CJ-series Input Units CJ1W-ID/IA

CSM_CJ1W-ID_IA_DS_E_11_5

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: 15 μ s, OFF Response Time: 90 μ s
- 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

	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	
	ART	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	Remarks	Applicable Units	Model	Standards
	Soldered	FCN-361J040-AU Connector FCN-360C040-J2 Connector Cover	Fujitsu Connectors: CJ1W-ID231(32 inputs): 1 per Unit	C500-CE404	
40-pin Connectors	Crimped	FCN-363J040 Housing FCN-363J-AU Contactor FCN-360C040-J2 Connector Cover	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-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 Socket FCN-363J-AU Contactor FCN-360C024-J2 Connector Cover	Fujitsu Connectors: CJ1W-MD231 (16 inputs, 16 outputs): 2 per Unit	C500-CE242	
	Pressure welded	FCN-367J024-AU/F		C500-CE243	1

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	Pressure welded	FRC5-AO40-3TOS	MIL Connectors: CJ1W-ID232/233 (32 inputs): 1 per Unit CJ1W-OD232/233/234 (32 outputs):1 per Unit	XG4M-4030-T	
Connectors	Crimped	-	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	XG5N-401*	
20-pin	Pressure welded	FRC5-AO20-3TOS	MIL Connectors:	XG4M-2030-T	
Connectors	Crimped	-	CJ1W-MD232/233 (16 inputs, 16 outputs): 2 per Unit	XG5N-201*	

⁶ Crimp Contacts are also required. Refer to page 20 for details.

Applicable Connector-Terminal Block Conversion Units

		Number	Wiring	Terminal		Size		Mou	nting	Common	Bleeder				
Туре	Series	Number of poles	method	type	Depth (mm)	Height (mm)	Width (mm)	DIN Track Screws terminals re		resistance	Indicators I/O Units		Model *	Standards	
			Phillips screw										CJ1W-ID231 CJ1W-ID261	XW2R-J34GD-C1	
			State State State	МЗ	50	48.05	130.7						CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-J34GD-C2	
			Slotted screw (rise up)	МЗ									CJ1W-ID231 CJ1W-ID261	XW2R-E34GD-C1	
PLCs	XW2R	34		(European type)	50	44.81	98.5	Yes	Yes No I	No	No		CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-E34GD-C2	-
			Push-in spring										CJ1W-ID231 CJ1W-ID261	XW2R-P34GD-C1	1
				Clamp	50	44.81	98.5						CJ1W-ID232 CJ1W-ID233 CJ1W-ID262	XW2R-P34GD-C2	

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

* Representative models only. For details, refer to the XW2R series catalog (Cat. No. G077).

Connecting Cables for Connector-Terminal Block Conversion Units

Appearance	Connectors	Cable lenght [m]	Model
XW2Z-DDPF		0.5	XW2Z-050PF
		1	XW2Z-100PF
	One 40 pin Evilter: Connector to One 40 pin Mill Connector	1.5	XW2Z-150PF
	One 40-pin Fujitsu Connector to One 40-pin MIL Connector	2	XW2Z-200PF
		3	XW2Z-300PF
		5	XW2Z-500PF
XW2Z-DDPM		0.5	XW2Z-050PM
		1	XW2Z-100PM
		1.5	XW2Z-150PM
	One 40-pin MIL Connector to One 40-pin MIL Connector	2	XW2Z-200PM
		3	XW2Z-300PM
		5	XW2Z-500PM

