

Special I/O Selection

This section describes the CJ1 modules that are specially designed to handle analog, multiple-loop temperature control, high-speed counting, and single- and multiple-axis position control right on the PLC. All of these modules have independent co-processors to handle the specialized functions to reduce the load on the CPU and keep cycle times extremely fast.

Analog I/O Modules

These modules convert discrete signals to/from the following current and voltage ranges: 4 to 20 mA, 1 to 5 V, 0 to 10 V, 0 to 5 V, and -10 to 10 V.

Does your application require monitoring of up to eight analog inputs from process variables such as temperature, pressure, speed, flow rate or power factor?

Analog Input Modules		
Number of inputs	8	4
Model number	CJ1W-AD081-V1	CJ1W-AD041-V1
Resolution	1/8000	1/8000
Conversion speed	250 μ s/point	250 μ s/point
See page	B-63	B-63

Does your application need to provide up to eight analog signals to regulators, servo controllers, variable-speed controllers and chart recorders?

Analog Output Modules				
Number of outputs	8	8	4	2
Model number	CJ1W-DA08V	CJ1W-DA08C	CJ1W-DA041	CJ1W-DA021
Resolution	1/4000 or 1/8000	1/4000 or 1/8000	1/4000	1/4000
Conversion speed	1 ms/point max. or 250 μ s/point max.	1 ms/point max. or 250 μ s/point max.	1 ms/point	1 ms/point
See page	B-64	B-64	B-64	B-64

Does your application require monitoring of up to four analog inputs from process variables and need to provide up to two analog signals?

Analog I/O Modules	
Number of inputs	4
Number of outputs	2
Model number	CJ1W-MAD42
Resolution	1/4000 or 1/8000
Conversion speed	1 ms/point max. or 500 μ s/point max.
See page	B-66

Multi-Loop Temperature Control Modules

Perform complete temperature control and report results right from the CJ1.

- Both 2- and 4-loop controllers offer independent settings for each loop
- Ideal for zone control in extrusion and heat-treating applications as well as reliable temperature control for multiple processes
- Two-loop controllers offer heater burnout detection function for effective diagnostics in critical processes
- Separate thermocouple and platinum RTD input modules assure the most accurate processing of temperature data

Module	Temperature Sensor Input	Control Loops	Control Output Type	See page
CJ1W-TC001	Thermocouples (R, S, K, J, T, B and L)	4 loops	Open collector, NPN	B-67
CJ1W-TC002			Open collector, PNP	B-67
CJ1W-TC003		2 loops with heater burnout detection function	Open collector, NPN	B-67
CJ1W-TC004			Open collector, PNP	B-67
CJ1W-TC101	Platinum resistance thermometer (Pt100 and JPt100)	4 loops	Open collector, NPN	B-67
CJ1W-TC102			Open collector, PNP	B-67
CJ1W-TC103		2 loops with heater burnout detection function	Open collector, NPN	B-67
CJ1W-TC104			Open collector, PNP	B-67

High-Speed Counter Module

Capture and count high-speed input signals that come in faster than can be detected with basic I/O modules.

- Use this four-mode, high-speed counter for pulse rate measurement and data logging
- Support two external outputs and up to 30 internal outputs

Module	Input Frequency	Input Voltages	Input Signals	See page
CJ1W-CT021	10, 50, or 500 kHz	24, 5, 12 VDC and Line Driver	Phases A, B and Z	B-68

Position Control Modules

Control servo or stepper systems that accept pulse-train inputs with these open-loop, single- and multi-axis position control modules. Configure a complete system by combining these parts:

- Position control module (CJ1W-NC□□□)
- Omron SMARTSTEP or W-Series servo drive, or any manufacturer's servo drive

Module	Output	Controlled Axes	See page
CJ1W-NC113	Open collector	1 Axis	B-69
CJ1W-NC213	Open collector	2 Axis	B-69
CJ1W-NC413	Open collector	4 Axis	B-69
CJ1W-NC133	Line driver	1 Axis	B-69
CJ1W-NC233	Line driver	2 Axis	B-69
CJ1W-NC433	Line driver	4 Axis	B-69

ID Sensor Modules

An ID sensor module interfaces a V600-series ID system (an electromagnetic-coupling RFID system) and is used together with Read/Write Heads (R/W Heads) and Data Carriers.

Module	Data Transfer Speed	Number of Connectable R/W Heads	See page
CJ1W-V600C11	160 bytes/scan (between	1	B-72
CJ1W-V600C12	CPU and ID Sensor Module)	2	B-72

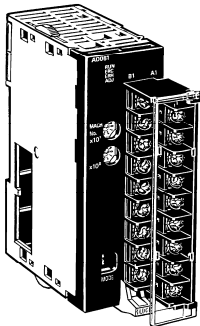
Configuration Guidelines

Remember to add all the current consumptions of basic I/O and special I/O modules, and CPU bus units to determine which power supply is appropriate.

