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A Wide Range of Basic Mixed I/O Units for Different Applications and Wiring Methods

• One Mixed I/O Unit has connectors for both inputs and outputs. Use Mixed I/O Units to easily build space-saving systems.

| CJ1W-MD231 | CJ1W-MD261 | CJ1W-MD563 |

Features

• Select the best interface for each application: Fujitsu connectors and MIL connectors.
• Select sinking outputs or sourcing outputs. The CJ1W-MD232 has load short-circuit protection.
• The ON and OFF response times can be set to between 0 and 32 ms in the Setup in the CPU Unit.
• Mixed I/O Units with 5-V TTL inputs are also available. *
• A wide variety of Connector-Terminal Block Conversion Units are available to allow you to easily wire external I/O devices.

* Applies to the CJ1W-MD563.

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.

Mixed I/O Units

Unit type	Product name	Specifications							Current consumption (A)		Model	Standards
		Output type	I/O points	Input voltage, Input current / Maximum switching capacity		Commons	External connection	No. of words allocated	5 V	24 V		
CJ1 Basic I/O Units	DC Input/ Transistor Output Units	Sinking	16 inputs	24 VDC, 7 mA		16 points, 1 common	Fujitsu connector	2 words	0.13	–	CJ1W-MD231	UC1, N, CE
			16 outputs	250 VAC/24 VDC, 0.5 A		16 points, 1 common						
		Sinking	16 inputs	24 VDC, 7 mA		16 points, 1 common	MIL connector	2 words	0.13	–	CJ1W-MD233	
			16 outputs	12 to 24 VDC, 0.5 A		16 points, 1 common						
		Sinking	32 inputs	24 VDC, 4.1 mA		16 points, 1 common	Fujitsu connector	4 words	0.14	–	CJ1W-MD261	UC1, N, CE
			32 outputs	12 to 24 VDC, 0.3 A		16 points, 1 common						
		Sinking	32 inputs	24 VDC, 4.1 mA		16 points, 1 common	MIL connector	4 words	0.14	–	CJ1W-MD263	
			32 outputs	12 to 24 VDC, 0.3 A		16 points, 1 common						
		Sourcing	16 inputs	24 VDC, 7 mA		16 points, 1 common	MIL connector	2 words	0.13	–	CJ1W-MD232	UC1, N, L, CE
			16 outputs	24 VDC, 0.5 A Short-circuit protection		16 points, 1 common						
	TTL I/O Units	–	32 inputs	5 VDC, 35 mA		16 points, 1 common	MIL connector	4 words	0.19	–	CJ1W-MD563	UC1, N, CE
			32 outputs	5 VDC, 35 mA		16 points, 1 common						

Accessories

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

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

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

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

Name	Connection	Remarks	Applicable Units	Model	Standards
40-pin Connectors	Pressure welded	FRC5-AO40-3TOS	MIL Connectors: CJ1W-ID232 (32 inputs): 1 per Unit CJ1W-OD232/233 (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.
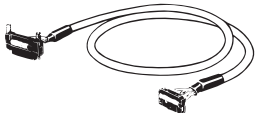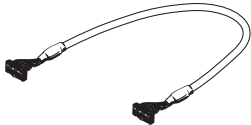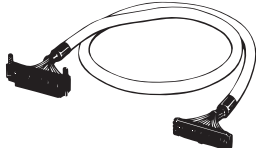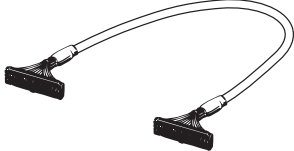
Applicable Connector-Terminal Block Conversion Units

Type	Series	Number of poles	Wiring method	Terminal type	Size			Mounting		Common terminals	Bleeder resistance	Indicators	I/O Units	Model *	Standards
					Depth (mm)	Height (mm)	Width (mm)	DIN Track	Screws						
General-purpose devices, PLC	XW2R	20	Phillips screw	M3	50	48.05	81.7	Yes	–	No	No	No	CJ1W-MD231 CJ1W-MD232 CJ1W-MD233	**XW2R-J20GD-T**	—
		34			50	48.05	130.7						CJ1W-MD261	**XW2R-J34GD-C1**	
														XW2R-J34GD-C3	
													CJ1W-MD263	**XW2R-J34GD-C2**	
														XW2R-J34GD-C4	
													CJ1W-MD563	**XW2R-J34GD-C2**	
														XW2R-J34GD-C4	
		20	Slotted screw (rise up)	M3 (European type)	50	48.05	81.7						CJ1W-MD231 CJ1W-MD232 CJ1W-MD233	**XW2R-E20GD-T**	
		34			50	44.81	98.5						CJ1W-MD261	**XW2R-E34GD-C1**	
														XW2R-E34GD-C3	
													CJ1W-MD263	**XW2R-E34GD-C2**	
														XW2R-E34GD-C4	
													CJ1W-MD563	**XW2R-E34GD-C2**	
														XW2R-E34GD-C4	
		20	Push-in spring	Clamp	50	48.05	81.7						CJ1W-MD231 CJ1W-MD232 CJ1W-MD233	**XW2R-P20GD-T**	
		34			50	44.81	98.5						CJ1W-MD261	**XW2R-P34GD-C1**	
														XW2R-P34GD-C3	
													CJ1W-MD263	**XW2R-P34GD-C2**	
														XW2R-P34GD-C4	
													CJ1W-MD563	**XW2R-P34GD-C2**	
														XW2R-P34GD-C4	

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-□□□A	One 24-pin Fujitsu Connector to One 20-pin MIL Connector	0.5	XW2Z-050A
		1	XW2Z-100A
		1.5	XW2Z-150A
		2	XW2Z-200A
		3	XW2Z-300A
		5	XW2Z-500A
		7	XW2Z-700A
		10	XW2Z-010A
		15	XW2Z-15MA
		20	XW2Z-20MA
XW2Z-□□□X	One 20-pin MIL Connector to One 20-pin MIL Connector	0.5	XW2Z-C50X
		1	XW2Z-100X
		2	XW2Z-200X
		3	XW2Z-300X
		5	XW2Z-500X
		10	XW2Z-010X
XW2Z-□□□PF	One 40-pin Fujitsu Connector to One 40-pin MIL Connector	0.5	XW2Z-050PF
		1	XW2Z-100PF
		1.5	XW2Z-150PF
		2	XW2Z-200PF
		3	XW2Z-300PF
		5	XW2Z-500PF
XW2Z-□□□PM	One 40-pin MIL Connector to One 40-pin MIL Connector	0.5	XW2Z-050PM
		1	XW2Z-100PM
		1.5	XW2Z-150PM
		2	XW2Z-200PM
		3	XW2Z-300PM
		5	XW2Z-500PM

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	G70V	Inputs DC inputs	NPN	16 (SPSTNO × 16)	50 mA	24 VDC	143	90	56	Yes	Yes	G70V-SID16P *4	UC, CE (TÜV 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	G7TC	Inputs AC inputs DC 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	
						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	
						24 VDC						G7TC-OC08 DC24	
				16 (SPSTNO × 16)		12 VDC	182					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	G70A *1 (Socket only)	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	NPN		10 A (Terminal block allowable)	24 VDC						G70A-ZOC16-3	
			PNP									G70A-ZOC16-4	
Space-saving	Vertical type G70D-V	Outputs	Relay outputs	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		156	51	39			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	
High-capacity, space-saving	G70R	Outputs Relay outputs	NPN	8 (SPSTNO × 8)	10 A	24 VDC	136	93	55	Yes	Yes	G70R-SOC08	–

*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

Type	Name	I/O Classification	Appearance	Cable length L (mm)		Models
Fujitsu connectors (24 pins)	Cables with Connectors (1:1) XW2Z-R□C	16 I/O points	A side Device end — B side I/O Relay Terminal ◄— L —►	1,000		**XW2Z-R100C**
				1,500		**XW2Z-R150C**
				2,000		**XW2Z-R200C**
				3,000		**XW2Z-R300C**
				5,000		**XW2Z-R500C**
Fujitsu connectors (40 pins)	Cables with Connectors (1:2) XW2Z-RI□C-□ XW2Z-RO□C-□	32 input points	A side Device end — B side I/O Relay Terminal ◄—(A)—► (120) ◄—(B)—► Straight length (without bends)	(A) 1,000	(B) 750	**XW2Z-RI100C-75**
				(A) 1,500	(B) 1,250	**XW2Z-RI150C-125**
				(A) 2,000	(B) 1,750	**XW2Z-RI200C-175**
				(A) 3,000	(B) 2,750	**XW2Z-RI300C-275**
				(A) 5,000	(B) 4,750	**XW2Z-RI500C-475**
		32 output points		(A) 1,000	(B) 750	**XW2Z-RO100C-75**
				(A) 1,500	(B) 1,250	**XW2Z-RO150C-125**
				(A) 2,000	(B) 1,750	**XW2Z-RO200C-175**
				(A) 3,000	(B) 2,750	**XW2Z-RO300C-275**
				(A) 5,000	(B) 4,750	**XW2Z-RO500C-475**
MIL connectors (20 pins)	Cables with Connectors (1:1) XW2Z-RI□C XW2Z-RO□C	16 I/O points	A side Device end — B side I/O Relay Terminal ◄— L —►	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 side Device end — B side I/O Relay Terminal ◄—(A)—► (120) ◄—(B)—► Straight length (without bends)	(A) 500	(B) 250	**XW2Z-RO50-25-D1**
				(A) 750	(B) 500	**XW2Z-RO75-50-D1**
				(A) 1,000	(B) 750	**XW2Z-RO100-75-D1**
				(A) 1,500	(B) 1,250	**XW2Z-RO150-125-D1**
				(A) 2,000	(B) 1,750	**XW2Z-RO200-175-D1**
				(A) 3,000	(B) 2,750	**XW2Z-RO300-275-D1**
				(A) 5,000	(B) 4,750	**XW2Z-RO500-475-D1**
				(A) 500	(B) 250	**XW2Z-RI50-25-D1**
				(A) 750	(B) 500	**XW2Z-RI75-50-D1**
				(A) 1,000	(B) 750	**XW2Z-RI100-75-D1**
				(A) 1,500	(B) 1,250	**XW2Z-RI150-125-D1**
				(A) 2,000	(B) 1,750	**XW2Z-RI200-175-D1**
				(A) 3,000	(B) 2,750	**XW2Z-RI300-275-D1**
				(A) 5,000	(B) 4,750	**XW2Z-RI500-475-D1**

