

Fast and Powerful CPUs for Any Task

All CPU units support IEC61131-3 Structured text, Sequential Function Charts and ladder language. Omron's extensive function block library helps to reduce your programming effort, while you can create your own function blocks to suit your specific needs.

The new CJ2 CPU units offer increased capacity, higher performance plus built-in USB and models with Ethernet ports. They are fully compatible with the extensive range of CJ1 I/O units.



Ordering Information

Max digital I/O points	Program capacity	Data memory capacity	Logic execution speed	Max. I/O units	Width	5 V Current consumption	Built-in functions	Model
2,560	400 K	832 K	16 ns	40	80 mm	820 mA	USB + Ethernet/IP + RS-232C	CJ2H-CPU68-EIP
	250 K	512 K						CJ2H-CPU67-EIP
	150 K	352 K						CJ2H-CPU66-EIP
	100 K	160 K						CJ2H-CPU65-EIP
	50 K	160 K						CJ2H-CPU64-EIP
	60 K	160 K						40 ns
	30 K	160 K	CJ2M-CPU34					
	20 K	64 K	CJ2M-CPU33					
	10 K	64 K	CJ2M-CPU32					
	5 K	64 K	CJ2M-CPU31					
	60 K	160 K	31 mm		500 mA	USB + RS-232C	CJ2M-CPU15	
	30 K	160 K					CJ2M-CPU14	
	20 K	64 K					CJ2M-CPU13	
	10 K	64 K					CJ2M-CPU12	
	5 K	64 K					CJ2M-CPU11	

Pulse I/O Modules (Only CJ2M CPU Unit with Unit Version 2.0 or Later)

Optional Pulse I/O Modules can be mounted to enable pulse I/O. Up to two Pulse I/O Modules can be mounted to the left side of a CJ2M CPU Unit.

Product name	Specifications	Current consumption (A)		Model	Standards
		5 V	24 V		
Pulse I/O Module	Sinking outputs, MIL connector 10 inputs (4 interrupt/quick response inputs, 2 high-speed counter inputs) 6 outputs (2 pulse outputs and 2 PWM outputs)	0.08	---	CJ2M-MD211 NEW	UC1, N, L, CE
	Sourcing outputs, MIL connector 10 inputs (4 interrupt/quick response inputs, 2 high-speed counter inputs) 6 outputs (2 pulse outputs, 2 PWM outputs)	0.08	---	CJ2M-MD212 NEW	

Note: Connectors are not provided with Pulse I/O Modules. Purchase the following Connector, an OMRON Cable with Connectors for Connector Terminal Block Conversion Units, or an OMRON Cable with Connectors for Servo Relay Units.

Power and Flexibility

CJ systems can operate on 24 VDC power supply, or on 100 to 240 VAC. For small-scale systems with mainly digital I/O, a low cost, small capacity power supply can be used. For systems with many analog I/Os and control/communication units, it may be necessary to use a larger power supply unit.

Depending on the CPU type, up to three expansions can be connected to the CPU 'rack', giving a total capacity of 40 I/O units. The total length of the expansion cables of one system may be up to 12 m.



Ordering Information

Power Supply

Input range	Power consumption	Output capacity at 5 VDC	Output capacity at 24 VDC	Max. output power	Features	Width	Model
21.6 - 25.4 VDC	35 W max.	2.0 A	0.4 A	16.6 W	--	27 mm	CJ1W-PD022
19.2 - 28.8 VDC	50 W max.	5.0 A	0.8 A	25 W	--	60 mm	CJ1W-PD025
85 - 264 VAC 47 - 63 Hz	50 VA max.	2.8 A	0.4 A	14 W	--	45 mm	CJ1W-PA202
	100 VA max	5.0 A	0.8 A	25 W	Run output (SPST relay)	80 mm	CJ1W-PA205R
					Maintenance status display	80 mm	CJ1W-PA205C

Note: The CJ1W-PD022 has no galvanic isolation.

I/O Expansion

Type	Description	Width, length	Model
I/O control unit	Required unit on CPU 'rack' to connect I/O expansions	20 mm	CJ1W-IC101
I/O interface unit	Start unit for each I/O expansion 'rack'. Requires a power supply unit.	31 mm	CJ1W-II101
I/O expansion cable	Connects CJ1W-IC101 or -II101 to the next expansion rack's -II101	0.3 m	CS1W-CN313
		0.7 m	CS1W-CN713
		2.0 m	CS1W-CN223
		3.0 m	CS1W-CN323
		5.0 m	CS1W-CN523
		10 m	CS1W-CN133
		12 m	CS1W-CN133-B2

Up to 64 I/O Points per Unit – Input, Output or Mixed

Digital I/O units serve as the PLC's interface to achieve fast, reliable sequence control. A full range of units, from high-speed DC inputs to relay outputs, let you adapt CJ-Series controllers to your needs.

