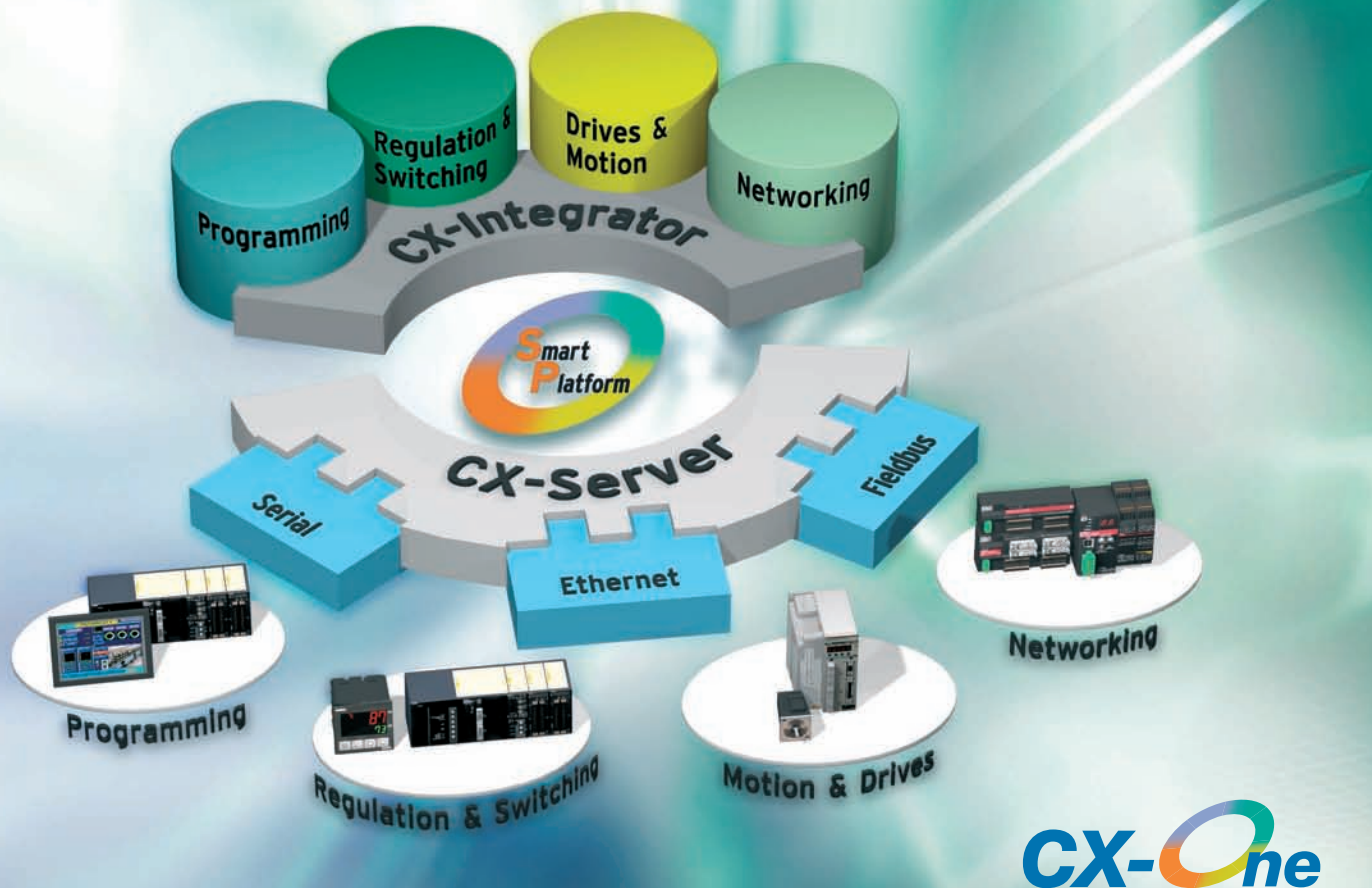# Programmable logical controllers (PLC)

CX-One – one software for all your automation needs

Architecture

CX-One is based on applications software such as CX-Programmer, CX-Designer and applications as the network manager CX-Integrator and CX-Server acting as middleware between networks and applications software. The benefit of such architecture is that users don't have to bother about networks or device drivers while developing their applications. CX-Server supports all Omron networks as well as open fieldbuses.