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-MD231	10 Units	10 Units (Per Expansion Rack)	10 Units	10 Units (Per Expansion Backplane)	Not supported	Not supported	10 Units (Per Expansion Backplane)
CJ1W-MD232							
CJ1W-MD233							
CJ1W-MD261							
CJ1W-MD263							
CJ1W-MD563							

Specifications

CJ1W-MD231 DC Input/Transistor Output Unit (24 VDC, 16 Inputs/16 Outputs)

Name	16-point DC Input/16-point Transistor Output Unit with Fujitsu Connectors (Sinking Outputs)		
Model	CJ1W-MD231		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	12 to 24 VDC	Rated Input Voltage	24 VDC
Operating Load Voltage Range	10.2 to 26.4 VDC	Operating Input Voltage	20.4 to 26.4 VDC
Maximum Load Current	0.5 A/point, 2.0 A/Unit	Input Impedance	3.3 kΩ
Maximum Inrush Current	4.0 A/point, 10 ms max.	Input Current	7 mA typical (at 24 VDC)
Leakage Current	0.1 mA max.	ON Voltage/ON Current	14.4 VDC min./3 mA min.
Residual Voltage	1.5 V max.	OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	0.1 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	0.8 ms max.		
No. of Circuits	16 (16 points/common, 1 circuit)	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Fuse	None		
External Power Supply	10.2 to 26.4 VDC, 20 mA min.	No. of Circuits	16 (16 points/common, 1 circuit)
		Number of Simultaneously ON Points	75% (at 24 VDC)
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 130 mA max.		
Weight	90 g max.		
Accessories	None		

	CN1 (OUT)	CN2 (IN)
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.	 • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

External connection and terminal-device variable diagram

CN1 (OUT)

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
	NC	B12 / A12	NC	
	NC	B11 / A11	NC	
	+V	B10 / A10	+V	
	COM0 (0 V)	B9 / A9	COM0 (0 V)	
Wd m	Jxx_Ch1_Out15	B8 / A8	Jxx_Ch1_Out07	Wd m
	Jxx_Ch1_Out14	B7 / A7	Jxx_Ch1_Out06	
	Jxx_Ch1_Out13	B6 / A6	Jxx_Ch1_Out05	
	Jxx_Ch1_Out12	B5 / A5	Jxx_Ch1_Out04	
	Jxx_Ch1_Out11	B4 / A4	Jxx_Ch1_Out03	
	Jxx_Ch1_Out10	B3 / A3	Jxx_Ch1_Out02	
	Jxx_Ch1_Out09	B2 / A2	Jxx_Ch1_Out01	
	Jxx_Ch1_Out08	B1 / A1	Jxx_Ch1_Out00	

12 to 24 VDC

- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both pins A9 and B9 (COM0 (0 V)) of CN1.
- Be sure to wire both pins A10 and B10 (+V) of CN1.
- The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

CN2 (IN)

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
Wd m+1	Jxx_Ch1_In00	A1 / B1	Jxx_Ch1_In08	Wd m+1
	Jxx_Ch1_In01	A2 / B2	Jxx_Ch1_In09	
	Jxx_Ch1_In02	A3 / B3	Jxx_Ch1_In10	
	Jxx_Ch1_In03	A4 / B4	Jxx_Ch1_In11	
	Jxx_Ch1_In04	A5 / B5	Jxx_Ch1_In12	
	Jxx_Ch1_In05	A6 / B6	Jxx_Ch1_In13	
	Jxx_Ch1_In06	A7 / B7	Jxx_Ch1_In14	
	Jxx_Ch1_In07	A8 / B8	Jxx_Ch1_In15	
	COM1	A9 / B9	COM1	
	NC	A10 / B10	NC	
	NC	A11 / B11	NC	
	NC	A12 / B12	NC	

24 VDC

- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both pins A9 and B9 (COM1) 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 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.
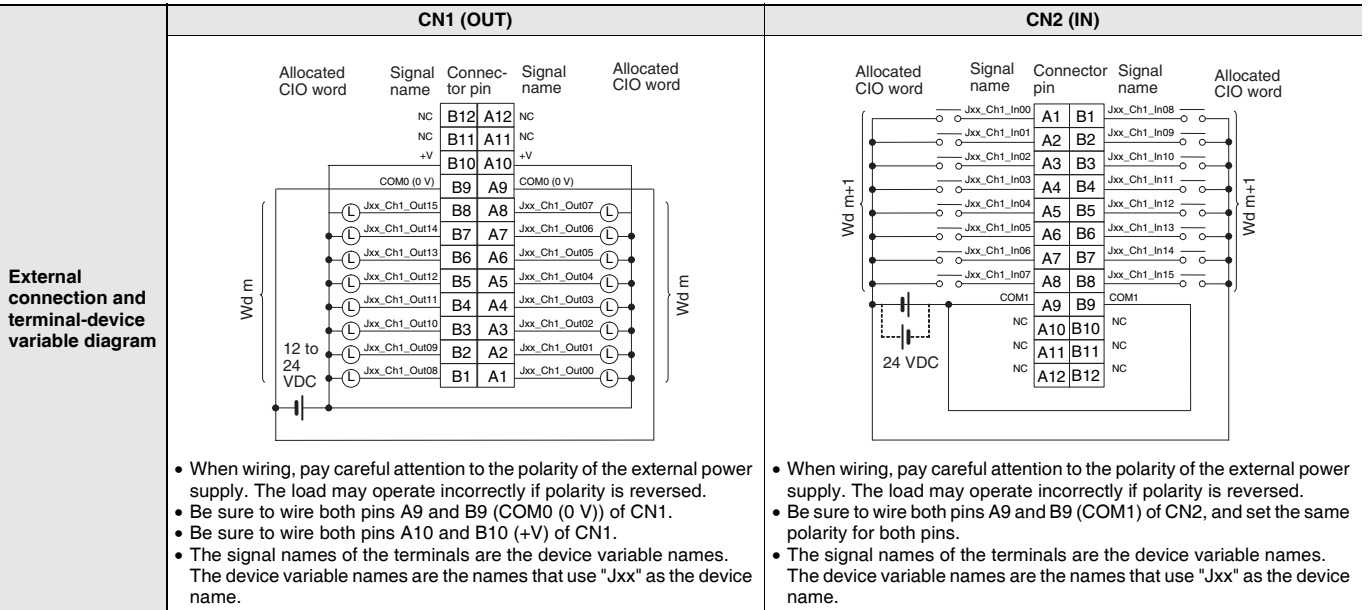
CJ1W-MD233 DC Input/Transistor Output Unit (24 VDC, 16 Inputs/16 Outputs)

Name	16-point DC Input/16-point Transistor Output Unit with MIL Connectors (Sinking Outputs)		
Model	CJ1W-MD233		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	12 to 24 VDC	Rated Input Voltage	24 VDC
Operating Load Voltage Range	10.2 to 26.4 VDC	Operating Input Voltage	20.4 to 26.4 VDC
Maximum Load Current	0.5 A/point, 2.0 A/Unit	Input Impedance	3.3 kΩ
Maximum Inrush Current	4.0 A/point, 10 ms max.	Input Current	7 mA typical (at 24 VDC)
Leakage Current	0.1 mA max.	ON Voltage/ON Current	14.4 VDC min./3 mA min.
Residual Voltage	1.5 V max.	OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	0.1 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	0.8 ms max.		
No. of Circuits	16 (16 points/common, 1 circuit)	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Fuse	None		
External Power Supply	10.2 to 26.4 VDC, 20 mA min.	No. of Circuits	16 (16 points/common, 1 circuit)
		Number of Simultaneously ON Points	75% (at 24 VDC)
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 130 mA max.		
Weight	90 g max.		
Accessories	None		

Circuit Configuration	CN1 (OUT)	CN2 (IN)
		 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.	• 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.