CJ1W units are available with various I/O densities and connection technologies. Up to 16 I/O points can be wired to units with detachable M3 screw terminals or screwless clamp terminals. High-density 32- and 64-point I/O units are equipped with standard 40-pin flat cable-connectors. Prefabricated cables and wiring terminals are available for easy interfacing to high-density I/O units.



Ordering Information

Points	Type	Rated voltage	Rated current	Width	Remarks	Connection type ¹	Model
16	AC input	120 VAC	7 mA	31 mm	--	M3	CJ1W-IA111
8	AC input	240 VAC	10 mA	31 mm	--	M3	CJ1W-IA201
8	DC input	24 VDC	10 mA	31 mm	--	M3	CJ1W-ID201
16	DC input	24 VDC	7 mA	31 mm	--	M3	CJ1W-ID211
16	DC input	24 VDC	7 mA	31 mm	Fast-response (15 μ s ON, 90 μ s OFF)	M3	CJ1W-ID212
16	DC input	24 VDC	7 mA	31 mm	Inputs start interrupt tasks in PLC program	M3	CJ1W-INT01
16	DC input	24 VDC	7 mA	31 mm	Latches pulses down to 50 μ s pulse width	M3	CJ1W-IDP01
32	DC input	24 VDC	4.1 mA	20 mm	--	1 x Fujitsu	CJ1W-ID231
32	DC input	24 VDC	4.1 mA	20 mm	--	1 x MIL ¹ (40 pt)	CJ1W-ID232
32	DC input	24 VDC	4.1 mA	20 mm	Fast-response (15 μ s ON, 90 μ s OFF)	1 x MIL ¹ (40 pt)	CJ1W-ID233
64	DC input	24 VDC	4.1 mA	31 mm	--	2 x Fujitsu	CJ1W-ID261
64	DC input	24 VDC	4.1 mA	31 mm	--	2 x MIL ¹ (40 pt)	CJ1W-ID262
8	Triac output	250 VAC	0.6 mA	31 mm	--	M3	CJ1W-OA201
8	Relay output	250 VAC	2 A	31 mm	Independent response	M3	CJ1W-OC201
16	Relay output	250 VAC	2 A	31 mm	--	M3	CJ1W-OC211
8	DC output (sink)	12 to 24 VDC	2 A	31 mm	--	M3	CJ1W-OD201
8	DC output (source)	24 VDC	2 A	31 mm	With short-circuit protection, alarm	M3	CJ1W-OD202

Points	Type	Rated voltage	Rated current	Width	Remarks	Connection type ^{*1}	Model
16	DC output (sink)	12 to 24 VDC	0.5 A	31 mm	--	M3	CJ1W-OD211
16	DC output (source)	24 VDC	0.5 A	31 mm	With short-circuit protection, alarm	M3	CJ1W-OD212
16	DC output (sink)	24 VDC	0.5 A	31 mm	Fast-response (15 μs ON, 80 μs OFF)	M3	CJ1W-OD213
32	DC output (sink)	12 to 24 VDC	0.5 A	20 mm	--	1x Fujitsu	CJ1W-OD231
32	DC output (source)	24 VDC	0.3 A	20 mm	With short-circuit protection, alarm	1 x MIL ^{*1} (40 pt)	CJ1W-OD232
32	DC output (sink)	24 VDC	0.5 A	20 mm	Fast-response (15 μs ON, 90 μs OFF)	1 x MIL ^{*1} (40 pt)	CJ1W-OD234
64	DC output (sink)	12 to 24 VDC	0.3 A	31 mm	--	2 x Fujitsu	CJ1W-OD261
64	DC output (source)	24 VDC	0.3 A	31 mm	--	2 x MIL ^{*1} (40 pt)	CJ1W-OD262
16 + 16	DC in+out (source)	24 VDC	0.5 A	31 mm	--	2 x MIL ^{*1} (20 pt)	CJ1W-MD232
32 + 32	DC in+out (sink)	24 VDC	0.3 A	31 mm	--	2 x MIL ^{*1} (40 pt)	CJ1W-MD263
32 + 32	DC in+out (TLL)	5 VDC	35 mA	31 mm	--	2 x MIL ^{*1} (40 pt)	CJ1W-MD563

^{*1} MIL = connector according to MIL-C-83503 (compatible with DIN 41651/IEC 60603-1).

Note: All digital I/O unit are designated as basic I/O units.