The latest version of CX-One adds extra key functionality, adds multi-language user interface and supports more devices than previously.

The CX-Integrator – the graphical interface and system configuration tool – the heart of CX-One – now supports Italian, Spanish, French, German and Chinese language in addition to English and Japanese making it easier for engineers to operate the software.

Programming

- CX-Programmer (PLC programming)
- CX-Simulator (PLC simulation)
- CX-Designer (HMI programming)

Motion & Drives

- CX-Motion – for motion controllers with analogue output
- CX-Position – for PTP controllers with pulse output
- CX-Motion – NCF for PTP with motion bus MLII
- CX-Motion – MCH advanced motion with motion link MLII
- CX-Drive – for inverters and servodrives

Regulation and Switching

- CX-Process for PLC process units
- CX-Thermotools for stand-alone temperature controllers

Networks

- CX-Integrator (DeviceNet + Ethernet + Controllerlink)
- CX-Profibus – all profibus modules

CP1H – the all-in-one PLC

Combining the processing power and data capacity of the CJ1M series and the built-in digital I/O functionality of the CPM2A series in a compact PLC outline, the CP1H CPU series sets new standards.

Flexible I/O possibilities

With 4 high-speed encoder inputs up to 1 MHz (single phase) and 4 pulse outputs up to 1 MHz (line driver), CP1H CPUs are ideal for positioning and speed control. Their optional 4 analogue inputs and 2 analogue outputs plus advanced PID control with auto-tuning also make them ideal for continuous control applications.

What's more, expandable with CPM1A I/O units (up to 320 I/O points) and up to two CJ1 Special I/O units or CPU bus units, CP1H CPUs offer a wide range of communication interfaces and advanced I/O units.

Equipped with a USB interface as standard for programming and monitoring, the new CPUs allows up to two serial ports to be plugged in for communication with HMI or field devices. And, of course, they provide 'Smart Platform' communication routing over multiple network layers.

One architecture

The CP1H CPU series has the same architecture as the CS/CJ PLC series, which means programs are compatible for memory allocations and instructions and also support Function Blocks and Structured Text.

Features at a glance

- 4 high-speed encoder inputs and 4 fast pulse outputs
- AC or DC supply, 24 digital inputs and 16 digital outputs (transistor or relay)
- CJ1M-compatible instruction set and execution speed
- Expandable with intelligent CJ1 I/O and communication units
- Analogue I/O built-in (optional), RS232C and RS-422A/485 serial ports (plug-in option boards)
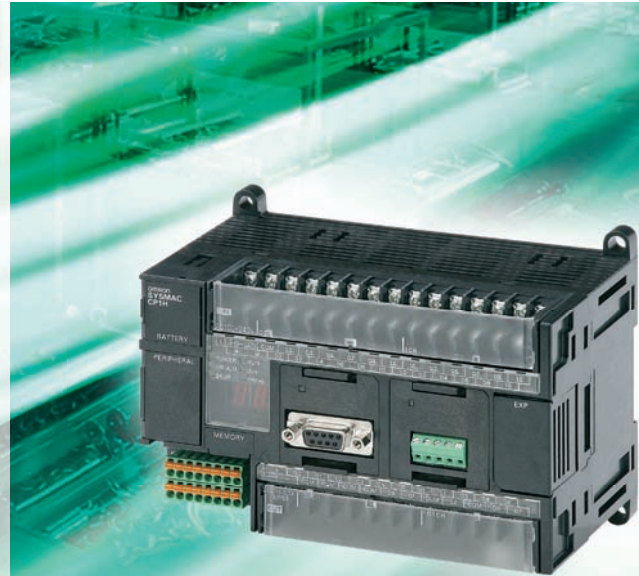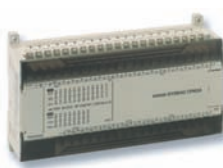
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Selection table