CN1 (OUT)	CN2 (IN)

External connection and terminal-device variable diagram

CN1 (OUT):
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both terminals 3 and 4 (COM0 (0 V)) of CN1.
- Be sure to wire both terminals 1 and 2 (+V) of CN1.
- The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

CN2 (IN):
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both pins 3 and 4 (COM1) 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.
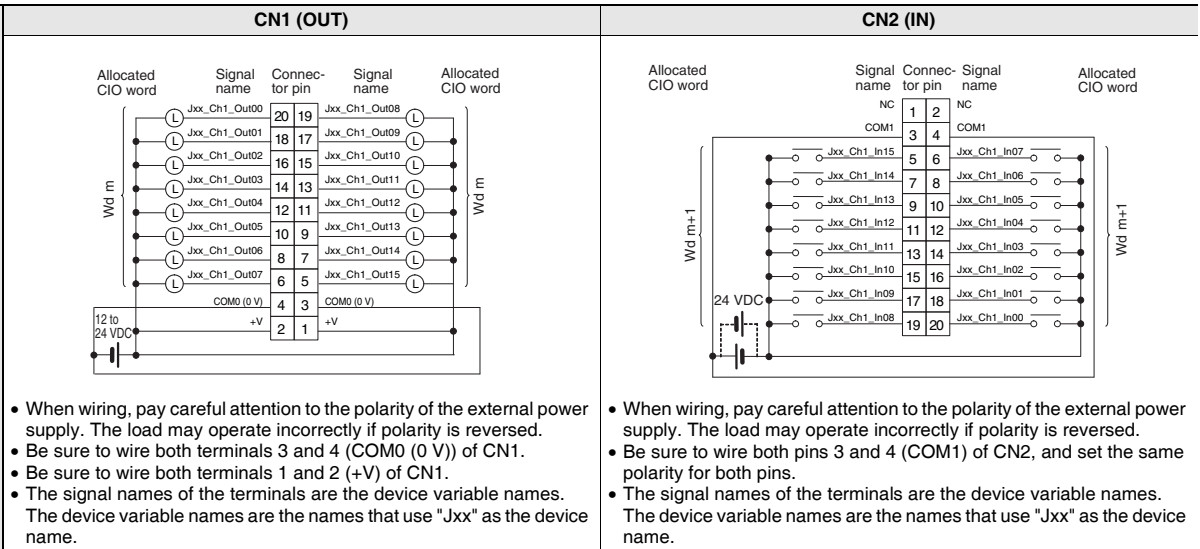
* The ON response time will be 20 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.

CJ1W-MD261 DC Input/Transistor Output Unit (24 VDC 32 Inputs/32 Outputs)

Name	32-point DC Input/32-point Transistor Output Unit with Fujitsu Connectors (Sinking Outputs)		
Model	CJ1W-MD261		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	12 to 24 VDC	Rated Input Voltage	24 VDC
Operating Load Voltage Range	10.2 to 26.4 VDC	Operating Input Voltage	20.4 to 26.4 VDC
Maximum Load Current	0.3 A/point, 1.6 A/common, 3.2 A/Unit	Input Impedance	5.6 kΩ
Maximum Inrush Current	3.0 A/point, 10 ms max.	Input Current	4.1 mA typical (at 24 VDC)
Leakage Current	0.1 mA max.	ON Voltage/ON Current	19.0 VDC min./3 mA min. *2
Residual Voltage	1.5 V max.	OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	0.5 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *1
OFF Response Time	1.0 ms max.		
No. of Circuits	32 (16 points/common, 2 circuits)	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *1
Fuse	None		
External Power Supply	10.2 to 26.4 VDC, 30 mA min.	No. of Circuits	32 (16 points/common, 2 circuits)
		Number of Simultaneously ON Points	75% (24 points) (at 24 VDC)
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 140 mA max.		
Weight	110 g max.		
Accessories	None		
Circuit Configuration	**CN1 (OUT)** • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.	**CN2 (IN)** • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.	

External connection and terminal-device variable diagram

CN1 (OUT)

Allocated CIO word (left): Wd m+1 — Signal name (left): Jxx_Ch2; Allocated CIO word (right): Wd m — Signal name (right): Jxx_Ch1. External power supply 12 to 24 VDC.

Signal name (Ch2)	Connector pin (B)	Connector pin (A)	Signal name (Ch1)
+V	B20	A20	+V
COM1 (0 V)	B19	A19	COM0 (0 V)
Jxx_Ch2_Out15	B18	A18	Jxx_Ch1_Out15
Jxx_Ch2_Out14	B17	A17	Jxx_Ch1_Out14
Jxx_Ch2_Out13	B16	A16	Jxx_Ch1_Out13
Jxx_Ch2_Out12	B15	A15	Jxx_Ch1_Out12
Jxx_Ch2_Out11	B14	A14	Jxx_Ch1_Out11
Jxx_Ch2_Out10	B13	A13	Jxx_Ch1_Out10
Jxx_Ch2_Out09	B12	A12	Jxx_Ch1_Out09
Jxx_Ch2_Out08	B11	A11	Jxx_Ch1_Out08
+V	B10	A10	+V
COM1 (0 V)	B9	A9	COM0 (0 V)
Jxx_Ch2_Out07	B8	A8	Jxx_Ch1_Out07
Jxx_Ch2_Out06	B7	A7	Jxx_Ch1_Out06
Jxx_Ch2_Out05	B6	A6	Jxx_Ch1_Out05
Jxx_Ch2_Out04	B5	A5	Jxx_Ch1_Out04
Jxx_Ch2_Out03	B4	A4	Jxx_Ch1_Out03
Jxx_Ch2_Out02	B3	A3	Jxx_Ch1_Out02
Jxx_Ch2_Out01	B2	A2	Jxx_Ch1_Out01
Jxx_Ch2_Out00	B1	A1	Jxx_Ch1_Out00

- Be sure to wire both terminals A19 and A9 (COM0 (0 V)) of CN1.
- Be sure to wire both terminals B19 and B9 (COM1 (0 V)) of CN1.
- Be sure to wire both terminals A20 and A10 (+V) of CN1.
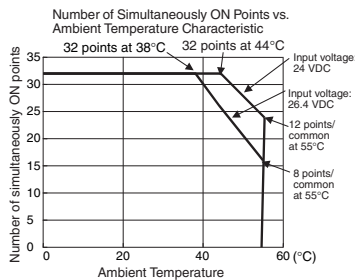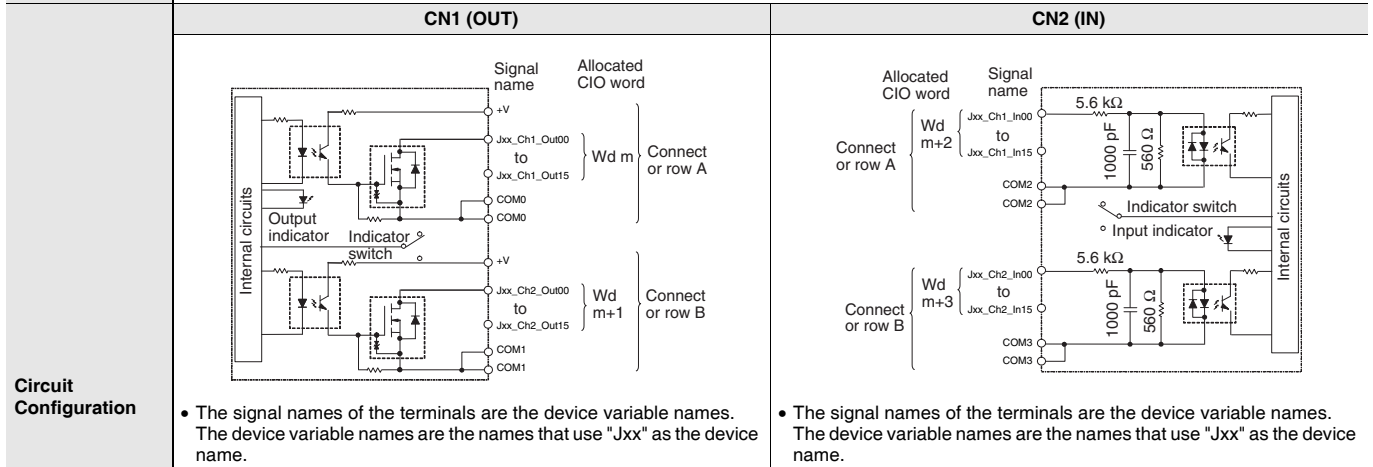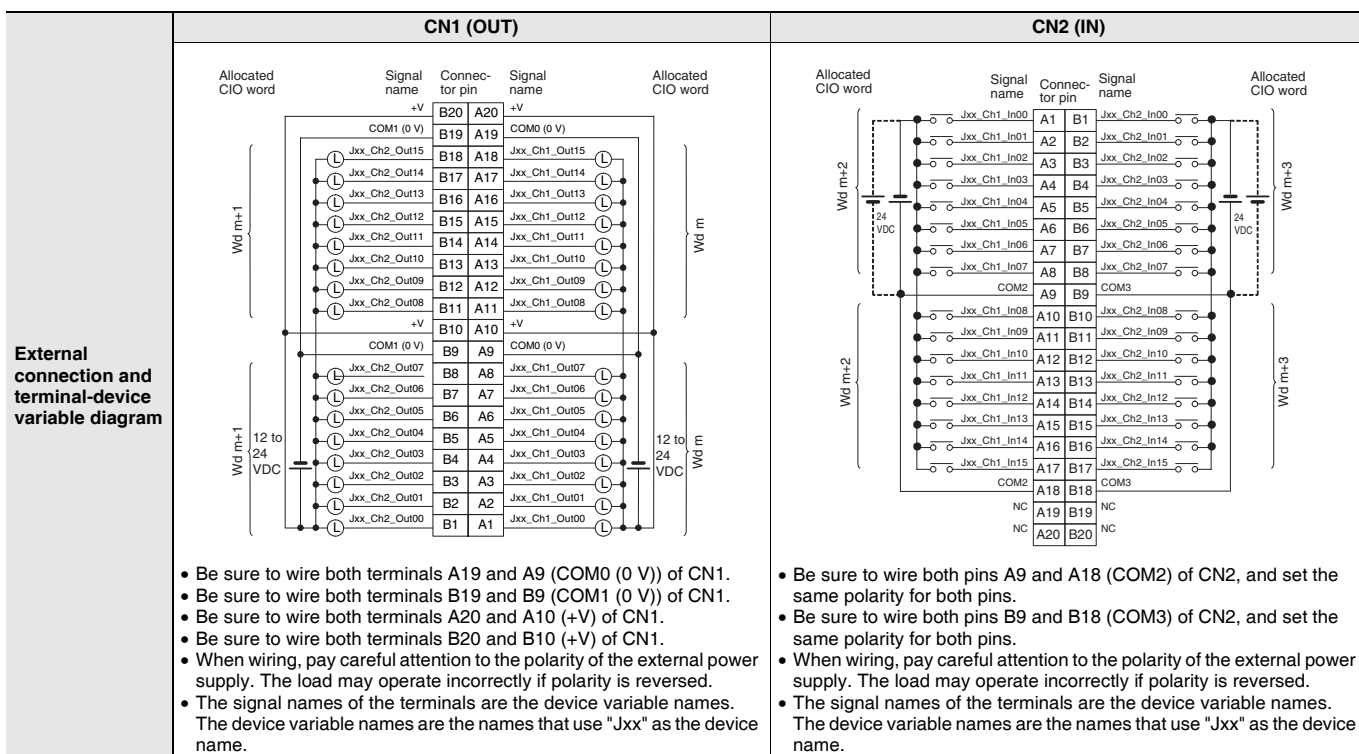- Be sure to wire both terminals B20 and B10 (+V) of CN1.
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