From Basic to Advanced Analog I/O

The CJ-series offers a wide choice of analog input units, fit for any application, to support high-speed, high-accuracy data acquisition. Analog outputs can be used for accurate control or external indication.

Advanced units with built-in scaling, filtering and alarm functions reduce the need for complex PLC programming. High-accuracy process I/O units support an extensive range of sensors, for fast and accurate data acquisition.



Temperature control units relieve the PLC CPU of PID calculations and alarm monitoring. These functions are handled autonomously by the unit, offering control performance and auto-tuning functions similar to stand-alone temperature controllers.

Ordering Information

Points	Type	Ranges	Resolution	Accuracy (Note 2)	Conversion time	Remarks	Model		
4	Universal analog input	DC voltage, DC current, Thermocouple Pt100/Pt1000, potentiometer	1/256,000	0.05%	60 ms/4 points	All inputs individually isolated, configurable alarms, maintenance functions, user-defined scaling, zero/span adjustment	CJ1W-PH41U		
4		<table border="1"> <tr> <td>0 to 1 to 0 to 0 to 4 to</td> <td>5 V 5 V 10 V 20 mA 20 mA</td> </tr> </table>	0 to 1 to 0 to 0 to 4 to	5 V 5 V 10 V 20 mA 20 mA	V/I: 1/12,000 T/C: 0.1 °C RTD: 0.1 °C	V: 0.3% I: 0.3% T/C: 0.3% RTD: 0.3%	250 ms/4 points	Universal inputs, with zero/span adjustment, configurable alarms, scaling, sensor error detection	CJ1W-AD04U
0 to 1 to 0 to 0 to 4 to		5 V 5 V 10 V 20 mA 20 mA							
	T/C: K, J, T, L, R, S, B, Pt100, Pt1000, JPt100								
4 8	Analog input	0 to 1 to 0 to -10 to 4 to	1/8,000	V: 0.2% I: 0.4%	250 µs/point	Offset/gain adjustment, peak hold, moving average, alarms	CJ1W-AD041-V1		
		5 V 5 V 10 V 10 V 20 mA					CJ1W-AD081-V1		
2 4	Analog output	0 to 1 to 0 to -10 to 4 to	1/4,000	V: 0.02% I: 0.05%	1 ms/point	Offset/gain adjustment, output hold	CJ1W-DA021		
			1/8,000	In: 0.2% Out: 0.3%			CJ1W-DA041		
4 + 2	Analog input + output	0 to 1 to 0 to -10 to 4 to	1/8,000	In: 0.2% Out: 0.3%	1 ms/point	Offset/gain adjustment, scaling, peak hold, moving average, alarms, output hold	CJ1W-MAD42		
4	High-speed input		1/40,000	V: 0.2% I: 0.4%	35 µs/4 points	Direct conversion (CJ2 special instruction)	CJ1W-AD042		

Points	Type	Ranges		Resolution	Accuracy (Note 2)	Conversion time	Remarks	Model
4	High-speed output	1 to 0 to -10 to	5 V 10 V 10 V	1/40,000	0.3%	35 μ s/ 4 points	Direct conversion (CJ2 special instruction)	CJ1W-DA042V
8	Voltage output	0 to 0 to -10 to 1 to	5 V 10 V 10 V 5 V	1/8,000	0.3%	250 μ s/ point	Offset/gain adjustment, output hold	CJ1W-DA08V
8	Current output	4 to	20 mA		0.5%			CJ1W-DA08C
2	Process input	4 to 0 to 0 to -10 to 0 to -5 to 1 to 0 to 1.25 to	20 mA 20 mA 10 V 10 V 5 V 5 V 5 V 1.25 V 1.25 V	1/64,000	0.05%	5/ms point	Configurable alarms, maintenance functions, user-defined scaling, zero/span adjustment, square root, totalizer	CJ1W-PDC15

Notes:

All Analog I/O units are designated as Special I/O units, except CJ1W-TS561/-TS562, which are Basic I/O units (cannot be used with CP1H).

Accuracy for Voltage and Current Inputs/Outputs as percentage of full scale and typical value at 25°C ambient temperature.
Accuracy for Temperature Inputs/Outputs as percentage of process value and typical value at 25°C ambient temperature.
(Consult the operation manual for details.)

In-panel Temperature Control and Monitoring

Temperature control units relieve the PLC CPU of PID calculations and alarm monitoring. These functions are handled autonomously by the unit, offering control performance and auto-tuning functions similar to stand-alone temperature controllers.