If there are more than 10 modules involved or the current consumption exceeds the capability of the available power supplies, go to page B-109 in the **System Power and Expansion** section for configuration of I/O expansion racks.

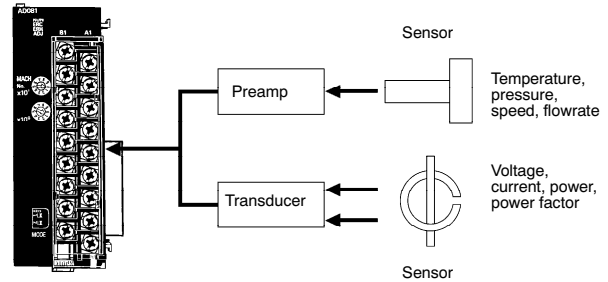
For more Special I/O options, see the **Industrial Networking** section for DeviceNet I/O on page B-88 and CompoBus/S I/O on page B-97.

Convert Analog Signals to Binary Data



CJ1W-AD081-V1
CJ1W-AD041-V1

■ System Configuration



■ Features

- Wire burnout detection
- Peak-hold function
- Mean function
- Offset gain setting

Use the Analog Input Module to convert varying input signals, such as 1 to 5 V or 4 to 20 mA, to binary values between 0000 and 1F40 Hex and store the results in the allocated memory at each cycle. The ladder diagram can be used to transfer the data to the DM Area, or the SCALING instructions (e.g., SCL(194)) can be used to scale the data to the desired range.

Note: Analog Input Terminals are also available as DeviceNet Slaves and as Multiple I/O Terminals. You will find further information on these in the *Industrial Networking and Communications* Section of this catalog.

■ Terminal Arrangement

Input 2 (+)	B1	A1	Input 1 (+)
Input 2 (-)	B2	A2	Input 1 (-)
Input 4 (+)	B3	A3	Input 3 (+)
Input 4 (-)	B4	A4	Input 3 (-)
AG	B5	A5	AG
Input 6 (+)	B6	A6	Input 5 (+)
Input 6 (-)	B7	A7	Input 5 (-)
Input 8 (+)	B8	A8	Input 7 (+)
Input 8 (-)	B9	A9	Input 7 (-)

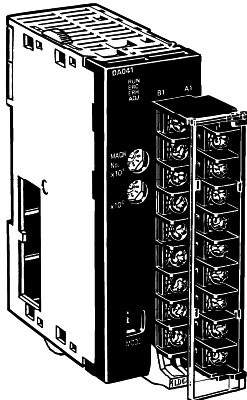
■ Specifications

Model		CJ1W-AD081-V1	CJ1W-AD041-V1
Inputs		8 pts	4 pts
Signal range	Voltages	1 to 5 V	Yes
		0 to 10 V	Yes
		0 to 5 V	Yes
		-10 to 10 V	Yes
	Currents	4 to 20 mA	Yes
Signal range settings		8 settings (one for each point)	4 settings (one for each point)
Resolution		1/8000 (settable to 1/4000)	1/8000 (settable to 1/4000)
Conversion speed		250 μs/point max. (settable to 1 ms/point)	250 μs/point max. (settable to 1 ms/point)
Overall accuracy (at 23°C ±2°C)		Voltage: ±0.2% of full scale Current: ±0.4% of full scale	
Connections		Terminal block	
Features	Wire burnout detection	Yes	
	Peak-hold function	Yes	
	Averaging (mean function)	Yes	
Unit No.		0 to 95	

Additional Information: For more details and specifications on any of these modules, refer to manual No. W345.

Analog Output Modules

Convert Binary Data to Analog Signals



CJ1W-DA021
CJ1W-DA041
CJ1W-DA08V
CJ1W-DA08C

■ Features

- Output hold function
- Offset gain adjustment

Binary data between 0000 to 0FA0 Hex in the allocated words can be converted to analog signals, such as 1 to 5 V or 4 to 20 mA for output. Placing data in the allocated words within the ladder is all that is required.

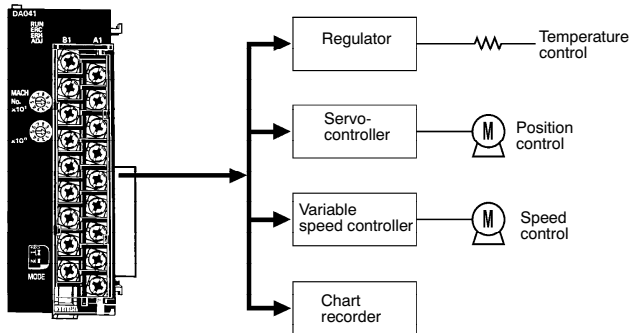
- Scaling function

Setting values in any specified unit within a range of $\pm 32,000$ as the upper and lower limits allows D/A conversion to be executed and analog signals to be output with these values as full scale.

- Voltage and Current Signals

Note: Analog Output Terminals are also available as DeviceNet Slaves and for Multiple I/O Terminals.