CN2 (IN)

Allocated CIO word (left): Wd m+2 — Signal name (left): Jxx_Ch1; Allocated CIO word (right): Wd m+3 — Signal name (right): Jxx_Ch2. 24 VDC.

Signal name (Ch1)	Connector pin (A)	Connector pin (B)	Signal name (Ch2)
Jxx_Ch1_In00	A1	B1	Jxx_Ch2_In00
Jxx_Ch1_In01	A2	B2	Jxx_Ch2_In01
Jxx_Ch1_In02	A3	B3	Jxx_Ch2_In02
Jxx_Ch1_In03	A4	B4	Jxx_Ch2_In03
Jxx_Ch1_In04	A5	B5	Jxx_Ch2_In04
Jxx_Ch1_In05	A6	B6	Jxx_Ch2_In05
Jxx_Ch1_In06	A7	B7	Jxx_Ch2_In06
Jxx_Ch1_In07	A8	B8	Jxx_Ch2_In07
COM2	A9	B9	COM3
Jxx_Ch1_In08	A10	B10	Jxx_Ch2_In08
Jxx_Ch1_In09	A11	B11	Jxx_Ch2_In09
Jxx_Ch1_In10	A12	B12	Jxx_Ch2_In10
Jxx_Ch1_In11	A13	B13	Jxx_Ch2_In11
Jxx_Ch1_In12	A14	B14	Jxx_Ch2_In12
Jxx_Ch1_In13	A15	B15	Jxx_Ch2_In13
Jxx_Ch1_In14	A16	B16	Jxx_Ch2_In14
Jxx_Ch1_In15	A17	B17	Jxx_Ch2_In15
COM2	A18	B18	COM3
NC	A19	B19	NC
NC	A20	B20	NC

- 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.
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- 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 120 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.

*2. 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-MD263 DC Input/Transistor Output Unit (24 VDC 32 Inputs/32 Outputs)

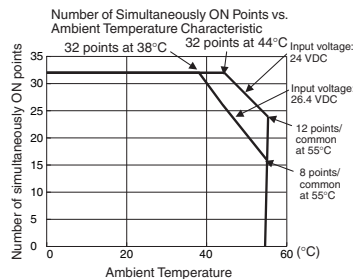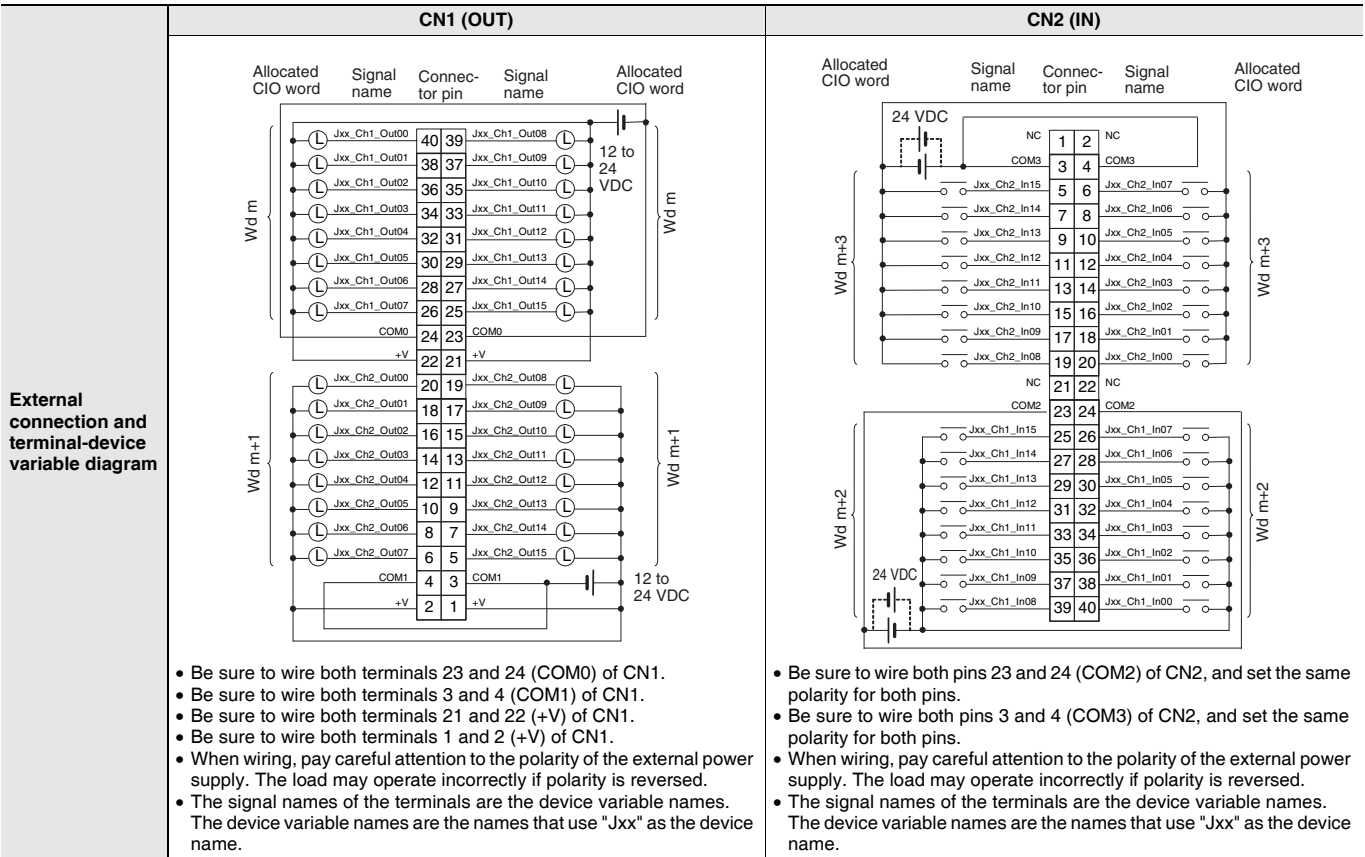| Name	32-point DC Input/32-point Transistor Output Unit with MIL Connectors (Sinking Outputs)		
Model	CJ1W-MD263		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	12 to 24 VDC	Rated Input Voltage	24 VDC
Operating Load Voltage Range	10.2 to 26.4 VDC	Operating Input Voltage	20.4 to 26.4 VDC
Maximum Load Current	0.3 A/point, 1.6 A/common, 3.2 A/Unit	Input Impedance	5.6 kΩ
Maximum Inrush Current	3.0 A/point, 10 ms max.	Input Current	4.1 mA typical (at 24 VDC)
Leakage Current	0.1 mA max.	ON Voltage/ON Current	19.0 VDC min./3 mA min. *2
Residual Voltage	1.5 V max.	OFF Voltage/OFF Current	5 VDC max./1 mA max.
ON Response Time	0.5 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *1
OFF Response Time	1.0 ms max.		
No. of Circuits	32 (16 points/common, 2 circuits)	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *1
Fuse	None		
External Power Supply	10.2 to 26.4 VDC, 30 mA min.	No. of Circuits	32 (16 points/common, 2 circuits)
		Number of Simultaneously ON Points	75% (24 points) (at 24 VDC)
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 140 mA max.		
Weight	110 g max.		
Accessories	None		
Circuit Configuration	**CN1 (OUT)**		**CN2 (IN)**

