## 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: $15 \mu \mathrm{~s}$, OFF Response Time: $90 \mu \mathrm{~s}$

- 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

| Unit type | Product name | Specifications |  |  |  |  | $\begin{aligned} & \text { Current } \\ & \text { onsumption } \end{aligned}$ <br> (A) |  | Model | Standards |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | I/O points | Input voltage and current | Commons | External connection | No. of words allocated | 5 V | 24 V |  |  |
| CJ1 Basic I/O Units | DC Input Units | 8 inputs | 12 to $24 \mathrm{VDC}, 10 \mathrm{~mA}$ | Independent contacts | Removable terminal block | 1 word | 0.09 | - | CJ1W-ID201 | $\begin{aligned} & \text { UC1, N, L, } \\ & \text { CE } \end{aligned}$ |
|  |  | 16 inputs | $24 \mathrm{VDC}, 7 \mathrm{~mA}$ | 16 points, 1 common | Removable terminal block | 1 word | 0.08 | - | CJ1W-ID211 |  |
|  |  | 16 inputs (High speed) | $24 \mathrm{VDC}, 7 \mathrm{~mA}$ | 16 points, 1 common | Removable terminal block | 1 word | 0.13 | - | CJ1W-ID212 | N, L, CE |
|  |  | 32 inputs | $24 \mathrm{VDC}, 4.1 \mathrm{~mA}$ | 16 points, 1 common | Fujitsu connector | 2 words | 0.09 | - | CJ1W-ID231 | $\begin{aligned} & \text { UC1, N, L, } \\ & \mathrm{CE} \end{aligned}$ |
|  |  | 32 inputs | $24 \mathrm{VDC}, 4.1 \mathrm{~mA}$ | 16 points, 1 common | MIL connector | 2 words | 0.09 | - | CJ1W-ID232 |  |
|  |  | 32 inputs (High speed) | $24 \mathrm{VDC}, 4.1 \mathrm{~mA}$ | 16 points, 1 common | MIL connector | 2 words | 0.20 | - | CJ1W-ID233 | N, L, CE |
|  |  | 64 inputs | $24 \mathrm{VDC}, 4.1 \mathrm{~mA}$ | 16 points, 1 common | Fujitsu connector | 4 words | 0.09 | - | CJ1W-ID261 | $\begin{aligned} & \text { UC1, N, L, } \\ & \text { CE } \end{aligned}$ |
|  |  | 64 inputs | $24 \mathrm{VDC}, 4.1 \mathrm{~mA}$ | 16 points, 1 common | MIL connector | 4 words | 0.09 | - | CJ1W-ID262 |  |
|  | AC Input Units | 8 inputs | $\begin{aligned} & 200 \text { to } 24 \mathrm{VAC}, 10 \mathrm{~mA} \\ & (200 \mathrm{~V}, 50 \mathrm{~Hz}) \end{aligned}$ | 8 points, 1 common | Removable Terminal Block | 1 words | 0.08 | - | CJ1W-IA201 |  |
|  |  | 16 inputs | $\begin{aligned} & 100 \text { to } 120 \mathrm{VAC}, 7 \mathrm{~mA} \\ & (100 \mathrm{~V}, 50 \mathrm{~Hz}) \end{aligned}$ | 16 points, 1 common | Removable <br> 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 ConnectorTerminal 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 <br> Connectors | Soldered | FCN-361J040-AU Connector <br> FCN-360C040-J2 Connector <br> Cover <br>   | Fujitsu Connectors: <br> 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 |   <br> FCN-363J040 Housing <br> FCN-363J-AU Contactor <br> FCN-360C040-J2 Connector <br>  Cover |  | C500-CE405 |  |
|  | Pressure welded | FCN-367J040-AU/F |  | C500-CE403 |  |
| 24-pin <br> Connectors | Soldered | FCN-361JO24-AU Connector <br> FCN-360C024-J2 <br>  <br>  <br> Connector <br> Cover | Fujitsu Connectors: <br> CJ1W-MD231 (16 inputs, 16 outputs): 2 per Unit | C500-CE241 |  |