■ System Configuration



■ Terminal Arrangements

CJ1W-DA021

Voltage output 2 (+)	B1	A1	Voltage output 1 (+)
Output 2 (-)	B2	A2	Output 1 (-)
Current output 2 (+)	B3	A3	Current output 1 (+)
N.C.	B4	A4	N.C.
N.C.	B5	A5	N.C.
N.C.	B6	A6	N.C.
N.C.	B7	A7	N.C.
N.C.	B8	A8	N.C.
0 V	B9	A9	24 V

CJ1W-DA041

Voltage output 2 (+)	B1	A1	Voltage output 1 (+)
Output 2 (-)	B2	A2	Output 1 (-)
Current output 2 (+)	B3	A3	Current output 1 (+)
Voltage output 4 (+)	B4	A4	Voltage output 3 (+)
Output 4 (-)	B5	A5	Output 3 (-)
Current output 4 (+)	B6	A6	Current output 3 (+)
N.C.	B7	A7	N.C.
N.C.	B8	A8	N.C.
0 V	B9	A9	24 V

CJ1W-DA08V (Voltage Output) and CH1W-DA08C (Current Output)

Output 2 (+)	B1	A1	Output 1 (+)
Output 2 (-)	B2	A2	Output 1 (-)
Output 4 (+)	B3	A3	Output 3 (+)
Output 4 (-)	B4	A4	Output 3 (-)
Output 6 (+)	B5	A5	Output 5 (+)
Output 6 (-)	B6	A6	Output 5 (-)
Output 8 (+)	B7	A7	Output 7 (+)
Output 8 (-)	B8	A8	Output 7 (-)
0 V	B9	A9	24 V

■ Specifications

Item	CJ1W-DA021	CJ1W-DA041	CJ1W-DA08V	CJ1W-DA08C
Unit type	CJ-series Special I/O Unit			
Isolation	Between I/O and PLC signals: Photocoupler (No isolation between individual I/O signals.)			
External terminals	18-point detachable terminal block (M3 screws)			
Affect on CPU Unit cycle time	0.2 ms			
Power consumption	5 VDC, 120 mA max.		5 VDC, 140 mA max.	
External power supply	24 VDC +10%, -15% (inrush current: 20 A max., pulse width: 1 ms max.)			
	140 mA max.	200 mA max.	140 mA max.	170 mA max.
Maximum number of Units	Units per Rack (CPU Rack or Expansion Rack): 10 Units max. (See note 1.)			
Data exchange with CPU Unit (See note 2.)	Special I/O Unit Area: CIO 200000 to CIO 2959			
	Internal Special I/O Unit DM Area: (D20000 to D29599)			

Output Specifications and Functions

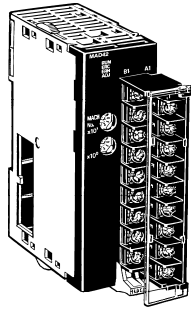
Item	CJ1W-DA021	CJ1W-DA041	CJ1W-DA08V	CJ1W-DA08C
Number of analog outputs	2	4	8	8
Output signal range (See note 3.)	1 to 5 V/4 to 20 mA 0 to 5 V 0 to 10 V -10 to +10 V		1 to 5 V 0 to 5 V 0 to 10 V -10 to +10 V	4 to 20 mA
Output impedance	0 to 5 Ω max. (for voltage output)			
Max. output current (for 1 point)	12 mA (for voltage output)		2.4 mA (for voltage output)	--
Maximum permissible load resistance	600 Ω (current output)		--	350 Ω
Resolution	4,000 (full scale)		4,000/8,000 (See note 4.)	
Set data	16-bit binary data			
Accuracy (See note 5.)	23° ± 2° C	Voltage output: ± 0.3% of full scale Current output: ± 0.5% of full scale		± 0.3% of full scale ± 0.3% of full scale
	0° C to 55° C	Voltage output: ± 0.5% of full scale Current output: ± 0.8% of full scale		± 0.5% of full scale ± 0.6% of full scale
D/A conversion time (See note 6.)	1.0 ms/point max.		1.0 ms or 250 μs max. per point	
Output hold function	Outputs the specified output status (CLR, HOLD, or MAX) under any of the following circumstances: When the Conversion Enable Bit is OFF. (See note 7.) In adjustment mode, when a value other than the output number is output during adjustment. When there is an output setting error or a fatal error occurs at the PLC. When the CPU Unit is on standby. When the Load is OFF.			
Scaling function	Setting values in any specified unit within a range of ± 32,000 as the upper and lower limits allows D/A conversion to be executed and analog signals to be output with these values as full scale. (With the CJ1W-DA08V/DA08C, this function is enabled only for a conversion time of 1.0 s and a resolution of 4,000.)			