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

CN1 (OUT)	CN2 (IN)

External connection and terminal-device variable diagram

CN1 (OUT)

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
	Jxx_Ch1_Out00	40 39	Jxx_Ch1_Out08	
	Jxx_Ch1_Out01	38 37	Jxx_Ch1_Out09	
	Jxx_Ch1_Out02	36 35	Jxx_Ch1_Out10	
	Jxx_Ch1_Out03	34 33	Jxx_Ch1_Out11	
Wd m	Jxx_Ch1_Out04	32 31	Jxx_Ch1_Out12	Wd m
	Jxx_Ch1_Out05	30 29	Jxx_Ch1_Out13	
	Jxx_Ch1_Out06	28 27	Jxx_Ch1_Out14	
	Jxx_Ch1_Out07	26 25	Jxx_Ch1_Out15	
	COM0	24 23	COM0	
	+V	22 21	+V	12 to 24 VDC

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
	Jxx_Ch2_Out00	20 19	Jxx_Ch2_Out08	
	Jxx_Ch2_Out01	18 17	Jxx_Ch2_Out09	
	Jxx_Ch2_Out02	16 15	Jxx_Ch2_Out10	
	Jxx_Ch2_Out03	14 13	Jxx_Ch2_Out11	
Wd m+1	Jxx_Ch2_Out04	12 11	Jxx_Ch2_Out12	Wd m+1
	Jxx_Ch2_Out05	10 9	Jxx_Ch2_Out13	
	Jxx_Ch2_Out06	8 7	Jxx_Ch2_Out14	
	Jxx_Ch2_Out07	6 5	Jxx_Ch2_Out15	
	COM1	4 3	COM1	
	+V	2 1	+V	12 to 24 VDC

- Be sure to wire both terminals 23 and 24 (COM0) of CN1.
- Be sure to wire both terminals 3 and 4 (COM1) of CN1.
- Be sure to wire both terminals 21 and 22 (+V) of CN1.
- Be sure to wire both terminals 1 and 2 (+V) of CN1.
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

CN2 (IN)

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
24 VDC	NC	1 2	NC	
	COM3	3 4	COM3	
	Jxx_Ch2_In15	5 6	Jxx_Ch2_In07	
	Jxx_Ch2_In14	7 8	Jxx_Ch2_In06	
	Jxx_Ch2_In13	9 10	Jxx_Ch2_In05	
Wd m+3	Jxx_Ch2_In12	11 12	Jxx_Ch2_In04	Wd m+3
	Jxx_Ch2_In11	13 14	Jxx_Ch2_In03	
	Jxx_Ch2_In10	15 16	Jxx_Ch2_In02	
	Jxx_Ch2_In09	17 18	Jxx_Ch2_In01	
	Jxx_Ch2_In08	19 20	Jxx_Ch2_In00	

Allocated CIO word	Signal name	Connector pin	Signal name	Allocated CIO word
	NC	21 22	NC	
	COM2	23 24	COM2	
	Jxx_Ch1_In15	25 26	Jxx_Ch1_In07	
	Jxx_Ch1_In14	27 28	Jxx_Ch1_In06	
	Jxx_Ch1_In13	29 30	Jxx_Ch1_In05	
Wd m+2	Jxx_Ch1_In12	31 32	Jxx_Ch1_In04	Wd m+2
	Jxx_Ch1_In11	33 34	Jxx_Ch1_In03	
	Jxx_Ch1_In10	35 36	Jxx_Ch1_In02	
24 VDC	Jxx_Ch1_In09	37 38	Jxx_Ch1_In01	
	Jxx_Ch1_In08	39 40	Jxx_Ch1_In00	

- Be sure to wire both pins 23 and 24 (COM2) of CN2, and set the same polarity for both pins.
- Be sure to wire both pins 3 and 4 (COM3) of CN2, and set the same polarity for both pins.
- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- 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.
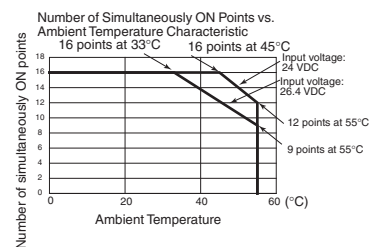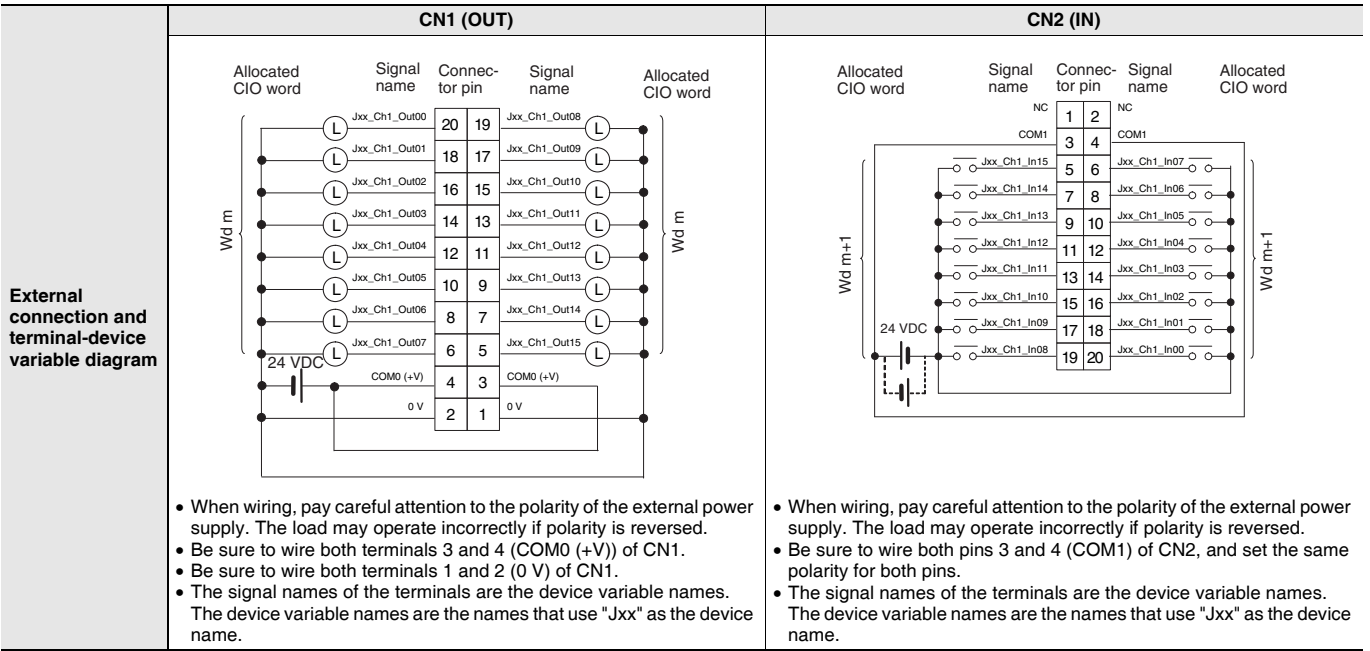
*1. The ON response time will be 120 μs maximum and OFF response time will be 400 μs maximum even if the response times are set to 0 ms due to internal element delays.

*2. 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-MD232 DC Input/Transistor Output Unit (24 VDC, 16 inputs/16 Outputs)

Name	16-point DC Input/16-point Transistor Output Unit with MIL Connectors (Sourcing Outputs)		
Model	CJ1W-MD232		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	24 VDC	Rated Input Voltage	24 VDC
Operating Load Voltage Range	20.4 to 26.4 VDC	Operating Input Voltage	20.4 to 26.4 VDC
Maximum Load Current	0.5 A/point, 2.0 A/Unit	Input Impedance	3.3 kΩ
Leakage Current	0.1 mA max.	Input Current	7 mA typical (at 24 VDC)
Residual Voltage	1.5 V max.	ON Voltage/ON Current	14.4 VDC min./3 mA min.
ON Response Time	0.5 ms max.	OFF Voltage/OFF Current	5 VDC max./1 mA max.
OFF Response Time	1.0 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
Load Short-circuit Protection	Detection current: 0.7 to 2.5 A min. Automatic restart after error clearance.	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
No. of Circuits	16 (16 points/common, 1 circuit)	No. of Circuits	16 (16 points/common, 1 circuit)
External Power Supply	20.4 to 26.4 VDC, 40 mA min.	Number of Simultaneously ON Points	75% (at 24 VDC)
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 130 mA max.		
Weight	100 g max.		
Accessories	None		
Circuit Configuration	**CN1 (OUT)** • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.	**CN2 (IN)** • 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.	