|  | Crimped | FCN-363JO24 Socket <br> FCN-363J-AU Contactor <br> FCN-360C024-J2 Connector <br>  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 <br> Connectors | Pressure welded | FRC5-AO40-3TOS | MIL Connectors: <br> CJ1W-ID232/233 (32 inputs): 1 per Unit CJ1W-OD232/233/234 (32 outputs):1 per Unit CJ1W-ID262 (64 inputs): 2 per Unit CJ1W-OD262/263 (64 outputs): 2 per Unit CJ1W-MD263/563 (32 inputs, 32 outputs): 2 per Unit | XG4M-4030-T | - |
|  | Crimped | - |  | XG5N-401* |  |
| $\begin{aligned} & \text { 20-pin } \\ & \text { Connectors } \end{aligned}$ | Pressure welded | FRC5-AO20-3TOS | MIL Connectors: <br> 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 | $\begin{gathered} \text { Terminal } \\ \text { type } \end{gathered}$ | Size |  |  | Mounting |  | Common terminals | Bleeder resistance | Indicators | I/O Units | Model * | Standards |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Depth (mm) | Height (mm) | Width (mm) | $\begin{gathered} \hline \text { DIN } \\ \text { Track } \end{gathered}$ | Screws |  |  |  |  |  |  |
| PLCs | XW2R | 34 | Phillips screw |  |  |  |  | Yes | No | No | No | No | CJ1W-ID231 CJ1W-ID261 | XW2R-J34GD-C1 | - |
|  |  |  |  | M3 | 50 | 48.05 | 130.7 |  |  |  |  |  | CJ1W-ID232 <br> CJ1W-ID233 <br> CJ1W-ID262 | XW2R-J34GD-C2 |  |
|  |  |  | Slotted screw (rise up) |  |  |  |  |  |  |  |  |  | CJ1W-ID231 CJ1W-ID261 | XW2R-E34GD-C1 |  |
|  |  |  |  | (European type) | 50 | 44.81 | 98.5 |  |  |  |  |  | CJ1W-ID232 CJ1W-ID233 CJ1W-ID262 | XW2R-E34GD-C2 |  |
|  |  |  | Push-in spring |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { CJ1W-ID231 } \\ & \text { CJ1W-ID261 } \end{aligned}$ | XW2R-P34GD-C1 |  |
|  |  |  |  | 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-■ด口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 |
| $\text { XW2Z- } \square \square \mathrm{PM}$ | 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 currentat contacts | Rated voltage | Horizontal (mm) | Vertical (mm) | Height (mm) | $\begin{gathered} \text { DIN } \\ \text { Track } \end{gathered}$ | Screws |  |  |
| Push-In Plus terminal block | G70V | Inputs | DC inputs | NPN | $\begin{array}{\|l} 16 \\ \text { (SPSTNO } \times 16 \text { ) } \end{array}$ | 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 | $\begin{aligned} & 16 \\ & (\text { SPDT } \times 16) \end{aligned}$ | 6 A/point, 10 A common |  |  |  |  |  |  | G70V-SOC16P *4 |  |
|  |  |  |  | PNP |  |  |  |  |  |  |  |  | G70V-SOC16P-1 *4 |  |
|  |  |  |  | NPN |  |  |  |  |  |  |  |  | G70V-SOC16P-C4 *6 |  |
|  |  |  |  | PNP |  |  |  |  |  |  |  |  | G70V-SOC16P-1-C4 * |  |
| Standard |  | Inputs | AC inputs | NPN | $\left.\begin{array}{\|l\|} \hline 16 \\ (S P S T N O \end{array}\right) \text { 16) }$ | 1A | 100/(110) VAC | 182 | 85 | 68 | Yes | No | G7TC-IA16 AC100/110 | U, C |
|  |  |  |  |  |  |  | 200/(220) VAC |  |  |  |  |  | G7TC-IA16 AC200/220 |  |