- Note: 1. The maximum number of Analog Output Units that can be mounted to one Rack varies depending on the current consumption of the other Units mounted to the Rack.
Select a 24-VDC power supply based on the surge current. The following Omron power supplies are recommended.
S82K-05024: 100 VAC, 50 W, S82K-10024: 100 VAC, 100W, S82J-5524: 100 VAC, 50 W, S82J-5024: 100 VAC, 100W
2. Data exchange methods with the CPU Unit are as follows:

Special I/O Unit Area in CIO Area CIO 2000 to CIO2959 (CIO 200000 to CIO295915)	10 words per Unit	CPU Unit to Analog I/O Unit	Analog output values
	Refreshed cyclically	Analog I/O Unit to CPU Unit	Conversion enable bits
Special I/O Unit Area in DM Area D20000 to D29599	100 words per Unit	CPU Unit to Analog I/O Unit	Output signal conversion settings and signal ranges
	Refreshed at power ON and restarts		Output status when holding outputs

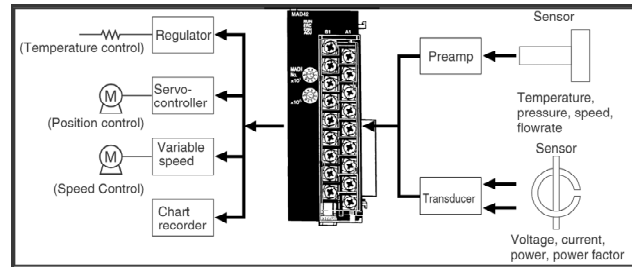
3. Output signal ranges can be set for each output.
4. The CJ1W-DA08V/08C can be set to a conversions cycle of 250 μs and a resolution of 8,000 using the setting in D(m+18).
5. The accuracy is given for full scale. For example, an accuracy of ±0.3% means a maximum error of ±12 (BCD) at a resolution of 4,000. For the CJ1W-DA021/041, the accuracy is at the factory setting for a current output. When using a voltage output, adjust the offset gain as required.
6. D/A conversion time is the time required for converting and outputting the PLC data. It takes at least one cycle for the data stored in the PLC to be read by the Analog Output Unit.
7. When the operation mode for the CPU Unit is changed from RUN mode or MONITOR mode to PROGRAM mode, or when the power is turned ON, the Output Conversion Enable Bit will turn OFF. The output status specified according to the output hold function will be output.

Analog I/O Module



CJ1W-MAD42

System Configuration



Features

Handles both analog inputs and analog outputs.

Analog Inputs

- Peak hold function
- Mean function
- Offset gain setting

Analog Outputs

- Output hold
- Offset gain adjustment

Other Features

- Scaling function

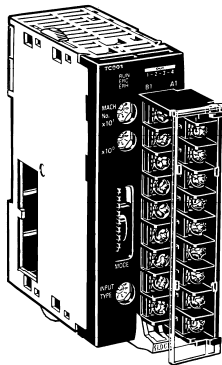
Terminal Arrangement

Voltage output 2 (+)	B1	A1	Voltage output 1 (+)
Output 2 (-)	B2	A2	Output 1 (-)
Current output 2 (+)	B3	A3	Current output 1 (+)
N.C.	B4	A4	N.C.
Input 2 (+)	B5	A5	Input 1 (+)
Input 2 (-)	B6	A6	Input 1 (-)
AG	B7	A7	AG
Input 4 (+)	B8	A8	Input 3 (+)
Input 4 (-)	B9	A9	Input 3 (-)

Specifications

Item		Classification: Special I/O Unit	
		Inputs	Outputs
Inputs/outputs		4 pts	2 pts
Signal range	Voltages	1 to 5 V	Yes
		0 to 10 V	Yes
		0 to 5 V	Yes
		-10 to 10 V	Yes
	CURRENTS	4 to 20 mA	Yes
Signal range settings		4 settings (one for each point)	2 settings (one for each point)
Resolution		1/4000 or 1/8000	
Conversion speed		1.0 ms/pt max. or 500 μs/pt max.	
Overall accuracy (at 23°C)		Voltage: ±0.2% Current: ±0.2%	Voltage: ±0.3% Current: ±0.3%
Connections		Terminal block	
Functions	Wire burnout	Yes	—
	Peak hold	Yes	—
	Mean	Yes	—
	Output hold	—	Yes
	Scaling	Yes	—
Unit No.		0 to 95	

One Module Functions as
Four Temperature Controllers



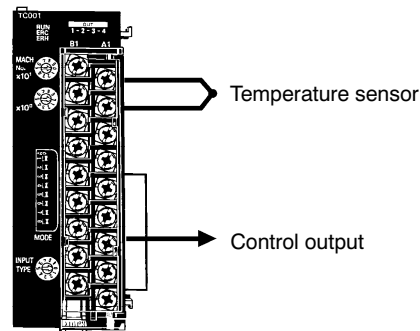
CJ1W-TC□□□

Perform PID control (two degrees of freedom) or ON/OFF control based on inputs from thermocouples or platinum resistance thermometers to control open collector output. Four-loop models and two-loop models (with heater burnout detection function) are available. Words allocated to the Module in memory can be manipulated from the ladder diagram to start/stop operation, set the target value, read the process value, or perform other operations.