CN1 (OUT)	CN2 (IN)

External connection and terminal-device variable diagram

CN1 (OUT) — Allocated CIO word / Signal name / Connector pin / Signal name / Allocated CIO word

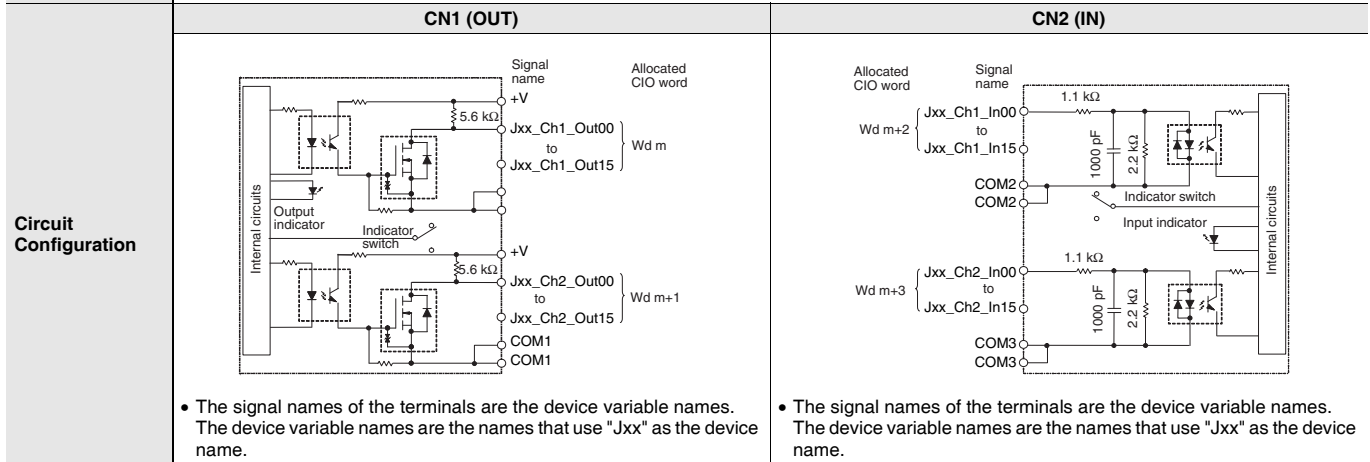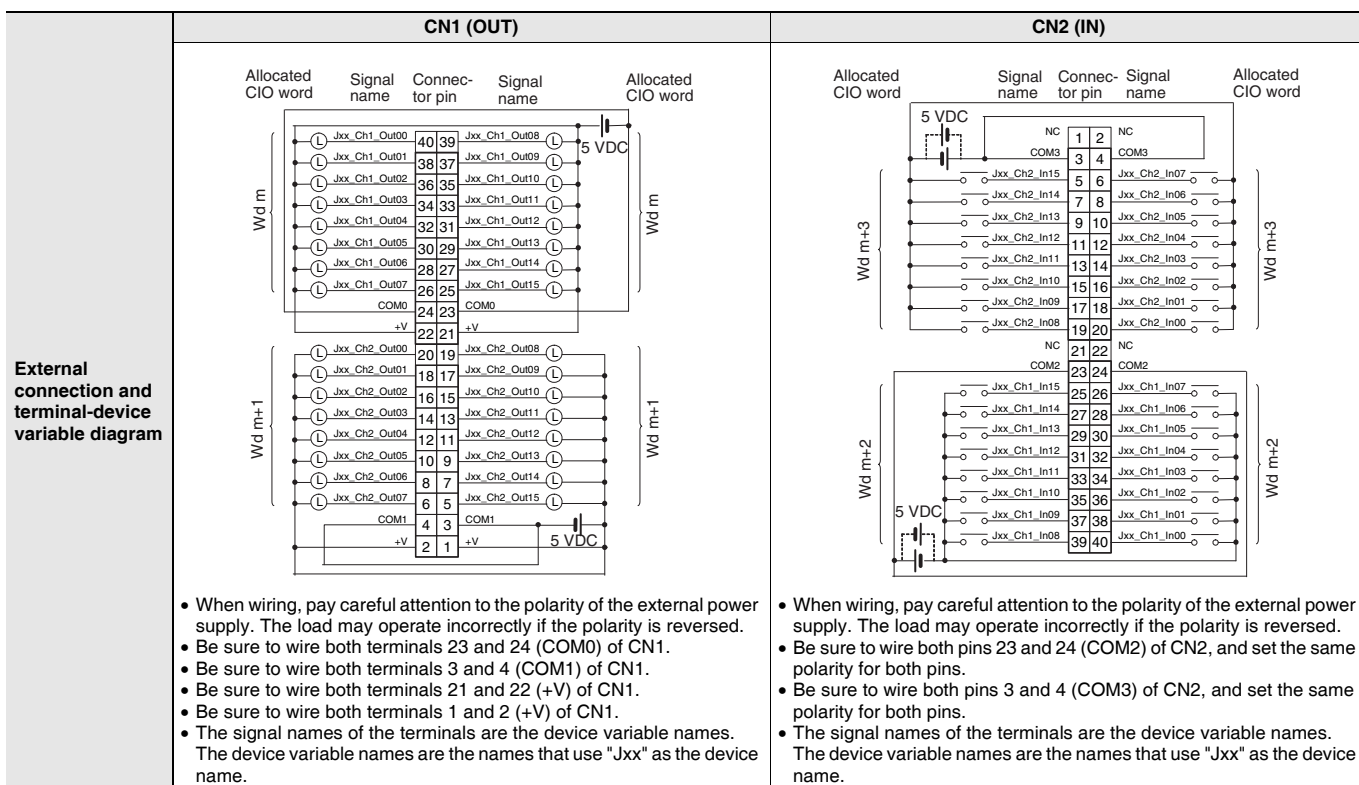| Signal name	Connector pin	Signal name
Jxx_Ch1_Out00	20 19	Jxx_Ch1_Out08
Jxx_Ch1_Out01	18 17	Jxx_Ch1_Out09
Jxx_Ch1_Out02	16 15	Jxx_Ch1_Out10
Jxx_Ch1_Out03	14 13	Jxx_Ch1_Out11
Jxx_Ch1_Out04	12 11	Jxx_Ch1_Out12
Jxx_Ch1_Out05	10 9	Jxx_Ch1_Out13
Jxx_Ch1_Out06	8 7	Jxx_Ch1_Out14
Jxx_Ch1_Out07	6 5	Jxx_Ch1_Out15
COM0 (+V)	4 3	COM0 (+V)
0 V	2 1	0 V

Wd m

24 VDC

- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both terminals 3 and 4 (COM0 (+V)) of CN1.
- Be sure to wire both terminals 1 and 2 (0 V) of CN1.
- The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

CN2 (IN) — Allocated CIO word / Signal name / Connector pin / Signal name / Allocated CIO word

Signal name	Connector pin	Signal name
NC	1 2	NC
COM1	3 4	COM1
Jxx_Ch1_In15	5 6	Jxx_Ch1_In07
Jxx_Ch1_In14	7 8	Jxx_Ch1_In06
Jxx_Ch1_In13	9 10	Jxx_Ch1_In05
Jxx_Ch1_In12	11 12	Jxx_Ch1_In04
Jxx_Ch1_In11	13 14	Jxx_Ch1_In03
Jxx_Ch1_In10	15 16	Jxx_Ch1_In02
Jxx_Ch1_In09	17 18	Jxx_Ch1_In01
Jxx_Ch1_In08	19 20	Jxx_Ch1_In00

Wd m+1

24 VDC

- When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if polarity is reversed.
- Be sure to wire both pins 3 and 4 (COM1) 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 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.

CJ1W-MD563 TTL I/O Unit (32 Inputs/32 Outputs)

Name	32-point Input /32-point Output TTL I/O Unit with MIL Connectors		
Model	CJ1W-MD563		
Output section (CN1)		**Input section (CN2)**	
Rated Voltage	5 VDC±10%	Rated Input Voltage	5 VDC±10%
Operating Load Voltage Range	4.5 to 5.5 VDC	Input Impedance	1.1 kΩ
Maximum Load Current	35 mA/point, 560 mA/common, 1.12 A/Unit	Input Current	Approx. 3.5 mA (at 5 VDC)
Leakage Current	0.1 mA max.	ON Voltage	3.0 VDC min.
Residual Voltage	0.4 V max.	OFF Voltage	1.0 VDC max.
ON Response Time	0.2 ms max.	ON Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
OFF Response Time	0.3 ms max.	OFF Response Time	8.0 ms max. (Can be set to between 0 and 32 in the Setup.) *
No. of Circuits	32 points (16 points/common, 2 circuits)	No. of Circuits	32 points (16 points/common, 2 circuits)
Fuse	None	Number of Simultaneously ON Points	100% (16 points/common)
External Power Supply	5 VDC±10%, 40 mA min. (1.2 mA × No. of ON points)		
Insulation Resistance	20 MΩ min. between the external terminals and the GR terminal (at 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	5 VDC 190 mA max.		
Weight	110 g max.		
Accessories	None		
Circuit Configuration	**CN1 (OUT)** • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.		**CN2 (IN)** • 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.