Ordering Information

Inputs	Input type	Ranges	Resolution	Accuracy (Note 2)	Conversion time	Remarks	Model	
Temperature Input Units								
2	Thermocouple input	B, E, J, K, L, N, R, S, T, U, WRe5-26, PLII, -100 to 100 mV	1/64,000	0.05%	5 ms/point	Configurable alarms, (absolute + rate-of-change), peak hold, maintenance functions	CJ1W-PTS15	
4		B, J, K, L, R, S, T	0.1°C	0.03% 0.05%	62.5 ms/point		4 configurable alarm outputs	CJ1W-PTS51
6					40 ms/point			CJ1W-TS561
2	Resistance thermometer input	Pt50, Pt100, JPt100, Ni508.4	1/64,000	0.05%	5 ms/point	Configurable alarms (absolute + rate-of-change), peak hold, maintenance functions	CJ1W-PTS16	
4		Pt100, JPt100	0.1°C	0.03% 0.05%	62.5 ms/point		4 configurable alarm outputs	CJ1W-PTS52
6					40 ms/point			CJ1W-TS562

Notes:

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Accuracy for Voltage and Current Inputs/Outputs as percentage of full scale and typical value at 25°C ambient temperature.
Accuracy for Temperature Inputs/Outputs as percentage of process value and typical value at 25°C ambient temperature.
(Consult the operation manual for details)

Temperature Control Units

No. of loops	Specifications		Model
	Temperature sensor inputs	Control outputs	
4 loops	Thermocouple input (R, S, K, J, T, B, L)	Open collector NPN outputs (pulses)	CJ1W-TC001
4 loops		Open collector PNP outputs (pulses)	CJ1W-TC002
2 loops, heater burnout detection function		Open collector NPN outputs (pulses)	CJ1W-TC003
2 loops, heater burnout detection function		Open collector PNP outputs (pulses)	CJ1W-TC004
4 loops	Platinum resistance thermometer input (JPt100, Pt100)	Open collector NPN outputs (pulses)	CJ1W-TC101
4 loops		Open collector PNP outputs (pulses)	CJ1W-TC102
2 loops, heater burnout detection function		Open collector NPN outputs (pulses)	CJ1W-TC103
2 loops, heater burnout detection function		Open collector PNP outputs (pulses)	CJ1W-TC104

Open to Any Communication

The CJ-Series offers both standardized open network interfaces, and cost-efficient high-speed proprietary network links. Datalinks between PLCs, or to higher-level information systems can be made using serial or Ethernet links, or the easy-to-use controller link network.



Ordering Information

Type	Ports	Data transfer	Protocols	Unit class	Width	Connection type	Model
Serial	2 x RS-232C		CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU21-V1
Serial	2 x RS-232C	High-speed	CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU22
Serial	2 x RS-422A/RS-485		CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU31-V1
Serial	2 x RS-422A/RS-485	High-speed	CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU32
Serial	1 x RS-232C + 1 x RS-422/RS-485		CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU41-V1
Serial	1 x RS-232C + 1 x RS-422/RS-485	High-speed	CompoWay/F, Host link, NT link, Modbus, User-defined	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-SCU42
Ethernet	1 x 100 Base-Tx		UDP, TCP/IP, FTP server, SMTP (e-mail), SNMP (time adjust), FINS routing, socket service	CPU bus unit	31 mm	RJ45	CJ1W-ETN21
EtherNet/IP	1 x 100 Base-Tx		EtherNet/IP, UDP, TCP/IP, FTP server, SNMP, SNMP	CPU bus unit	31 mm	RJ45	CJ1W-EIP21
DeviceNet	1 x CAN		DeviceNet	CPU bus unit	31 mm	5-p detachable	CJ1W-DRM21
PROFIBUS-DP	1 x RS-485 (Master)		DP, DPV1	CPU bus unit	31 mm	9-pin D-Sub	CJ1W-PRM21
PROFIBUS-DP	1 x RS-485 (Slave)		DP	Special I/O unit	31 mm	9-pin D-Sub	CJ1W-PRT21
PROFINET-IO	1 x 100 Base-Tx		PROFINET-IO Controller, FINS/UDP	CPU bus unit	31 mm	RJ45	CJ1W-PNT21
CAN	1 x CAN		User-defined, supports 11-bit and 29-bit identifiers	CPU bus unit	31 mm	5-p detachable	CJ1W-CORT21
CompoNet	4-wire, data + power to slaves (Master)		CompoNet (CIP-based)	Special I/O unit	31 mm	4-p detachable IDC or screw	CJ1W-CRM21
CompoBus/S	2-wire (Master)		Omron proprietary	Special I/O unit	20 mm	2-wire screw + 2-wire power	CJ1W-SRM21