				S	pecifications			Size (horizontal mounting)			Mounting				
Туре	Series	Classification Po		Polarity	Polarity Number of points		Rated ON currentat contacts		Horizontal (mm) Vertical Height (mm)		DIN Track Screws		Model	Standards	
				NPN									G70V-SID16P *4		
		Inputs	DC inputs	PNP	16	50 mA							G70V-SID16P-1 *4		
Push-In	G70V	0V		NPN	(SPSTNO × 16)	0011							G70V-SID16P-C16 *5	UC, CE	
Plus erminal				PNP			24 VDC	143	90	56	Yes	Yes	G70V-SID16P-1-C16 *5	(TÜV	
block	Constant Constant			NPN PNP		6 A/point,							G70V-SOC16P *4	certified)	
		Outputs	Relay outputs	NPN	16 (SPDT × 16)	10 Å/							G70V-SOC16P-1 *4 G70V-SOC16P-C4 *6		
			ouipulo	PNP		common							G70V-SOC16P-C4 6	-	
			AC				100/(110) VAC						G7TC-IA16 AC100/110		
			inputs				200/(220) VAC						G7TC-IA16 AC200/220	-	
		Inputs		NPN	16	1A	12 VDC	182					G7TC-ID16 DC12	-	
	G7TC		DC		(SPSTNO × 16)		24 VDC						G7TC-ID16 DC24	-	
	G/IC		inputs				100/110 VDC				Yes		G7TC-ID16 DC100/110	U, C	
Standard	mananan				8		12 VDC	100	85	68		No	G7TC-OC08 DC12		
		Outputs	Relay		(SPSTNO × 8)		24 VDC	102					G7TC-OC08 DC24		
				NPN	16	5A	12 VDC						G7TC-OC16 DC12		
		Outputs	outputs		$(\text{SPSTNO} \times 16)$	54	24 VDC	182					G7TC-OC16 DC24		
				PNP	16		12 VDC	102					G7TC-OC16-1 DC12		
					(SPSTNO × 16)		24 VDC						G7TC-OC16-1 DC24		
ligh-	G70A *1 (Socket only)	Inputs	Relay inputs	NPN/ PNP	16 (SPDT × 16	100 mA	110 VDC max., 240 VAC max. *2						G70A-ZOC16-5	U, C, CE	
apacity ocket	4	Outputs	OUTDUTS	possible with G2R Relays)	10 A (Ter- minal block al-	24 VDC	234	75	64	Yes	No	G70A-ZOC16-3	(VDE certified)		
			oupuio	PNP		lowable							G70A-ZOC16-4		
	Vertical type G70D-V		Relay outputs			5 A or 3 A *3							G70D-VSOC16		
			MOSFET relay outputs	NPN	16 (SPSTNO × 16)	0.3 A		135	46	81	Yes	Yes	G70D-VFOM16	U, C, CE (VDE certified)	
Space-	Flat type G70D	Outputs			8 (SPSTNO × 8)	5 A	24 VDC	68	93	44			G70D-SOC08		
saving	Autor	Culputo	Relay outputs	NPN	16 (SPSTNO × 16)	3 A							G70D-SOC16	-	
	annun .			PNP	16 (SPSTNO × 16)	3 A		150			Yes	Yes	G70D-SOC16-1	_	
				MOSFET	NPN	16		-	156	51	39			G70D-FOM16	
	Telittatititi		relay outputs	PNP		0.3 A							G70D-FOM16-1	_	
High- capacity, space- saving	G70R	Outputs	Relay outputs	NPN	8 (SPSTNO × 8)	10 A	24 VDC	136	93	55	Yes	Yes	G70R-SOC08	_	

Applicable I/O Relay Terminals

*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.

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

Туре	Name	I/O Classification	Appearance	Cable leng	gth L (mm)	Models
			A side B side	1,0	000	XW2Z-R100C
	Cables with Connectors		Device end I/O Relay Terminal	1,5	500	XW2Z-R150C
Fujitsu connectors (24 pins)	(1:1)	16 I/O points		2,000		XW2Z-R200C
	XW2Z-R□C			3,0	000	XW2Z-R300C
			L	5,0	000	XW2Z-R500C
				(A) 1,000	(B) 750	XW2Z-RI100C-75
		32 input points	A side B side	(A) 1,500	(B) 1,250	XW2Z-RI150C-125
			Device end I/O Relay Terminal	(A) 2,000	(B) 1,750	XW2Z-RI200C-175
	Cables with Connectors			(A) 3,000	(B) 2,750	XW2Z-RI300C-275
Fujitsu connectors (40 pins)	(1:2)			(A) 5,000	(B) 4,750	XW2Z-RI500C-475
	XW2Z-RI□C-□			(A) 1,000	(B) 750	XW2Z-RO100C-75
	XW2Z-RO□C-□			(A) 1,500	(B) 1,250	XW2Z-RO150C-125
		32 output points	(B)	(A) 2,000	(B) 1,750	XW2Z-RO200C-175
			Straight length (without bends)	(A) 3,000	(B) 2,750	XW2Z-RO300C-275
				(A) 5,000	(B) 4,750	XW2Z-RO500C-475
	Cables with Connectors		A side B side	2	50	XW2Z-RI25C
(III) (00 i	(1:1) XW2Z-RI□C	16 I/O points	Device end I/O Relay Terminal	50	00	XW2Z-RI50C
AIL connectors (20 pins)				2	50	XW2Z-RO25C
	XW2Z-RO□C		L	500		XW2Z-RO50C
				(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 side B side	(A) 1,500	(B) 1,250	XW2Z-RO150-125-D1
			Device end I/O Relay Terminal	(A) 2,000	(B) 1,750	XW2Z-RO200-175-D1
	Cables with Connectors		(A)	(A) 3,000	(B) 2,750	XW2Z-RO300-275-D1
/IL connectors (40 pins)	(1:2)	32 I/O points		(A) 5,000	(B) 4,750	XW2Z-RO500-475-D1
	XW2Z-RO□-□-D1,			(A) 500	(B) 250	XW2Z-RI50-25-D1
	XW2Z-RI□-□-D1			(A) 750	(B) 500	XW2Z-RI75-50-D1
			(B)	(A) 1,000	(B) 750	XW2Z-RI100-75-D1
			Straight length (without bends)	(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