|  |  |  | DC inputs |  |  |  | 12 VDC |  |  |  |  |  | G7TC-ID16 DC12 |  |
|  |  |  |  |  |  |  | 24 VDC |  |  |  |  |  | G7TC-ID16 DC24 |  |
|  |  |  |  |  |  |  | 100/110 VDC |  |  |  |  |  | G7TC-ID16 DC100/110 |  |
|  |  | Outputs | Relay outputs | NPN | $\begin{aligned} & 8 \\ & (\text { SPSTNO } \times 8) \end{aligned}$ | 5A | 12 VDC | 102 |  |  |  |  | G7TC-OC08 DC12 |  |
|  |  |  |  |  |  |  | 24 VDC |  |  |  |  |  | G7TC-OC08 DC24 |  |
|  |  |  |  |  | $\begin{aligned} & 16 \\ & \text { (SPSTNO } \times 16 \text { ) } \end{aligned}$ |  | 12 VDC | 182 |  |  |  |  | G7TC-OC16 DC12 |  |
|  |  |  |  |  |  |  | 24 VDC |  |  |  |  |  | G7TC-OC16 DC24 |  |
|  |  |  |  | PNP | $\begin{aligned} & 16 \\ & \text { (SPSTNO } \times 16 \text { ) } \end{aligned}$ |  | 12 VDC |  |  |  |  |  | G7TC-OC16-1 DC12 |  |
|  |  |  |  |  |  |  | 24 VDC |  |  |  |  |  | G7TC-OC16-1 DC24 |  |
| Highcapacity socket | G70A *1 <br> (Socket only) | Inputs | Relay inputs | NPN/ PNP | 16 (SPDT $\times 16$ possiblewith G2R Relays) | 100 mA | $\begin{aligned} & 110 \text { VDC } \\ & \text { max., } 240 \\ & \text { VAC max. } \\ & \text { *2 } \end{aligned}$ | 234 | 75 | 64 | Yes | No | G70A-ZOC16-5 | $\begin{aligned} & \text { U, C, CE } \\ & \text { (VDE } \\ & \text { certified) } \end{aligned}$ |
|  |  |  | Relay | NPN |  | 10 A (Ter- <br> minal <br> blockal- <br> lowable | 24 VDC |  |  |  |  |  | G70A-ZOC16-3 |  |
|  |  |  | outputs | PNP |  |  |  |  |  |  |  |  | G70A-ZOC16-4 |  |
| Spacesaving | Vertical type G70D-V | Outputs | $\begin{array}{\|l\|} \hline \text { Relay } \\ \text { outputs } \end{array}$ | NPN | $\begin{aligned} & 16 \\ & (\text { SPSTNO } \times 16) \end{aligned}$ | $\begin{array}{\|l\|} \hline 5 \mathrm{~A} \\ \text { or } 3 \mathrm{~A} * 3 \\ \hline \end{array}$ | 24 VDC | 135 | 46 | 81 | Yes | Yes | G70D-VSOC16 | U, C, CE (VDE certified) |
|  |  |  | $\begin{aligned} & \text { MOSFET } \\ & \text { relay } \\ & \text { outputs } \end{aligned}$ |  |  | 0.3 A |  |  |  |  |  |  | G70D-VFOM16 |  |
|  | Flat type G70D |  | Relay outputs | NPN | $\begin{aligned} & 8 \\ & \hline \text { (SPSTNO } \times 8 \text { ) } \end{aligned}$ | 5 A |  | 68 | 93 | 44 | Yes | Yes | G70D-SOC08 | - |
|  |  |  |  |  | $\begin{array}{\|l} 16 \\ \text { (SPSTNO } \times 16 \text { ) } \end{array}$ | 3 A |  | 156 | 51 | 39 |  |  | G70D-SOC16 |  |
|  |  |  |  | PNP | $\begin{array}{\|l} 16 \\ \text { (SPSTNO } \times 16 \text { ) } \end{array}$ | 3 A |  |  |  |  |  |  | G70D-SOC16-1 |  |
|  | $\pm$ |  | MOSFET relay outputs | NPN | $\begin{array}{\|l} 16 \\ \hline \text { (SPSTNO } \times 16 \text { ) } \end{array}$ | 0.3 A |  |  |  |  |  |  | G70D-FOM16 |  |
|  |  |  |  | PNP |  |  |  |  |  |  |  |  | G70D-FOM16-1 |  |
| Highcapacity, spacesaving | G70R | Outputs | Relay outputs | NPN | $\begin{aligned} & 8 \\ & (\text { SPSTNO } \times 8) \end{aligned}$ | 10 A | 24 VDC | 136 | 93 | 55 | Yes | Yes | G70R-SOC08 *7 | - |