■ Features

- Supports 2-loop or 4-loop PID control or ON/OFF control.
- The PID constants for PID control can be set using auto-tuning (AT).
- Select either forward (cooling) operation or reverse (heating) operation.
- Open collector output.
- Sampling period: 500 ms.
- RUN/STOP control.
- Two internal alarms per loop.
- With 2-loop models, a current transformer can be connected to each loop to detect heater burnout.
- Both inputs and outputs can be connected through a terminal block.

■ System Configuration



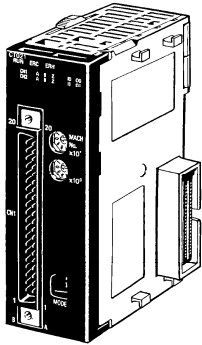
■ Specifications

Temperature sensor inputs	Indication accuracy	Number of loops	Control outputs	Unit numbers	Model
Thermocouples (R, S, K, J, T, B, or L)	±0.3% PV or ±1°C, whichever is larger, ±1 digit max. (±0.3% PV or ±2°F, whichever is larger, ±1 digit max.) See note below.	4 loops	NPN Open collector	0 to 94	CJ1W-TC001
			PNP Open collector		CJ1W-TC002
		2 loops (with heater burnout detection function)	NPN Open collector		CJ1W-TC003
			PNP Open collector		CJ1W-TC004
Platinum resistance thermometers (JPt100 or Pt100)	±0.3% PV or ±0.8°C, whichever is larger, ±1 digit max. (±0.3% PV or ±1.6°F, whichever is larger, ±1 digit max.)	4 loops	NPN Open collector	0 to 94	CJ1W-TC101
			PNP Open collector		CJ1W-TC102
		2 loops (with heater burnout detection function)	NPN Open collector		CJ1W-TC103
			PNP Open collector		CJ1W-TC104

Additional Information: For more details and specifications on any of these modules, refer to manual No. W396.

High-Speed Counter Module

High-Speed, Flexible Control With A Wide Array of Features



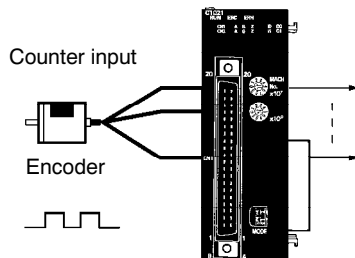
CJ1W-CT021

The High-Speed Counter Module counts pulse signal inputs that are too fast to be detected by normal Input Modules. The Module can be programmed to produce outputs according to counter values for specified conditions, and many other functions are supported in this two-channel Module.

■ Features

- Input frequencies to 500 kHz.
- 32-bit counting range.
- Digital variable noise filter provided.
- 5-/12-/24-V line driver inputs.
- Supports simple, ring, and linear counting modes.
- Supports two external control inputs, and a total of 16 functions can be set: open gate, close gate, preset, reset, capture, stop/capture/reset combinations, reset enable, and more.
- One Unit supports two external outputs and 30 internal outputs with counter value zone comparisons, target comparisons, delays, holds, programmable outputs, and hysteresis settings.
- Pulse rate measurement function and data logging.
- Counter outputs and external control inputs can be used to trigger interrupt tasks in the CPU.

■ System Configuration



Note: Wiring information: Use the same wiring configuration shown for the ID23□ Module. It is also possible to create

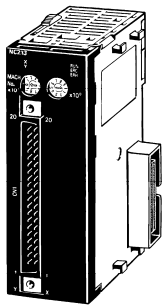
your own cable with the connector provided on page 40 in the *Basic I/O* section of this catalog.

■ Specifications

Model	CJ1W-CT021			
Countable inputs	2 channels			
Counter modes	Simple counter	Linear or ring counter		
Input types	Differential phase inputs (x1)	Differential phase inputs (x1, x2, x4)	Up/Down pulse inputs	Pulse and direction inputs
Countable frequencies	50 kHz	10, 50, or 500 kHz		
Counter values	8000 0000 to 7FFF FFFF (-2,147,483,648 to 2,147,483,647)	Linear counter: 8000 0000 to 7FFF FFFF (-2,147,483,648 to 2,147,483,647) Ring counter: 8000 0000 to FFFF FFFF (0 to 4,294,967,295)		
Counter inputs				
Input signals	Phases A, B, and Z			
Input voltage selected via connector	24 VDC	5 VDC (for ch1 only)	12 VDC (for ch2 only)	Line driver
External inputs				
Number of inputs: 2				
Input voltage	24 VDC			
External outputs				
Number of outputs: 2 (switchable between NPN and PNP)				
External power supply	10.2 to 26.4 VDC			
Max. switching capacity	46 mA at 2 V to 100 mA at 26.4 V			
Response time	0.1 ms max.			
Leakage current	0.1 mA max.			
Residual voltage	1.5 V max.			
Control methods	Simple counter: Forced ON/OFF. Linear counter: Forced ON/OFF, zone comparison, and target comparison.			
Unit numbers	0 to 92			

Additional Information: For more details and specifications on any of these modules, refer to manual No. W401.