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

Specifications

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

Jnit with Terminal Block
24 VDC)
A min.
max.
be set to between 0 and 32 ms in the Setup.) *1
be set to between 0 and 32 ms in the Setup.) *1
cuits
usiy ON
en external terminals and the GR terminal (100 VDC)
en the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.
Signal name Jxx_Ch1_In00 0 2.4 kΩ COM0 0 Input indicator Jxx_Ch1_In07 0 2.4 kΩ Jxx_Ch1_In07 0 2.4 kΩ COM7 0 Input indicator Input indicator Input indicator Input indicator Input indicator
signal needor signal needor si
n e a

*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)

Name	16-point DC Input Unit with Terminal Block							
Model	CJ1W-ID211							
Rated Input Voltage	24 VDC							
Rated Input Voltage Range	20.4 to 26.4 VDC							
Input Impedance	3.3 kΩ							
Input Current	7 mA typical (at 24 VDC)							
ON Voltage/ON Current	14.4 VDC min./3 mA min.							
OFF Voltage/OFF Current	5 VDC max./1 mA max.							
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1							
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 ms in the Setup.) *1							
Number of Circuits	16 (16 points/common, 1 circuit)							
Number of Simultaneously ON Points	100% simultaneously ON (at 24 VDC) (Refer to the following illustration.)							
Insulation Resistance	20 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	Signal name Jxx_Ch1_In00 to Jxx_Ch1_In15 COM COM COM 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 device variable names are the names that use "Jxx" as the device name.							
External connection and terminal-device variable diagram	 Signal <u>pin 2</u> Signal <u>name</u> Signal <u>pin 2</u> Signal <u>name</u> Jxx_Ch1_In00 A0 B0 Jxx_Ch1_In01 Jxx_Ch1_In02 A1 B1 Jxx_Ch1_In03 Jxx_Ch1_In04 A2 B2 Jxx_Ch1_In05 Jxx_Ch1_In06 A3 B3 Jxx_Ch1_In07 Jxx_Ch1_In08 A4 B4 Jxx_Ch1_In07							

*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
nput Impedance	3.3 kΩ
nput 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	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	Signal name Connector Signal name Signal name Connector Signal name O Jxx_Ch1_In00 A0 B0 Jxx_Ch1_In01 O O Jxx_Ch1_In02 A1 B1 Jxx_Ch1_In03 O Jxx_Ch1_In04 A2 B2 Jxx_Ch1_In05 Jxx_Ch1_In08 A3 B3 Jxx_Ch1_In07 O Jxx_Ch1_In08 A4 B4 Jxx_Ch1_In09 O O Jxx_Ch1_In10 A5 B5 Jxx_Ch1_In12 A6 B6 Jxx_Ch1_In13 O Jxx_Ch1_In14 A7 B7 Jxx_Ch1_In15 O M88 COM

*1. The ON response time will be 15 µs maximum and OFF response time will be 90 µs maximum even if the response time are set to 0 ms due to internal element delays.
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on

the Units.

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

Name	32-point DC Input Unit with Fujitsu Connector							
Model	CJ1W-ID231							
Rated Input Voltage	24 VDC							
Rated Input Voltage Range	20.4 to 26.4 VDC							
Input Impedance	5.6 kΩ							
Input Current	4.1 mA typical (at 24 VDC)							
ON Voltage/ON Current	19.0 VDC min./3 mA min.							
OFF Voltage/OFF Current	5 VDC max./1 mA max.							
ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *							
OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *							
Number of Circuits	32 (16 points/common, 2 circuits)							
Number of Simultaneously ON Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)							
Insulation Resistance	20 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	Allocated Signal ClO word Name Connector row A Connector Connector Wd m Jux_Ch1_Into Como Comector Wd m Jux_Ch2_Into Como Comector Wd m Jux_Ch2_Into Como Comector Tow B Comector Tow B Comector Comector Tow B Comector							
External connection and terminal-device variable diagram	Signal Connec-Signal Allocated CIO word CIO WI CIO WI CIO WI CIO WI CIO WI CIO WI CIO WI CIO CIO WI CIO CIO CIO CIO CIO CIO CIO CIO CIO CIO							