${ }^{*}$. G70A is a I/O terminal socket product. Relay is not provided with the socket. Be sure to order a relay, timer separately.
*2. Each relay to be mounted must incorporate a coil that has proper specifications within the maximum rated voltage range.
*3. Eight or fewer points ON: 5 A, Nine or more points ON: 3 A.
*4. Internal common at terminal block: No internal connections
*5. Internal common at terminal block: Internal IO common 16 points internally connected
*6. Internal common at terminal block: Every 4 points internally connected at terminal block middle row.
*7. Product no longer available to order.
Note: 1. For the combination of Input Units with I/O Relay Terminal and Connecting Cables, refer to 3. Connecting I/O Relay Terminals.
2. Please refer to each Datasheet about details.
3. When the G7TC is used with an AC rated voltage, three rated currents can be used. If a coil voltage of 110 or 220 VAC is used, 50 Hz cannot be used.

Cables for I/O Relay Terminals

| Type | Name | I/O Classification | Appearance | Cable length L (mm) |  | Models |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fujitsu connectors (24 pins) | Cables with Connectors (1:1) <br> XW2Z-R $\square C$ | 16 I/O points |  | 1,000 |  | XW2Z-R100C |
|  |  |  |  | 1,500 |  | XW2Z-R150C |
|  |  |  |  | 2,000 |  | XW2Z-R200C |
|  |  |  |  | 3,000 |  | XW2Z-R300C |
|  |  |  |  | 5,000 |  | XW2Z-R500C |
| Fujitsu connectors (40 pins) | Cables with Connectors (1:2) <br> XW2Z-RIDC- $\square$ <br> XW2Z-RO $\square$ C- $\square$ | 32 input points | 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) | 16 I/O points |  | 250 |  | XW2Z-RI25C |
|  |  |  |  | 500 |  | XW2Z-RI50C |
|  | XW2Z-RI口C |  |  | 250 |  | XW2Z-RO25C |
|  | XW2Z-RO-C |  |  | 500 |  | XW2Z-RO50C |
| MIL connectors (40 pins) | Cables with Connectors(1:2) | 32 I/O points |  | (A) 500 | (B) 250 | XW2Z-RO50-25-D1 |
|  |  |  |  | (A) 750 | (B) 500 | XW2Z-R075-50-D1 |
|  |  |  |  | (A) 1,000 | (B) 750 | XW2Z-R0100-75-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-R0500-475-D1 |
|  | XW2Z-ROD- $\square$-D1, <br> XW2Z-RID-D-D1 |  |  | (A) 500 | (B) 250 | XW2Z-RI50-25-D1 |
|  |  |  |  | (A) 750 | (B) 500 | XW2Z-R175-50-D1 |
|  |  |  |  | (A) 1,000 | (B) 750 | XW2Z-RI100-75-D1 |
|  |  |  |  | (A) 1,500 | (B) 1,250 | XW2Z-RI150-125-D1 |
|  |  |  |  | (A) 2,000 | (B) 1,750 | XW2Z-RI200-175-D1 |
|  |  |  |  | (A) 3,000 | (B) 2,750 | XW2Z-RI300-275-D1 |
|  |  |  |  | (A) 5,000 | (B) 4,750 | XW2Z-RI500-475-D1 |

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

## Mountable Racks

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

## Specifications

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



- The signal names of the terminals are the device variable names.