		Compact PLC series			
	Model	CPM1A	CPM2A	CPM2C	CP1H
Built-in	Digital I/O	10 - 40	20 - 60	10 - 32	40
	Interrupt inputs	2 - 4	2 - 4	2 - 4	8
	Counter inputs	1 (5 kHz)	1 (20 kHz) + 2 to 4 (2 kHz)		4 (100 kHz)
	Pulse outputs	1 (2 kHz)	2 (10 kHz)		2 (100 kHz) + 2 (30 kHz)
CPU features / option boards		Built-in AC or DC power supply 2 analog settings	Built-in AC or DC power supply 2 analog settings Removable terminal blocks Standard 2nd serial port	DC power supply 2nd serial port via converter unit	Built-in AC or DC power supply 4 analog in / 2 analog out (XA model) 2 serial communication board plug-ins 1 simple analog input 1 analog setting Removable terminal blocks USB programming port
Max. digital I/O points		10 - 100	80 - 120	106 - 192	320
Execution time (bit instruction)		0.72 - 1.72 µs	0.26 - 0.64 µs		0.1 µs
Program memory		2 kWords	4 kWords		20 kSteps
Data memory		1 kWords	2 kWords		32 kWords
CompactFlash memory		n.a.			
Analog I/O		Up to 6 inputs and 3 outputs 8-bit, 12-bit resolution U, I, TC, Pt100		Up to 4 x (2 in + 1 out) 12-bit resolution U, I, TC, Pt100	Up to approx. 30 inputs / outputs (8, 13, 14-bit resolution U, I, TC, PT100)
Special function units		n.a.			Temperature control Protocol macro RFID sensor unit
Industrial networks		Serial communications			Ethernet (100 BASE-Tx) Controller link Serial communications
Fieldbus master		n.a.		CompoBus/S	DeviceNet CAN PROFIBUS-DP CompoBus/S
Fieldbus I/O link		DeviceNet CompoBusS PROFIBUS-DP		DeviceNet CompoBus/S	DeviceNet PROFIBUS-DP CAN
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Control system

|		Modular PLC series		Rack PLC series	
Model		**CJ1M**	**CJ1G/H**	**CS1G/H**	**CS1D**
Built-in	**Digital I/O**	16	n.a.		
	Interrupt inputs	4	n.a.		
	Counter inputs	2 (100 kHz)	n.a.		
	Pulse outputs	2 (100 kHz)	n.a.		
	CPU features / option boards	Choice of models with and without built-in I/O Ethernet CPU (3 models)	Loop control CPU (4 models)	2 serial ports Loop control board	Loop control board Duplex CPU, Power supply and communications
	Max. digital I/O points	160 - 640	960 - 2560	960 - 5120	960 - 5,120
	Execution time (bit instruction)	0.1 µs	0.04/0.02 µs	0.04/0.02 µs	0.04/0.02 µs
	Program memory	5 - 20 kSteps	10 - 250 kSteps	10 - 250 kSteps	10 - 250 kSteps
	Data memory	32 kWords	64 - 448 kWords	64 - 448 kWords	64 - 448 kWords
	CompactFlash memory	Up to 64 MB		Up to 64 MB	
	Analog I/O	Up to 20 x 8 points 12 bit resolution U, I 15 bit resolution TC, Pt100, Pt1000 inputs	Up to 36 x 8 points 13-bit resolution U, I, 15-bit resolution TC, Pt100, PT1000 inputs	Up to 80 x 8 points, 13 bit resolution or 80 x 4 points, 16 bit resolution U, I, TC, Pt100, process I/O	Up to 75 x 8 points, 13 bit resolution or 75 x 4 points, 16 bit resolution U, I, TC, Pt100, process I/O
	Special function units	Temperature control High-speed counters (500 kHz) SSI encoder input Position control Protocol macro RFID sensor unit		Temperature control SSI encoder input High-speed counters (500 kHz) Position control Motion control Process control Protocol macro RFID sensor unit	
	Industrial networks	Ethernet (100 BASE-Tx) Controller link Serial communications		Ethernet (100 BASE-Tx) Controller link Serial communications	
	Fieldbus master	DeviceNet CAN PROFIBUS-DP CompoBus/S		DeviceNet PROFIBUS-DP CAN / CANopen CompoBus/S	
	Fieldbus I/O link	DeviceNet PROFIBUS-DP CAN		DeviceNet PROFIBUS-DP CAN / CANopen	
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CPM1A CPU units

CPUs with 10 to 40 I/O built-in

Setting a standard for micro PLCs, the CPM1A packs all basic functions into a compact size. Four CPU sizes are available, each with a choice of AC or DC power, relay or transistor outputs. Select any combination of power supply, output, and the number of I/O points to meet your needs.