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

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

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

Name	32-point DC Input Unit with MIL Connector		
lodel	CJ1W-ID232		
ated Input Voltage	24 VDC		
ated Input Voltage Range	20.4 to 26.4 VDC		
put Impedance	5.6 kΩ		
put Current	4.1 mA typical (at 24 VDC)		
N 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.) *		
umber of Circuits	32 (16 points/common, 2 circuits)		
umber of Simultaneously N Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)		
sulation Resistance	$20 \text{ M}\Omega$ min. between external terminals and the GR terminal (100 VDC)		
ielectric 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		
ircuit Configuration	Connector row A Connector row B Connector row		
xternal connection nd terminal-device ariable diagram	Allocates CIO word $ \begin{array}{c} $		
	 The input power polarity can be connected in either direction. Be sure to wire both pins 23 and 24 (COM0), and set the same polarity for both pins. Be sure to wire both pins 3 and 4 (COM1), and set the same polarity for both pins. The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name. 		

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

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

Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
Use a sensor with a minimum load current of 3 mA min.

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

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

Name	32-point DC Input Unit with MIL Connector		
Model	CJ1W-ID233		
Rated Input Voltage			
Rated Input Voltage Range	20.4 to 26.4 VDC		
Input Impedance	5.6 kΩ		
Input Current	4.1 mA typical (at 24 VDC)		
ON Voltage/ON Current	19.0 VDC min./3 mA min.		
OFF Voltage/OFF Current ON Response Time	5 VDC max./1 mA max. 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	32 (16 points/common, 2 circuits)		
ON Points	75% (12 points/common) simultaneously ON (at 24 VDC) (Refer to the following illustration.)		
nsulation 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.		
nternal Current Consumption	200 mA max.		
Weight	70 g max.		
Accessories	None		
	Allocated Signal		
Circuit Configuration	Connector row A Connector row B Connector row B Connector Connector row B Connector Connector row B Connector		
External connection and terminal-device variable diagram	Allocated ClO word Signal name Connec- tor pin Signal name Allocated ClO word 24 VDC NC 1 2 NC COM1 3 4 COM1 3 4 COM1 3 4 COM1 3 4 COM1 0		
	 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 44 (COM1), and set the same polarity for both pins. The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name. 		

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

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

Make sure the input power supply voltage is larger than the ON voltage (19 V) plus the residual voltage of the sensor (approx. 3 V).
Use a sensor with a minimum load current of 3 mA min.

[•] Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

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

Name	64-point DC Input Unit with Fujitsu Connector		
Model	CJ1W-ID261		
Rated Input Voltage	24 VDC 20.4 to 26.4 VDC		
Rated Input Voltage Range	20.4 to 26.4 vDC		
Input Impedance	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	he following illustrations.)	
Insulation Resistance	20 M Ω min. between external terminals and the GR terminal (100 VE	DC)	
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 Connector row A CN2 CN2 CN2 CN2 CN2 CN2 CN1 Connector row B CN1 CONN CO	64 points at 35°C 10 points at 35°C 12 points/common at 55°C 10 points/common at 55°C	
	The device variable names are the names that use "Jxx" as the device name. CN1	CN2	
External connection and terminal-device variable diagram	Allocated CIO word Allocated CIO word NC Bignal NC Com Bignal NC Com NC N	Allocated CIO word CIO word CIO word CIO word CIO word CIO word CIO word CIO word CIO word Allocated CIO word Allocated Allocated CIO word Allocated Allocachalnino Allocate	

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	21 kΩ (50 Hz), 18 kΩ (60 Hz)		
Input Current	9 mA typical (at 200 VAC, 50 Hz), 11 mA typical (at 200 VAC, 60 Hz)		
ON Voltage/ON Current	120 VAC min./4 mA min.		
OFF Voltage/OFF Current	40 VAC max./2 mA max.		
ON Response Time	18.0 ms max. (default setting: 8 ms) *1		
OFF Response Time	48.0 ms max. (default setting: 8 ms) *1		
Number of Circuits	8 (8 points/common, 1 circuit)		
Number of Simultaneously ON Points	100% (8 points/common) simultaneously ON		
Insulation Resistance	20 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	Input indicator Jxx_Ch1_In00 Jxx_Ch1_In07 O.15 μF COM COM 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	Connec- tor pin ? Signal name NC A0 B0 Jxx_Ch1_In00 NC A1 B1 Jxx_Ch1_In01 NC A2 B2 Jxx_Ch1_In02 NC A3 B3 Jxx_Ch1_In02 NC A4 B4 Jxx_Ch1_In04 NC A5 B5 Jxx_Ch1_In05 NC A6 B6 Jxx_Ch1_In07 NC A8 B8 COM		