The device variable names are the names that use "Jxx" as the device name.


External connection
and terminal-device variable diagram


- Polarity of the input power supply can be connected in either direction.
- The signal names of the terminals are the device variable names.

The device variable names are the names that use "Jxx" as the device name.
*1. The ON response time will be $20 \mu$ s maximum and OFF response time will be $400 \mu \mathrm{~s}$ maximum even if the response time are set to 0 ms due to internal element delays.
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.
Note: Although 16 I/O bits (1 word) are allocated, only 8 of these can be used for external I/O.

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


- Polarity of the input power supply can be connected in either direction.
- The signal names of the terminals are the device variable names.

The device variable names are the names that use "Jxx" as the device name.
*1. The ON response time will be $20 \mu$ s maximum and OFF response time will be $400 \mu \mathrm{~s}$ maximum even if the response time are set to 0 ms due to internal element delays.
*2. Terminal numbers A 0 to A 8 and B 0 to B 8 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)


- Polarity of the input power supply can be connected in either direction.
- The signal names of the terminals are the device variable names.

The device variable names are the names that use "Jxx" as the device name.
*1. The ON response time will be $15 \mu \mathrm{~s}$ maximum and OFF response time will be $90 \mu \mathrm{~s}$ maximum even if the response time are set to 0 ms due to internal element delays.
*2. Terminal numbers A0 to A8 and B0 to B8 are used in the external connection and terminal-device variable diagrams. They are not printed on the Units.

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


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

The device variable names are the names that use "Jxx" as the device name

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

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


- The input power polarity can be connected in either direction.
- Be sure to wire both pins 23 and 24 (COMO), 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.

[^0]CJ1W-ID233 DC Input Unit (24 VDC, 32 Points)


- The input power polarity can be connected in either direction.
- Be sure to wire both pins 23 and 24 (COMO), 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.

[^1]CJ1W-ID261 DC Input Unit (24 VDC, 64 Points)


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

| Name | 64-point DC Input Unit with MIL Connector |  |
| :---: | :---: | :---: |
| Model | CJ1W-ID262 |  |
| Rated Input Voltage | 24 VDC |  |
| Rated Input Voltage Range | 20.4 to 26.4 VDC |  |
| Input Impedance | $5.6 \mathrm{k} \Omega$ |  |
| 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 | $8.0 \mathrm{~ms} \mathrm{max}$. (Can be set to between 0 and 32 in the Setup.) * |  |
| OFF Response Time | $8.0 \mathrm{~ms} \mathrm{max}$. (Can be set to between 0 and $32 \mathrm{in} \mathrm{the} \mathrm{Setup)}$. |  |
| Number of Circuits | 64 (16 points/common, 4 circuits) |  |
| Number of Simultaneously ON Points | $50 \%$ (8 points/common) simultaneously ON (at 24 VDC ) (Refer to the following illustrations.) |  |
| Insulation Resistance | $20 \mathrm{M} \Omega$ min. between external terminals and the GR terminal (100 VDC) |  |
| Dielectric Strength | 1,000 VAC between the external terminals and the GR terminal for 1 minute at a leakage current of 10 mA max. |  |
| Internal Current Consumption | 90 mA max. |  |
| Weight | 110 g max. |  |
| Accessories | None |  |
| Circuit Configuration | - The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name. | Number of Simultaneously ON Points vs. <br> Ambient Temperature Characteristic |
| External connection and terminal-device variable diagram | CN1 | CN2 |
|  | - The input power polarity can be connected in either direction. <br> - Be sure to wire both pins 23 and 24 (COMO) of CN1, and set the same polarity for both pins. <br> - Be sure to wire both pins 3 and 4 (COM1) of CN1, and set the same polarity for both pins. <br> - The signal names of the terminals are the device variable names. The device variable names are the names that use "Jxx" as the device name. | - The input power polarity can be connected in either direction. <br> - Be sure to wire both pins 23 and 24 (COM2) of CN2, and set the same polarity for both pins. <br> - Be sure to wire both pins 3 and 4 (COM3) of CN2, and set the same polarity for both pins. <br> - 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. |