Ordering information

Input points	Output points	Program capacity	Data memory capacity	Logic execution speed	Expandability	Size in mm (HxWxD)	Power supply	Output method	Built-in functions	Model
6 points	4 points	2 kWords	1 kWords	0.72 µs to 1.72 µs	Not possible	90x66x70	85 to 264 VAC	Relay	1 Encoder input (5 kHz)	CPM1A-10CDR-A-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-10CDT-A-V1
								Transistor (source type)		CPM1A-10CDT1-A-V1
						90x66x50	20.4 to 26.4 VDC	Relay	1 Encoder input (5 kHz)	CPM1A-10CDR-D-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-10CDT-D-V1
								Transistor (source type)		CPM1A-10CDT1-D-V1
12 points	8 points	2 kWords	1 kWords	0.72 µs to 1.72 µs	Not possible	90x86x70	85 to 264 VAC	Relay	1 Encoder input (5 kHz)	CPM1A-20CDR-A-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-20CDT-A-V1
								Transistor (source type)		CPM1A-20CDT1-A-V1
						90x86x50	20.4 to 26.4 VDC	Relay	1 Encoder input (5 kHz)	CPM1A-20CDR-D-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-20CDT-D-V1
								Transistor (source type)		CPM1A-20CDT1-D-V1
18 points	12 points	2 kWords	1 kWords	0.72 µs to 1.72 µs	Up to 3 expansions	90x130x70	85 to 264 VAC	Relay	1 Encoder input (5 kHz)	CPM1A-30CDR-A-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-30CDT-A-V1
								Transistor (source type)		CPM1A-30CDT1-A-V1
						90x130x50	20.4 to 26.4 VDC	Relay	1 Encoder input (5 kHz)	CPM1A-30CDR-D-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-30CDT-D-V1
								Transistor (source type)		CPM1A-30CDT1-D-V1
24 points	16 points	2 kWords	1 kWords	0.72 µs to 1.72 µs	Up to 3 expansions	90x150x70	85 to 264 VAC	Relay	1 Encoder input (5 kHz)	CPM1A-40CDR-A-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-40CDT-A-V1
								Transistor (source type)		CPM1A-40CDT1-A-V1
						90x150x50	20.4 to 26.4 VDC	Relay	1 Encoder input (5 kHz)	CPM1A-40CDR-D-V1
								Transistor (sink type)	1 Encoder input (5 kHz) 1 Pulse output (2 kHz)	CPM1A-40CDT-D-V1
								Transistor (source type)		CPM1A-40CDT1-D-V1

CPM2A CPU units
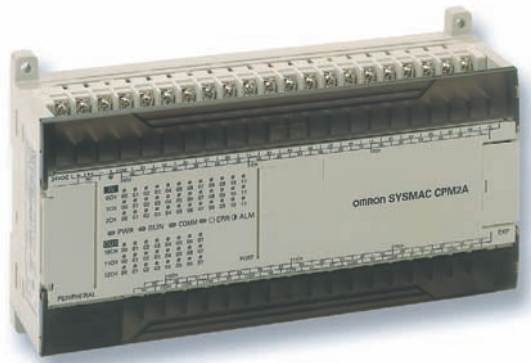
CPUs with 20 to 60 I/O built-in

Advanced functions and high performance in a compact shape. Ideal for automation of packaging and conveyor systems. Provides increased performance and added value to any compact machine.