	CN1 (OUT)	CN2 (IN)
External connection and terminal-device variable diagram		
	• When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if the polarity is reversed. • Be sure to wire both terminals 23 and 24 (COM0) of CN1. • Be sure to wire both terminals 3 and 4 (COM1) of CN1. • Be sure to wire both terminals 21 and 22 (+V) of CN1. • Be sure to wire both terminals 1 and 2 (+V) of CN1. • 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.	• When wiring, pay careful attention to the polarity of the external power supply. The load may operate incorrectly if the polarity is reversed. • Be sure to wire both pins 23 and 24 (COM2) of CN2, and set the same polarity for both pins. • Be sure to wire both pins 3 and 4 (COM3) of CN2, and set the same polarity for both pins. • The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name.

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

Bit Allocations for Mixed I/O Unit

32-point Mixed I/O Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Output)	00	OUT0/Jxx_Ch1_Out00
	01	OUT1/Jxx_Ch1_Out01
	:	:
	14	OUT14/Jxx_Ch1_Out14
	15	OUT15/Jxx_Ch1_Out15
Wd m+1 (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15

64-point Mixed I/O Unit

Allocated CIO word		Signal name (CJ/NJ)
CIO	Bit	
Wd m (Output)	00	OUT0/Jxx_Ch1_Out00
	01	OUT1/Jxx_Ch1_Out01
	:	:
	14	OUT14/Jxx_Ch1_Out14
	15	OUT15/Jxx_Ch1_Out15
Wd m+1 (Output)	00	OUT0/Jxx_Ch2_Out00
	01	OUT1/Jxx_Ch2_Out01
	:	:
	14	OUT14/Jxx_Ch2_Out14
	15	OUT15/Jxx_Ch2_Out15
Wd m+2 (Input)	00	IN0/Jxx_Ch1_In00
	01	IN1/Jxx_Ch1_In01
	:	:
	14	IN14/Jxx_Ch1_In14
	15	IN15/Jxx_Ch1_In15
Wd m+3 (Input)	00	IN0/Jxx_Ch2_In00
	01	IN1/Jxx_Ch2_In01
	:	:
	14	IN14/Jxx_Ch2_In14
	15	IN15/Jxx_Ch2_In15

External Interface

32-point Units (Model with 24-pin × 2 Fujitsu Connectors or with 20-pin × 2 MIL Connectors)

Model number

I/O indicators

I/O wiring connector (24-pin × 2)

Unit with Fujitsu-compatible Connector

Unit with MIL Connector

Connector
Connected to the connector on the next Unit.

Word m {
| ○ | 0 1 2 3 4 5 6 7 |
| | 8 9 10 11 12 13 14 15 |

Word m+1 {
| I | 0 1 2 3 4 5 6 7 |
| | 8 9 10 11 12 13 14 15 |
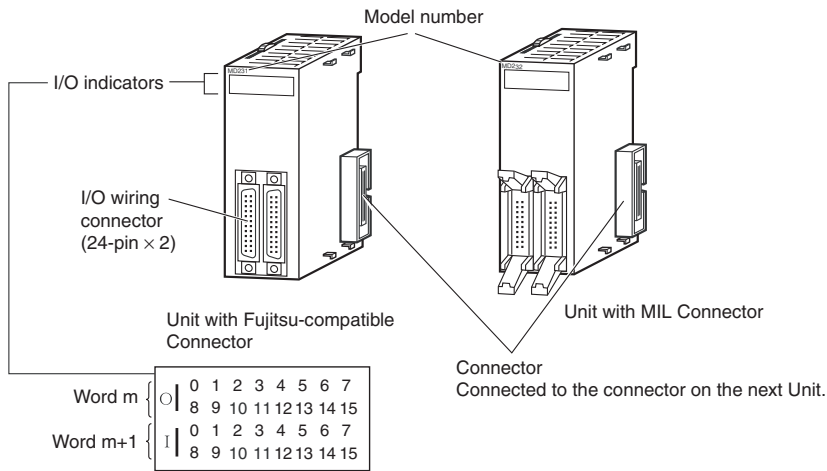
64-point Units (Models with Two 40-point Fujitsu Connectors or MIL Connector)

Indicator Switch

1 2

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

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

Model number

I/O indicators

I/O wiring connector (40-pin × 2)

Unit with Fujitsu-compatible Connector

Unit with MIL Connector

Connector
Connected to the connector on the next Unit.

Word m or m+2 {
| I | 0 1 2 3 4 5 6 7 |
| | 8 9 1 01 11 21 31 41 5 |

Word m+1 or m+3 {
| II | 0 1 2 3 4 5 6 7 |
| | 8 9 1 01 11 21 31 41 5 |

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.
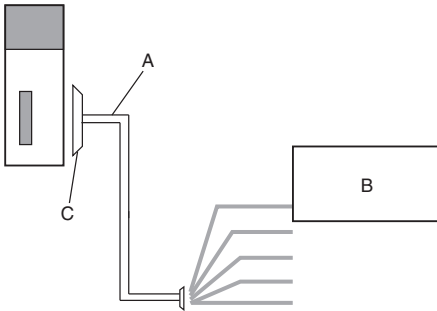
A	User-provided cable
B	External device
C	Connector

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.
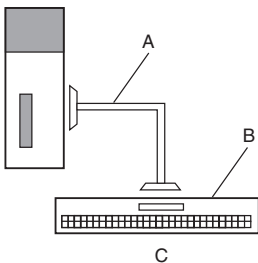
A	Connecting Cable for Connector-Terminal Block Conversion Unit XW2Z
B	Connector-Terminal Block Conversion Unit XW2□
C	Conversion to a screw terminal block

3. I/O Relay Terminal
Use a Connecting Cable to connect to an I/O Relay Terminal.
The I/O specifications can be converted to relay outputs and AC inputs by connecting the I/O Relay Terminal to an I/O Unit.
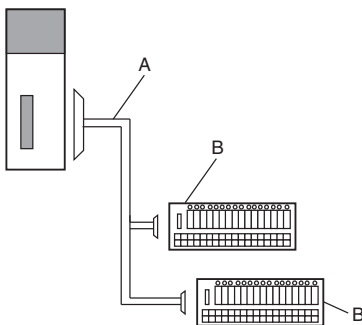
A	Connecting Cable for I/O Relay Terminals XW2Z-R
B	I/O Relay Terminals G70V, G7TC Relay Terminals G70D, G70R I/O Terminal Socket G70A Or, conversion to relay outputs and AC inputs.

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-compatible Connectors
Applicable Units

Model	Specifications	Pins
CJ1W-MD261	24-VDC Input/Transistor Output Units, 32 Inputs, 32 Outputs	40
CJ1W-MD231	24-VDC Input/Transistor Output Units, 16 Inputs, 16 Outputs	24

Applicable Cable-side Connectors

Connection	Pins	OMRON set	Fujitsu parts
Solder-type	40	C500-CE404	Socket: FCN-361J040-AU Connector cover: FCN-360C040-J2
	24	C500-CE241	Socket: FCN-361J024-AU Connector cover: FCN-360C024-J2
Crimped	40	C500-CE405	Socket: FCN-363J040 Connector cover: FCN-360C040-J2 Contacts: FCN-363J-AU
	24	C500-CE242	Socket: FCN-363J024 Connector cover: FCN-360C024-J2 Contacts: FCN-363J-AU
Pressure-welded	40	C500-CE403	FCN-367J040-AU/F
	24	C500-CE243	FCN-367J024-AU/F

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

Model	Specifications	Pins
CJ1W-MD263	24-VDC Input/Transistor Output Units, 32 inputs, 32 outputs	40
CJ1W-MD563	TTL Input/TTL Output Units, 32 inputs, 32 outputs	
CJ1W-MD232	24-VDC Input/Transistor Output Units, 16 inputs, 16 outputs	20
CJ1W-MD233	24-VDC Input/Transistor Output Units, 16 inputs, 16 outputs	

Applicable Cable-side Connectors

Connection	Pins	OMRON set	DDK parts
Pressure-welded	40	XG4M-4030-T *1	FRC5-A040-3T0S
	20	XG4M-2030-T	FRC5-A020-3T0S
Crimped	40	XG5N-401 *2	HU-40OS2-001
	–	Crimp Contacts for XG5N *3 XG5W-0232 (loose contacts: 100 pieces) XG5W-0232-R (reel contacts: 10,000 pieces)	HU-111S

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

Wire Size

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

Crimping Tools

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

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

Tools for Pressure-welded Connectors (Fujitsu Component)

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

The following models are recommended for tools for OMRON MIL connectors.
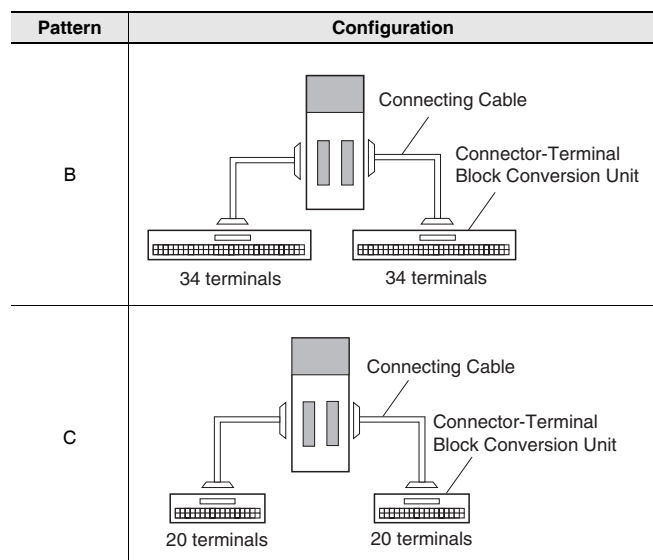**Tools for Pressure-welded Connectors (OMRON)**

