 (         Number of Circuits       16 (         Number of Circuits       16 (         Number of Circuits       100         Insulation Resistance       20 N         Dielectric Strength       2,00         Internal Current       90 r         Weight       130         Accessories       Non	A typical (at 100 VAC, 50 Hz), A typical (at 100 VAC, 60 Hz) /AC min./4 mA min /AC max./2 mA max ns max. (default setting: 8 ms) *1 ns max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. le Signal Input indicator		
OFF Voltage/OFF Current       20 V         ON Response Time       18 r         OFF Response Time       48 r         Number of Circuits       16 (         Number of Circuits       16 (         Number of Circuits       100         Insulation Resistance       20 N         Dielectric Strength       2,00         Internal Current Consumption       90 r         Weight       130         Accessories       Non	/AC max./2 mA max ns max. (default setting: 8 ms) *1 ns max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. ne Signal Input indicator In		
Current       20 V         ON Response Time       18 r         OFF Response Time       48 r         Number of Circuits       16 (         Number of Inputs ON Simultaneously       100         Insulation Resistance       20 N         Dielectric Strength       2,00         Internal Current Consumption       90 r         Weight       130         Accessories       Non	ns max. (default setting: 8 ms) *1 ns max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. ne Signal		
OFF Response Time       48 m         Number of Circuits       16 (         Number of Inputs ON       100         Simultaneously       100         Insulation Resistance       20 M         Dielectric Strength       2,00         Internal Current       90 m         Consumption       90 m         Accessories       Nom	ns max. (default setting: 8 ms) *1 16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. ne Signal Input indicator Input i		
Number of Circuits       16 (         Number of Inputs ON Simultaneously       100         Insulation Resistance       20 M         Dielectric Strength       2,00         Internal Current Consumption       90 r         Weight       130         Accessories       Non         Circuit Layout       • T	16 points/common, 1 circuit) % simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. ne Signal Input indicator Input indicator		
Number of Inputs ON Simultaneously     100       Insulation Resistance     20 M       Dielectric Strength     2,00       Internal Current Consumption     90 r       Weight     130       Accessories     Non	% simultaneously ON (16 points/common) MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. terminal Signal Input indicator Input indicat		
Simultaneously     100       Insulation Resistance     20 M       Dielectric Strength     2,00       Internal Current Consumption     90 r       Weight     130       Accessories     Non       Circuit Layout     • T	MΩ between external terminals and the GR terminal (500 VDC) 00 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. le Signal name Input indicator		
Dielectric Strength       2,00         Internal Current       90 r         Weight       130         Accessories       Non         Circuit Layout       • T	20 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. nA max. g max. le Signal name Input indicator		
Internal Current Consumption     90 r       Weight     130       Accessories     Non       Circuit Layout     • T	nA max. g max. ne Signal Input indicator		
Consumption     90 r       Weight     130       Accessories     Non       Circuit Layout     • T	g max. ne Signal name Input indicator		
Accessories Non Circuit Layout • T	Signal Input indicator		
Circuit Layout	Signal name Input indicator		
•т	name Input indicator		
	Input indicator Υ		
External connection and terminal-device variable diagram	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		

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

### 16-point Input Unit

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

### 64-point Input Unit

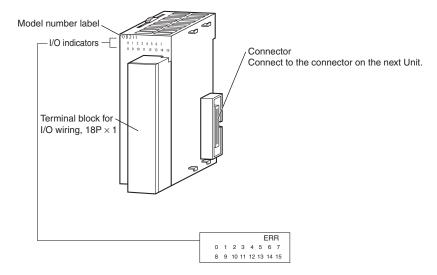
Allocate	d CIO word	
CIO	Bit	Signal name (CJ/NJ)
	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
Wd m (Input)	:	:
(input)	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
Wd m+1 (Input)	:	:
(input)	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15
	00	IN0/Jxx_Ch3_In00
	01	IN1/Jxx_Ch3_In01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

### 32-point Input Unit

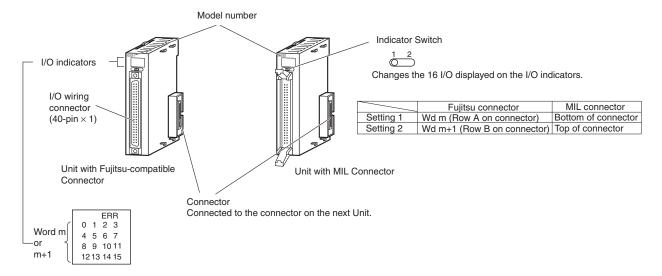
Allocated	Allocated CIO word	
CIO	Bit	Signal name (CJ/NJ)
	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
Wd m (Input)	:	:
(	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
Wd m+1 (Input)	:	:
(put)	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15