*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 55 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)

Model	16-point AC Input Unit with Terminal Block		
	CJ1W-IA111		
nated input voltage	100 to 120 VAC 50/60 Hz *2		
Rated Input Voltage Range	15 to 132 VAC		
Input Impedance	4.5 kΩ (50 Hz), 12 kΩ (60 Hz)		
	mA typical (at 100 VAC, 50 Hz), mA typical (at 100 VAC, 60 Hz)		
ON Voltage/ON Current	0 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		
	16 (16 points/common, 1 circuit)		
Simultaneously	100% simultaneously ON (16 points/common)		
	20 M Ω min. between external terminals and the GR terminal (500 VDC)		
-	2,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max.		
Consumption	90 mA max.		
-	130 g max.		
Accessories	None		
Circuit Layout	 Signal name Input indicator Jxx_Ch1_In00 Jxx_Ch1_In15 0.22 µF 270 Ω 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	Signal connector pints Signal name		

*1. Can be set to 0 ms, 0.5 ms, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, or 32ms in the settings. When the response times have been set to 0 ms, the ON response time will be 10 ms maximum and the OFF response time will be 55 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		Circul name (C I/N I)
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 (C I/N I)
CIO	Bit	Signal name (CJ/NJ)
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

Allocate		
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 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)	:	:
(14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
Wd m+1 (Input)	:	:
	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 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.



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.



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.



I/O Relay Terminals G70V, G7TC Relay Terminals G70D, G70R I/O Terminal Socket G70A Or. conversion to relay outputs and AC inputs.	Α	Connecting Cable for I/O Relay Terminals XW2Z-R
-,	В	G70V, G7TC Relay Terminals G70D, G70R I/O Terminal Socket

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 *1	FRC5-A040-3T0S
	40	XG5N-401 *2	HU-40OS2-001
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 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							
						XW2R-J34GD-C1	Phillips screw								
CJ1W-ID231	32 inputs	1 Fujitsu connector	NPN/PNP	А	XW2Z-DDDPF	XW2R-E34GD-C1	Slotted screw (rise up)	No							
						XW2R-P34GD-C1	Push-in spring								
						XW2R-J34GD-C2	Phillips screw								
CJ1W-ID232	32 inputs	1 MIL connector	NPN/PNP	А	XW2Z-DDDPM	XW2R-E34GD-C2	Slotted screw (rise up)	No							
		0011100101					XW2R-P34GD-C2	Push-in spring	1						
						XW2R-J34GD-C2	Phillips screw								
CJ1W-ID233	CJ1W-ID233 32 inputs 1 MIL connector NPN	32 inputs	uts 1 MIL	19						NPN/PNP	А	XW2Z-DDDPM	XW2R-E34GD-C2	Slotted screw (rise up)	No
					XW2R-P34GD-C2	Push-in spring									
						XW2R-J34GD-C1 (2 Units)	Phillips screw								
CJ1W-ID261	64 inputs	2 Fujitsu connectors	NPN/PNP B	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	в	XW2Z-DDPF (2 pcs)	XW2R-E34GD-C1 (2 Units)	Slotted screw (rise up)	No			
		connectore						1		(2 000)	XW2R-P34GD-C1 (2 Units)	Push-in spring			
	11W-ID262 64 inputs	4 inputs 2 MIL connectors NPN/PN				XW2R-J34GD-C2 (2 Units)	Phillips screw								
CJ1W-ID262			NPN/PNP	в	XW2Z-□□PM (2 pcs)	XW2R-E34GD-C2 (2 Units)	Slotted screw (rise up)	No							
				(2		(= poo)	XW2R-P34GD-C2 (2 Units)	Push-in spring	1						

The box □ is replaced by the cable length.
 Note: For details, refer to the XW2R series catalog (Cat. No. G077).

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

*1. The box \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 separetely. (with G2R Relays mounted: SPDT × 16)

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-CPU0□	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 • Maintenance and inspection Use this manual together with the NJ-series CPU Unit <i>Software User's Manual</i> (Cat. No. W501).

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