High-Speed, High-Precision Positioning
with 1, 2, or 4 Axes



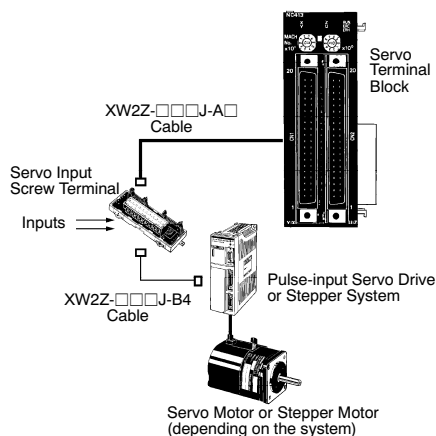
**CJ1W-NC113/
213/413/133/233/433**

These Position Control Modules support open-loop control with pulse-train outputs. Position using automatic trapezoid or S-curve acceleration and deceleration. Models available with 1, 2, or 4 axes. Use in combination with servo motors or stepping motors that accept pulse-train inputs.

■ Features

- Simple positioning systems can be created by directly specifying operation from the CPU when required.
- Positioning data is saved in internal flash memory, eliminating the need to maintain a backup battery.
- Use Windows-based CX-Position Support Software to easily create positioning data as well as to store data and parameters in files.
- S-curve acceleration/deceleration, forced starting, and other features are also supported.

■ System Configuration



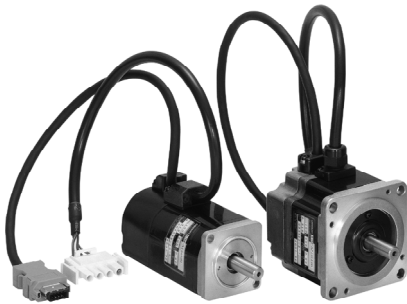
■ Specifications

Model	CJ1W-NC113 CJ1W-NC133	CJ1W-NC213 CJ1W-NC233	CJ1W-NC413 CJ1W-NC433
Controlled axes	1	2	4
Control method	Open-loop control by pulse train output		
Position data	-1,073,741,823 to +1,073,741,823 pulses		
No. of positions	100 per axis		
Speed data	1 to 500 kpps (in 1-pps units)		
No. of speeds	100 per axis		
Acceleration/ deceleration times	0 to 250 s (time to max. speed)		
Acceleration/ deceleration curves	Trapezoidal or S-curve		
Memory	Flash memory		
Windows- based Support Software	CX-Position (WS02-NCTC1-E)		
Control output interface	CJ1W-NC□13: Open-collector output CJ1W-NC□33: Line-driver output		
Operating modes	Direct operation or memory operation		
Data format	Binary (hexadecimal)		
Sample scan times	0.29 to 0.41 ms max./unit for end refresh 0.6 to 0.7 ms for max. instructions for IOWR/IORD		
Startup time	2 ms max. (Refer to operation manual for conditions.)		
Ambient operating temperature	0 to 55°C	0 to 50°C	
External power supply	24 VDC ±10%, 5 VDC ±5% (line driver only)		24 VDC ±5%, 5 VDC ±5% (line driver only)
Unit numbers	0 to 95	0 to 94	

Additional Information: For more details and specifications on any of these modules, refer to manual No. W397 or Position Control Specifications Sheet No. P24FAD1.

SMARTSTEP Servo Motors and Drives

Economical SMARTSTEP Provides Easy-Setup and Precise Control



■ Setup

- Sets up as easily as a stepper system using only the front panel switches.
- Parameter setting software is available, but not required.

■ Operation

- Use the SMARTSTEP in combination with OMRON's CJ1 or CS1 Series PLCs for flexible and precise control.
- Versatile support products include a hand-held Parameter Unit and Monitoring Software.
- SMARTSTEP accepts pulse-train command input making stepper to servo upgrades easy and seamless. (Analog command not available.)

■ Servo Motor Capacities

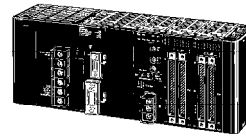
- 30 W, 50 W, 100 W, 200 W, 400 W, 750 W

■ Connections

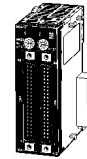
- Select from the full line of control cables available to ensure easy connections between the Servo Drive and a variety of controllers.
- Connects conveniently with one single cable.