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

Tools for Crimped Connectors (OMRON)

Product Name	Model
Manual Crimping Tool	XY2B-7007

2. Connecting Connector-Terminal Block Conversion Units

Connection Patterns for Connector-Terminal Block Conversion Units

Pattern	Configuration
B	
C	

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

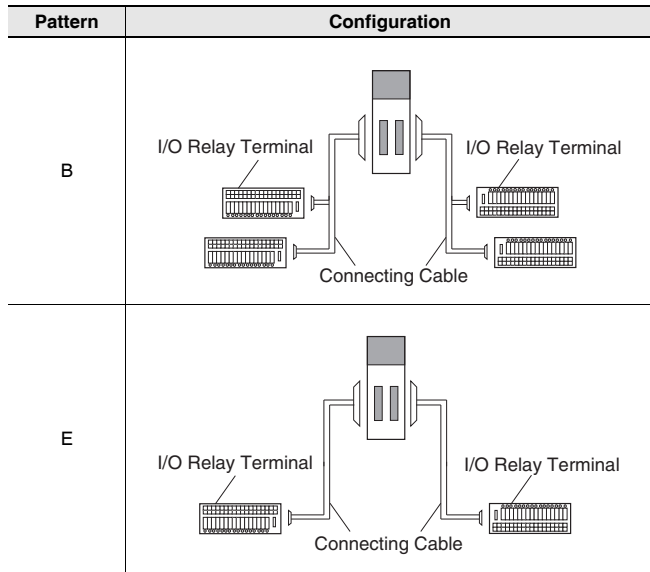| Unit	I/O capacity	Number of connectors	Polarity	Connection pattern	Connecting Cable *	Connector-Terminal Block Conversion Unit	Wiring method	Common terminals
CJ1W-MD231	16 I/O points	2 Fujitsu connectors (1 for 16 inputs and 1 for 16 outputs)	NPN	C	XW2Z-□□□A (2 pcs)	XW2R-J20GD-T (2 Units)	Phillips screw	No
						XW2R-E20GD-T (2 Units)	Slotted screw (rise up)	
						XW2R-P20GD-T (2 Units)	Push-in spring	
CJ1W-MD232	16 I/O points	2 MIL connectors (1 for 16 inputs and 1 for 16 outputs)	PNP	C	XW2Z-□□□X (2 pcs)	XW2R-J20GD-T (2 Units)	Phillips screw	No
						XW2R-E20GD-T (2 Units)	Slotted screw (rise up)	
						XW2R-P20GD-T (2 Units)	Push-in spring	
CJ1W-MD233	16 I/O points	2 MIL connectors (1 for 16 inputs and 1 for 16 outputs)	NPN	C	XW2Z-□□□X (2 pcs)	XW2R-J20GD-T (2 Units)	Phillips screw	No
						XW2R-E20GD-T (2 Units)	Slotted screw (rise up)	
						XW2R-P20GD-T (2 Units)	Push-in spring	
CJ1W-MD261	32 I/O points	2 Fujitsu connectors (1 for 32 inputs and 1 for 32 outputs)	NPN	B	XW2Z-□□□PF (1 pcs)	XW2R-J34GD-C1 (Input side of the unit)	Phillips screw	No
					XW2Z-□□□PF (1 pcs)	XW2R-J34GD-C3 (Output side of the unit)		
					XW2Z-□□□PF (1 pcs)	XW2R-E34GD-C1 (Input side of the unit)	Slotted screw (rise up)	
					XW2Z-□□□PF (1 pcs)	XW2R-E34GD-C3 (Output side of the unit)		
					XW2Z-□□□PF (1 pcs)	XW2R-P34GD-C1 (Input side of the unit)	Push-in spring	
					XW2Z-□□□PF (1 pcs)	XW2R-P34GD-C3 (Output side of the unit)		
CJ1W-MD263	32 I/O points	2 MIL connectors (1 for 32 inputs and 1 for 32 outputs)	NPN	B	XW2Z-□□□PM (1 pcs)	XW2R-J34GD-C2 (Input side of the unit)	Phillips screw	No
					XW2Z-□□□PM (1 pcs)	XW2R-J34GD-C4 (Output side of the unit)		
					XW2Z-□□□PM (1 pcs)	XW2R-E34GD-C2 (Input side of the unit)	Slotted screw (rise up)	
					XW2Z-□□□PM (1 pcs)	XW2R-E34GD-C4 (Output side of the unit)		
					XW2Z-□□□PM (1 pcs)	XW2R-P34GD-C2 (Input side of the unit)	Push-in spring	
					XW2Z-□□□PM (1 pcs)	XW2R-P34GD-C4 (Output side of the unit)		

* The box □ is replaced by the cable length.

CJ1W-MD

Unit	I/O capacity	Number of connectors	Polarity	Connection pattern	Connecting Cable *	Connector-Terminal Block Conversion Unit	Wiring method	Common terminals
CJ1W-MD563	32 I/O points	2 MIL connectors (1 for 32 inputs and 1 for 32 outputs)	–	B	XW2Z-□□PM (1 pcs)	XW2R-J34GD-C2 (Input side of the unit)	Phillips screw	No
					XW2Z-□□PM (1 pcs)	XW2R-J34GD-C4 (Output side of the unit)		
					XW2Z-□□PM (1 pcs)	XW2R-E34GD-C2 (Input side of the unit)	Slotted screw (rise up)	
					XW2Z-□□PM (1 pcs)	XW2R-E34GD-C4 (Output side of the unit)		
					XW2Z-□□PM (1 pcs)	XW2R-P34GD-C2 (Input side of the unit)	Push-in spring	
					XW2Z-□□PM (1 pcs)	XW2R-P34GD-C4 (Output side of the unit)		

* The box □ is replaced by the cable length.

OMRON

24

3. Connecting I/O Relay Terminals

Connection Patterns for I/O Relay Terminals

Pattern	Configuration
B	
E	

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-MD231	16 inputs	1 Fujitsu connector (24 p)	NPN/PNP	E	XW2Z-R□C	1	G70V-SID16P(-1)(-C16) *2	16	1	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
	16 outputs	1 Fujitsu connector (24 p)	NPN (Sinking)		XW2Z-R□C	1	G70V-SOC16P(-C4)	16	1	Push-in spring
							G7TC-OC16	16		Screw terminal
							G70D-SOC/FOM16	16		
							G70D-VSOC16/VFOM16	16		
							G70A-ZOC16-3 *4	16		
							G70R-SOC08 *3	8		
CJ1W-MD232	16 inputs	1 MIL connector (20 p)	NPN/PNP	E	XW2Z-RO□C	1	G70V-SID16P(-1)(-C16) *2	16	1	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
	16 outputs	1 MIL connector (20 p)	PNP (Sourcing)		XW2Z-RI□C	1	G70V-SOC16P-1(-C4)	16	1	Push-in spring
							G70A-ZOC16-4 *4	16		Screw terminal
							G70D-SOC/FOM16-1	16		
					XW2Z-RO□C	1	G7TC-OC16-1	16		
CJ1W-MD233	16 inputs	1 MIL connector (20 p)	NPN/PNP	E	XW2Z-RO□C	1	G70V-SID16P(-1)(-C16) *2	16	1	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
	16 outputs	1 MIL connector (20 p)	NPN (Sinking)		XW2Z-RO□C	1	G70V-SOC16P(-C4)	16	1	Push-in spring
							G7TC-OC16	16		Screw terminal
							G70D-SOC/FOM16	16		
							G70D-VSOC16/VFOM16	16		
							G70A-ZOC16-3 *4	16		
							G70R-SOC08 *3	8		
CJ1W-MD261	32 inputs	1 Fujitsu connector (40 p)	NPN/PNP	B	XW2Z-RI□C-□	1	G70V-SID16P(-1)(-C16) *2	16	2	Push-in spring
							G7TC-ID/IA16	16		Screw terminal
	32 outputs	1 Fujitsu connector (40 p)	NPN (Sinking)		XW2Z-RO□C-□	1	G70V-SOC16P(-C4)	16	2	Push-in spring
							G7TC-OC16	16		Screw terminal
							G70D-SOC/FOM16	16		
							G70D-VSOC16/VFOM16	16		
							G70A-ZOC16-3 *4	16		
							G70R-SOC08 *3	8		

*1. The box □ is replaced by the cable length.
*2. Inputs can be either NPN or PNP.
*3. In addition to the G70R-SOC08, 8-point output G7TC-OC08 and G70D-SOC08 models are available.
*4. The G70A-ZOC16-3/4 has I/O terminal sockets. Mounted relays are sold separately.
In addition, an G70A-ZOC16-3/4 will be SPDT × 16 points with G2R relays.