[^2]CJ1W-IA201 AC Input Unit (200 VAC, 8 Points)


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

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

Bit Allocations for Input Unit
8-point Input Unit

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

32-point Input Unit

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

16-point Input Unit

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

64-point Input Unit

| Allocated CIO word |  | Signal name ( $\mathrm{CJ} / \mathrm{NJ}$ ) |
| :---: | :---: | :---: |
| CIO | Bit |  |
| Wd m (Input) | 00 | IN0/Jxx_Ch1_In00 |
|  | 01 | IN1/Jxx_Ch1_In01 |
|  | : | : |
|  | 14 | IN14/Jxx_Ch1_In14 |
|  | 15 | IN15/Jxx_Ch1_In15 |
| Wd m+1 (Input) | 00 | INO/Jxx_Ch2_In00 |
|  | 01 | IN1/Jxx_Ch2_In01 |
|  | : | : |
|  | 14 | IN14/Jxx_Ch2_In14 |
|  | 15 | IN15/Jxx_Ch2_In15 |
| Wd m+2 (Input) | 00 | IN0/Jxx_Ch3_In00 |
|  | 01 | IN1/Jxx_Ch3_In01 |
|  | : | : |
|  | 14 | IN14/Jxx_Ch3_ln14 |
|  | 15 | IN15/Jxx_Ch3_In15 |
| Wd m+3 (Input) | 00 | IN0/Jxx_Ch4_In00 |
|  | 01 | IN1/Jxx_Ch4_In01 |
|  | : | : |
|  | 14 | IN14/Jxx_Ch4_In14 |
|  | 15 | IN15/Jxx_Ch4_In15 |

## External Interface

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



## 32-point Units (Models with 40-point Fujitsu 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 $18\left(0.32\right.$ to $\left.0.82 \mathrm{~mm}^{2}\right)$ |

## Crimp terminals

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


## I/O Unit Wiring Methods

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

1. User-provided Cable

An I/O Unit can be directly connected to an external device by using a connector.


| A | User-provided cable |
| :---: | :--- |
| B | External device |
| $\mathbf{C}$ | 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 <br> XW2Z |
| :---: | :--- |
| B | Connector-Terminal Block Conversion Unit <br> XW2R |
| C | Conversion to a screw terminal block |

3. I/O Relay Terminal

Use a Connecting Cable to connect to an I/O Relay Terminal.
The I/O specifications can be converted to relay outputs and AC inputs by connecting the I/O Relay Terminal to an I/O Unit.


| A | Connecting Cable for I/O Relay Terminals <br> XW2Z-R |
| :---: | :--- |
| B | I/O Relay Terminals |
|  |  |
|  |  |
|  |  |
|  | 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 |
| :--- | :--- | :--- |
| CJ1W-ID231 | Input Unit, 24 VDC, 32 inputs | Pins |
| 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 <br> Connector cover: FCN-360C040-J2 |
| Crimped | 40 | C500-CE405 | Socket: FCN-363J040 <br> Connector cover: FCN-360C040-J2 <br> 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 |
| :--- | :--- | :---: |
| CJ1W-ID232 <br> CJ1W-ID233 | Input Unit, 24 VDC, 32 inputs | Pins |
| CJ1W-ID262 | Input Unit, 24 VDC, 64 inputs | 40 |