■ System Configuration

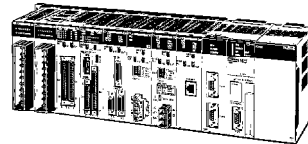
Position Control Solutions



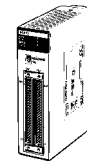
**CJ1 Series
Programmable Controller**



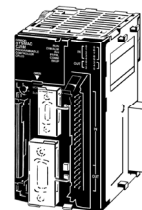
Position Control Modules
CJ1W-NC113/213/413
CJ1W-NC133/233/433



**CS1 Series
Programmable Controller**

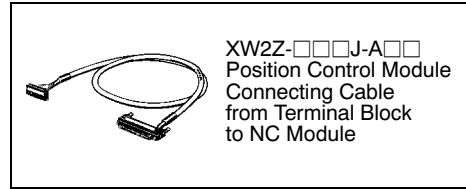
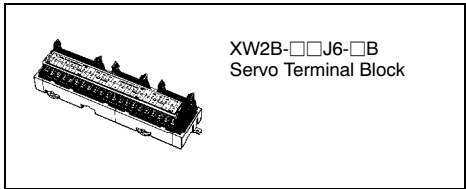
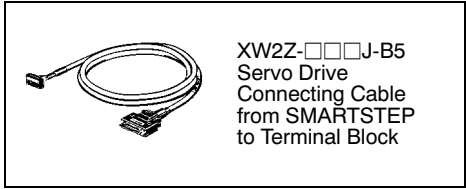


Position Control Modules
CS1W-NC113/213/413
CS1W-NC133/233/433
C200HW-NC113/213/413

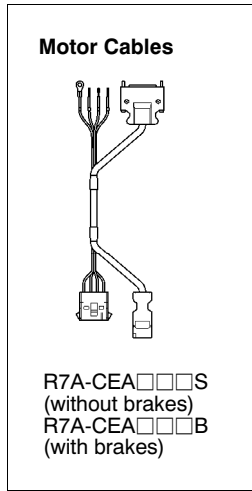
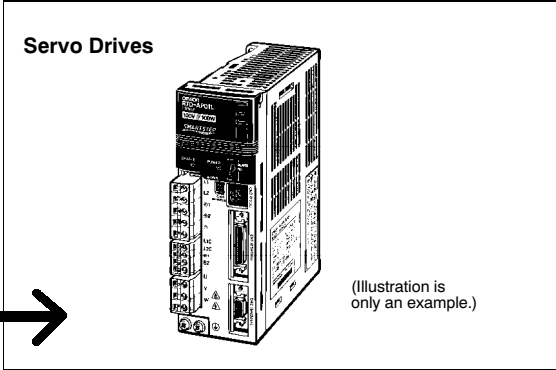
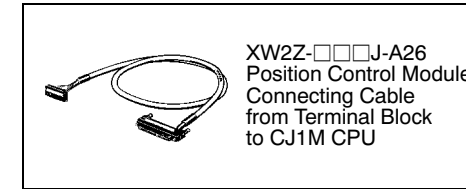
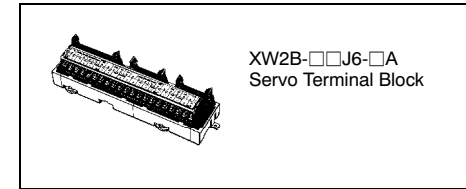
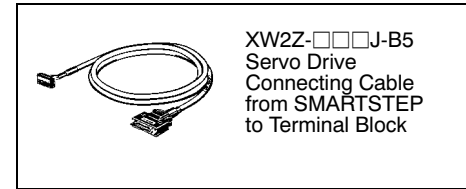


Position Control CPUs

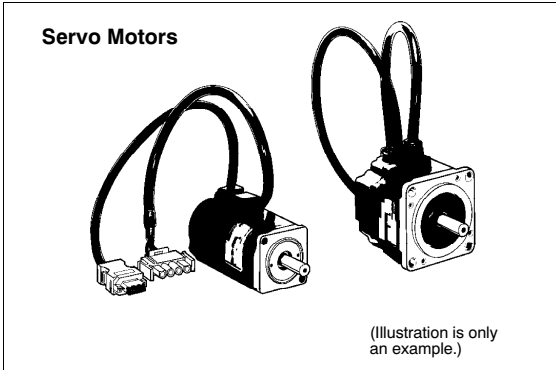
CJ1 CPU Models
CJ1M-CPU22
CJ1M-CPU23



Pulse train references



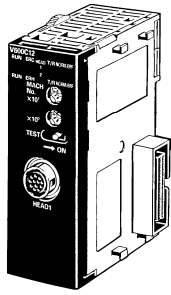
Motor power and feedback signals



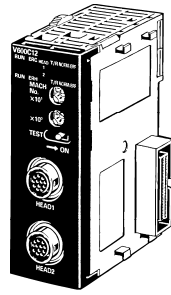
Additional Information: For more details and specifications on any of these products, refer to brochure No. SB SMRTSTP-□.