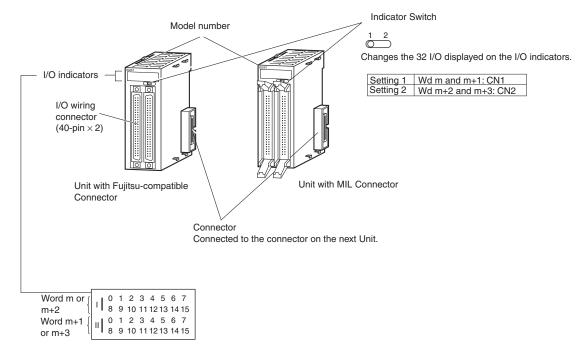
## **External Interface**

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



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





## 64-point Units (Models with Two 40-point Fujitsu 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 <sup>2</sup> )

#### **Crimp terminals**

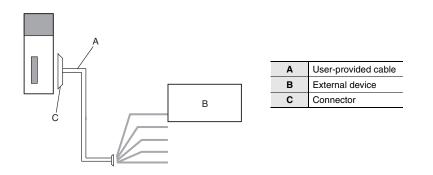
Use crimp terminals (M3) having the dimensions shown below.



### I/O Unit Wiring Methods

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

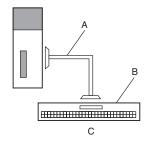
- 1. User-provided Cable
- An I/O Unit can be directly connected to an external device by using a connector.



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.

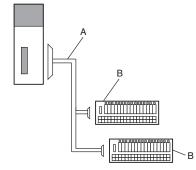


	Α	Connecting Cable for Connector-Terminal Block Conversion Unit XW2Z	
	в	Connector-Terminal Block Conversion Unit XW2R	
	С	Conversion to a screw terminal block	
_	•		

#### 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.



Α	A G79 I/O Relay Terminal Connecting Cable		
в	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	40	

#### 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	FRC5-A040-3T0S	

### Wire Size

We recommend using cable with wire gauges of AWG 24 or AWG 28 (0.2 mm<sup>2</sup> to 0.08 mm<sup>2</sup>). 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 crimping tools for MIL connectors.

**Tools for Crimped Connectors (OMRON)** 

Product Name	Model
Crimping Tool	XY2B-0002
Attachment	XY2B-1007

## 2. Connecting Connector-Terminal Block Conversion Units

### **Connection Patterns for Connector-Terminal Block Conversion Units**

Pattern	Configuration	Number of connectors	Branching
A	Connecting Cable Connector-Terminal Block Conversion Unit 40 or 60 terminals	1	None
В	Connecting Cable Connector-Terminal Block Conversion Unit 40 or 60 terminals	2	None

### 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
						XW2R-J34G-C1
CJ1W-ID231	32 inputs	1 Fujitsu connector	NPN/PNP	А	XW2Z-□□B	XW2R-E34G-C1
						XW2R-P34G-C1
						XW2R-J34G-C2
CJ1W-ID232	32 inputs	1 MIL connector	NPN/PNP	А	XW2Z-□□□K	XW2R-E34G-C2
						XW2R-P34G-C2
		1 MIL connector	NPN/PNP	A	XW2Z-□□K	XW2R-J34G-C2
CJ1W-ID233	32 inputs					XW2R-E34G-C2
						XW2R-P34G-C2
		2 Fujitsu connectors	NPN/PNP	В		XW2R-J34G-C1 (2 Units)
CJ1W-ID261	64 inputs				XW2Z-DDB (2 Cables)	XW2R-E34G-C1 (2 Units)
						XW2R-P34G-C1 (2 Units)
			NPN/PNP	В		XW2R-J34G-C2 (2 Units)
CJ1W-ID262	64 inputs	2 MIL connectors			XW2Z-DDK (2 Cables)	XW2R-E34G-C2 (2 Units)
						XW2R-P34G-C2 (2 Units)