Applicable Cable-side Connectors

| Connection | Pins | OMRON set | DDK parts |
| :--- | :--- | :--- | :--- |
| Pressure-welded | 40 | XG4M-4030-T *1 | FRC5-A040-3T0S |
| Crimped | 40 | XG5N-401 *2 | HU-400S2-001 |
|  | - | Crimp Contacts for XG5N *3 <br> XG5W-0232 (loose contacts: 100 pieces) <br> 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 $0.2 \mathrm{~mm}^{2}$ ). 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) |  | Model |
| Product Name |  |  |
| 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 | $\begin{gathered} \text { I/O } \\ \text { capacity } \end{gathered}$ | Number of connectors | Polarity | Connection pattern | Connecting Cable * | Connector-Terminal Block Conversion Unit | Wiring method | Common terminals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CJ1W-ID231 | 32 inputs | 1 Fujitsu connector | NPN/PNP | A | XW2Z-■ด口PF | XW2R-J34GD-C1 | Phillips screw | No |
|  |  |  |  |  |  | XW2R-E34GD-C1 | Slotted screw (rise up) |  |
|  |  |  |  |  |  | XW2R-P34GD-C1 | Push-in spring |  |
| CJ1W-ID232 | 32 inputs | 1 MIL connector | NPN/PNP | A | XW2Z-पППPM | XW2R-J34GD-C2 | Phillips screw | No |
|  |  |  |  |  |  | XW2R-E34GD-C2 | Slotted screw (rise up) |  |
|  |  |  |  |  |  | XW2R-P34GD-C2 | Push-in spring |  |
| CJ1W-ID233 | 32 inputs | 1 MIL connector | NPN/PNP | A | XW2Z-■ $\square \square P M$ | XW2R-J34GD-C2 | Phillips screw | No |
|  |  |  |  |  |  | XW2R-E34GD-C2 | Slotted screw (rise up) |  |
|  |  |  |  |  |  | XW2R-P34GD-C2 | Push-in spring |  |
| CJ1W-ID261 | 64 inputs | 2 Fujitsu connectors | NPN/PNP | B | $\begin{aligned} & \text { XW2Z-पดमPF } \\ & \text { (2 pcs) } \end{aligned}$ | XW2R-J34GD-C1 (2 Units) | Phillips screw | No |
|  |  |  |  |  |  | XW2R-E34GD-C1 (2 Units) | Slotted screw (rise up) |  |
|  |  |  |  |  |  | XW2R-P34GD-C1 (2 Units) | Push-in spring |  |
| CJ1W-ID262 | 64 inputs | 2 MIL connectors | NPN/PNP | B | $\begin{aligned} & \text { XW2Z- } \begin{array}{l} \text { (2 pcs) } \end{array} \text { (PM } \end{aligned}$ | XW2R-J34GD-C2 (2 Units) | Phillips screw | No |
|  |  |  |  |  |  | XW2R-E34GD-C2 (2 Units) | Slotted screw (rise up) |  |
|  |  |  |  |  |  | XW2R-P34GD-C2 (2 Units) | Push-in spring |  |