ID Sensor Modules

Build a Flexible System Combining Distributed and Central Control



CJ1W-V600C11
(Single-head Module)

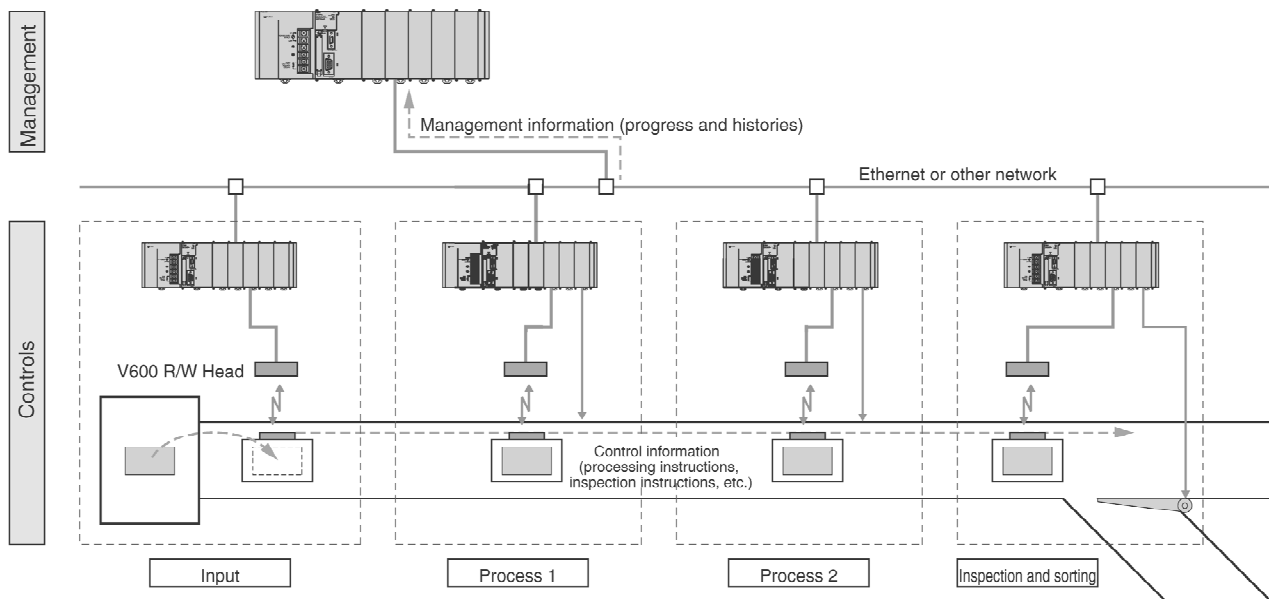


CJ1W-V600C12
(Double-head Module)

■ Features

- Models available to connect to either one R/W Head or two R/W Heads.
- High-speed data communications with the CPU (160 bytes/scan) greatly reduce processing time from communications with Data Carriers to results.
- Efficient programming with control bits and data located in different interface areas.
- Common operating methods for both Single-head and Double-head Modules to effectively apply programming resources through modularization.
- Status confirmation function without CPU program for faster system startup.
- Power supply error flags and processing results monitor data (communications TAT and error codes) for easier maintenance.

■ System Configuration



■ Specifications

Item	CJ1W-V600C11	CJ1W-V600C12												
Data transfer speed	160 bytes/scan (between CPU Module and ID Sensor Module)													
Applicable RFID system	V600 Series													
Number of connectable R/W Heads	1	2												
Commands (The number of bytes that can be specified is given in brackets)	Read/Write [1 to 2,048] Data Fill (Clear) [1 to 2,048 or through end address] Copy (for Double-head Units only) [1 to 2,048] Calculation Write [1 to 4] Bit Set/Bit Clear [1 to 4] Masked Bit Write [2] Memory Check [2] No. of Writes Control [2]													
Communications processing time (See note.)	<table border="1"> <thead> <tr> <th>Command</th> <th>Data Carriers with built-in batteries</th> <th>Battery-free Data Carriers in time priority mode</th> </tr> </thead> <tbody> <tr> <td>Read</td> <td>1.8 x N + 48.4 ms</td> <td>1.8 x N + 79.0 ms</td> </tr> <tr> <td>Write with verify</td> <td>4.2 x JN + 86.5 ms</td> <td>7.1 x N + 180.4 ms</td> </tr> <tr> <td>Write without verify</td> <td>2.2 x N + 72.8 ms</td> <td>4.3 x N + 132 ms</td> </tr> </tbody> </table> <p>N = The number of bytes being read or written</p>		Command	Data Carriers with built-in batteries	Battery-free Data Carriers in time priority mode	Read	1.8 x N + 48.4 ms	1.8 x N + 79.0 ms	Write with verify	4.2 x JN + 86.5 ms	7.1 x N + 180.4 ms	Write without verify	2.2 x N + 72.8 ms	4.3 x N + 132 ms
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Write with verify	4.2 x JN + 86.5 ms	7.1 x N + 180.4 ms												
Write without verify	2.2 x N + 72.8 ms	4.3 x N + 132 ms												
Maintenance features	Communications test, processing results monitor date (communications TAT and error codes)													
Error detection	CPU errors, communications errors with Data Carriers, R/W Head power supply check													

Note: Add the data transfer time to the communications processing time for the command processing time.

■ System