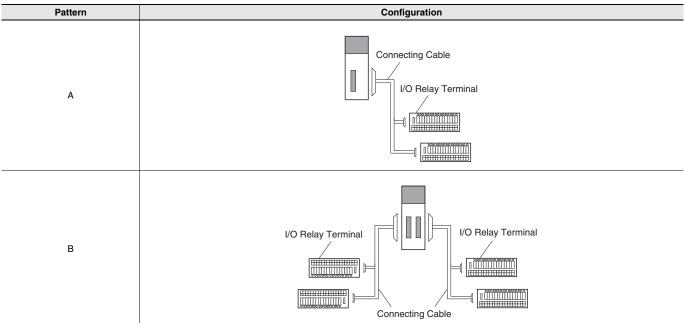
### **Types of Connecting Cables**

Appearance	Connectors	Model	Cable lenght [m]
XW2Z-□□B		XW2Z-050B	0.5
		XW2Z-100B	1
	One 40-pin Connector Made by Fujitsu Component, Ltd.	XW2Z-150B	1.5
	to One 40-pin MIL Connector	XW2Z-200B	2
and the second sec		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

## CJ1W-ID/IA

## 3. Connecting I/O Relay Terminals

### **Connection Patterns for I/O Relay Terminals**



### 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	NPN	А	2	G79-I□C-□	G7TC-ID16
CJ1W-ID231	32 inputs	connector	INFIN	A	2	G79-I□C-□	G7TC-IA16
	1W-ID232 32 inputs 1 MIL		NPN	А	2	G79-O□-□-D1	G7TC-ID16
CJ1W-ID232		1 MIL connector	INPIN	A	2	G79-O□-□-D1	G7TC-IA16
CJ1W-ID233	D233 32 inputs 1 M	1 MIL connector	NPN	A	2	G79-O□-□-D1	G7TC-ID16
CJ1W-ID233				А	2	G79-O□-□-D1	G7TC-IA16
	C4 incuto	nputs 2 Fujitsu connectors		В	2	G79-I□C-□	G7TC-ID16
CJ1W-ID201	CJ1W-ID261 64 inputs		NPN	В	2	G79-I□C-□	G7TC-IA16
		2 MIL		В	2	G79-O□-□-D1	G7TC-ID16
CJ1W-ID262	CJ1W-ID262 64 inputs		NPN	В	2	G79-O□-□-D1	G7TC-IA16

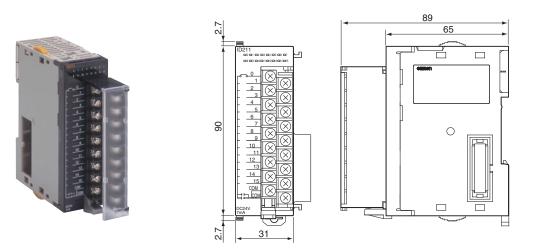
### Types of Connecting Cables

Cable lenght	G79-⊟C	G79-I⊟C	G79-I□C-□	G79-O⊟C	G79-0□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)

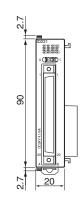
CJ1W-ID201 CJ1W-ID211 CJ1W-ID212 CJ1W-IA201 CJ1W-IA111

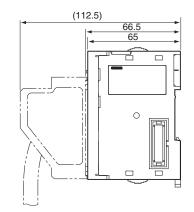


## 32-point Units (Input Units)

With Fujitsu-compatible Connector (40-pin  $\times$  1) CJ1W-ID231

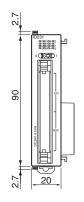


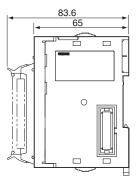




With MIL Connector (40-pin  $\times$  1) CJ1W-ID232 CJ1W-ID233





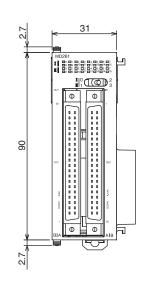


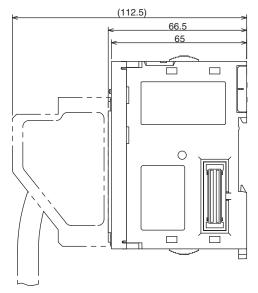
(Unit: mm)

## 64-point Units (Input Units)

With Fujitsu-compatible Connector (40-pin  $\times$  2) CJ1W-ID261

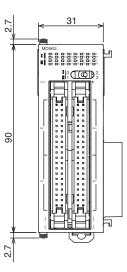


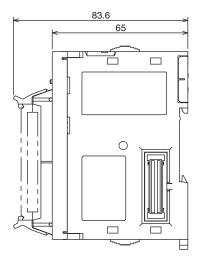




With MIL Connector (40-pin  $\times$  2) CJ1W-ID262







## **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 C, 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 • Installation and miring • Maintenance and inspection Use this manual together with the NJ-series CPU Unit <i>Software User's Manual</i> (Cat. No. W501).

Read and understand this catalog.

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