* The box $\square$ 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 |  |  |  | Connection pattern | Connecting Cables |  | I/O Relay Terminals |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Model | I/O capacity | External connectors | Polarity |  | Model *1 | Quantity required | Model | $\begin{gathered} \text { I/O } \\ \text { points } \end{gathered}$ | Quantity required | Wiring method |
| CJ1W-ID231 | 32 inputs | 1 Fujitsu connector (40 p) | Sinking/ Sourcing (NPN/PNP) | A | XW2Z-RI $\square \mathrm{C}-\square$ | 1 | G70V-SID16P(-1)(-C16) *2 | 16 | 2 | Push-in spring |
|  |  |  |  |  |  |  | G7TC-ID/IA16 | 16 |  | Screw terminal |
|  |  |  |  |  |  |  | G70A-ZIM16-5 *3 | 16 |  |  |
| CJ1W-ID232 | 32 inputs | 1 MIL connector$(40 \mathrm{p})$ | Sinking/ Sourcing (NPN/PNP) | A | XW2Z-RO■-■-D1 | 1 | G70V-SID16P(-1)(-C16) *2 | 16 | 2 | Push-in spring |
|  |  |  |  |  |  |  | G7TC-ID/IA16 | 16 |  | Screw terminal |
|  |  |  |  |  |  |  | G70A-ZIM16-5 | 16 |  |  |
| CJ1W-ID233 | 32 inputs | 1 MIL connector (40 p) | Sinking/ Sourcing (NPN/PNP) | A | XW2Z-RO■-口-D1 | 1 | G70V-SID16P(-1)(-C16) *2 | 16 | 2 | Push-in spring |
|  |  |  |  |  |  |  | G7TC-ID/IA16 | 16 |  | Screw terminal |
|  |  |  |  |  |  |  | G70A-ZIM16-5*3 | 16 |  |  |
| CJ1W-ID261 | 64 inputs | 2 Fujitsu connectors (40 p) | Sinking/ Sourcing (NPN/PNP) | B | XW2Z-RI $\square \mathrm{C}-\square$ | 2 | G70V-SID16P(-1)(-C16) *2 | 16 | 4 | Push-in spring |
|  |  |  |  |  |  |  | G7TC-ID/IA16 | 16 |  | Screw terminal |
|  |  |  |  |  |  |  | G70A-ZIM16-5 *3 | 16 |  |  |
| CJ1W-ID262 | 64 inputs | 2 MIL connectors (40 p) | Sinking/ Sourcing (NPN/PNP) | B | XW2Z-RO■- $\square$-D1 | 2 | G70V-SID16P(-1)(-C16) *2 | 16 | 4 | Push-in spring |
|  |  |  |  |  |  |  | G7TC-ID/IA16 | 16 |  | Screw terminal |
|  |  |  |  |  |  |  | G70A-ZIM16-5 *3 | 16 |  |  |

*1. The box $\square$ 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 $\times 16$ )

## 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


## 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ロ-EIP <br> CJ2H-CPU6 <br> CJ2M-CPU | W472 | Describes the following for CJ2 CPU Units: <br> - Overview and features <br> - Basic system configuration <br> - Part nomenclature and functions <br> - Mounting and setting procedure <br> - Remedies for errors <br> - Also refer to the Software User's Manual (W473). |
| SYSMAC CJ Series <br> CJ1H-CPU $\square \square \mathrm{H}-\mathrm{R}, \mathrm{CJ} 1 \mathrm{G} / \mathrm{H}-\mathrm{CPU} \square \square \mathrm{H}, \mathrm{CJ} 1 \mathrm{G}-\mathrm{CPU} \square \square \mathrm{P}$, <br> CJ1G-CPU $\qquad$ , CJ1M-CPU $\square$ <br> 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- $\square$ | 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. <br> - Features and system configuration <br> - Introduction <br> - Part names and functions <br> - General specifications <br> - Installation and wiring <br> - Maintenance and inspection <br> Use this manual together with the NJ-series CPU Unit Software User's Manual (Cat. No. W501). |

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

[^1]:    * The ON response time will be $15 \mu$ s maximum and OFF response time will be $90 \mu \mathrm{~s}$ maximum even if the response times are set to 0 ms due to internal element delays.
    Note: Observe the following restrictions when connecting to a 2 -wire sensor.
    - Make sure the input power supply voltage is larger than the ON voltage ( 19 V ) plus the residual voltage of the sensor (approx. 3 V ).
    - Use a sensor with a minimum load current of 3 mA min.
    - Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

[^2]:    * The ON response time will be $120 \mu$ s maximum and OFF response time will be $400 \mu \mathrm{~s}$ maximum even if the response times are set to 0 ms due to internal element delays.
    Note: Observe the following restrictions when connecting to a 2 -wire sensor.
    - Make sure the input power supply voltage is larger than the ON voltage ( 19 V ) plus the residual voltage of the sensor (approx. 3 V ).
    - Use a sensor with a minimum load current of 3 mA min.
    - Connect bleeder resistance if you connect a sensor with a minimum load current of 5 mA or higher.