Ordering information

Input points	Output points	Program capacity	Data memory capacity	Logic execution speed	Expandability	Size in mm (HxWxD)	Power supply	Output method	Built-in functions	Model
12 points	8 points	4 kWords	2 kWords	0.26 µs to 0.64 µs	Up to 3 expansions[*1]	90x130x90	85 to 264 VAC	Relay	1 Encoder input (20 kHz)	CPM2A-20CDR-A
						90x130x55	20.4 to 26.4 VDC	Relay	1 Encoder input (20 kHz)	CPM2A-20CDR-D
								Transistor (sink type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-20CDT-D
								Transistor output (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-20CDT1-D
18 points	12 points	4 kWords	2 kWords	0.26 µs to 0.64 µs	Up to 3 expansions[*1]	90x130x90	85 to 264 VAC	Relay	1 Encoder input (20 kHz)	CPM2A-30CDR-A
						90x130x55	20.4 to 26.4 VDC	Relay	1 Encoder input (20 kHz)	CPM2A-30CDR-D
								Transistor (sink type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-30CDT-D
								Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-30CDT1-D
24 points	16 points	4 kWords	2 kWords	0.26 µs to 0.64 µs	Up to 3 expansions[*1]	90x150x90	85 to 264 VAC	Relay	1 Encoder input (20 kHz)	CPM2A-40CDR-A
						90x150x55	20.4 to 26.4 VDC	Relay	1 Encoder input (20 kHz)	CPM2A-40CDR-D
								Transistor (sink type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-40CDT-D
								Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-40CDT1-D
36 points	24 points	4 kWords	2 kWords	0.26 µs to 0.64 µs	Up to 3 expansions[*1]	90x195x90	85 to 264 VAC	Relay	1 Encoder input (20 kHz)	CPM2A-60CDR-A
						90x195x55	20.4 to 26.4 VDC	Relay	1 Encoder input (20 kHz)	CPM2A-60CDR-D
								Transistor (sink type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-60CDT-D
								Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	CPM2A-60CDT1-D

[*1]   Consult operation manual for details.

CPM2C CPU units

Compact PLC

Compact CPUs with 10 to 32 I/O built-in

An extensive range of models assures efficient machine control in an ultracompact package. CPU units are available with relay or transistor output, terminal block or various connector options, and an optional real-time clock function.

Ordering information

Input points	Output points	Program capacity	Data memory capacity	Logic execution speed	Size in mm (HxWxD)	I/O Connectors	Output method	Built-in functions	Real time clock	Model
6 points	4 points	4 kWords	2 kWords	0.64 µs	90x33x65	2 Terminal blocks	Relay	1 Encoder input (20 kHz)	-	CPM2C-10CDR-D
									Yes	CPM2C-10C1DR-D
						2 Fujitsu (24 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-10CDT1C-D
									Yes	CPM2C-10C1DT1C-D
						2 MIL (20 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-10CDT1M-D
									Yes	CPM2C-10C1DT1M-D
12 points	8 points	4 kWords	2 kWords	0.64 µs	90x33x65	2 Terminal blocks	Relay	1 Encoder input (20 kHz)	-	CPM2C-20CDR-D
									Yes	CPM2C-20C1DR-D
						2 Fujitsu (24 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-20CDT1C-D
									Yes	CPM2C-20C1DT1C-D
						2 MIL (20 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-20CDT1M-D
									Yes	CPM2C-20C1DT1M-D
16 points	16 points	4 kWords	2 kWords	0.64 µs	90x33x65	2 Fujitsu (24 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-32CDT1C-D
						2 MIL (20 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz)	-	CPM2C-32CDT1M-D
6 points	4 points	4 kWords	2 kWords	0.64 µs	90x40x65	1 Fujitsu (24 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz) Programmable Slave with DeviceNet slave and CompoBus/S Master	Yes	CPM2C-S110C-DRT
6 points	4 points	4 kWords	2 kWords	0.64 µs	90x40x65	1 Fujitsu (24 pt)	Transistor (source type)	1 Encoder input (20 kHz) 2 Pulse output (10 kHz) CompoBus/S Master	Yes	CPM2C-S110C

Note: All CPU's are available only with DC supply voltage (CPM2C-PA201 can be used as power supply).
CPU's with sourcing transistor outputs are also available with sinking transistor outputs.
MIL = connector according to MIL-C-83503 (compatible with DIN 41651 / IEC 60603-1).

Powerful compact PLC with 40 I/O built-in

The CP1H is the advanced high speed all-in-one compact PLC. It combines all the strong points from the CPM2A and CJ1 series PLCs. Built-in functions like Digital I/O, High-speed counters, Pulse outputs, and analog Input / Outputs offer huge flexibility. Integrated communication gateway functions make CP1H the first compact PLC in OMRON's Smart Platform concept. All OMRON devices connected to CP1H by Ethernet, DeviceNet, MECHATROLINK-II or Serial link can be configured, programmed and monitored through a single connection, using the CX-One software suite.

Ordering information

Input points	Output points	Expandable up to (digital I/O)[*1]	Program capacity	Data memory capacity	Logic execution speed	Power supply	Output method	Built-in functions		Model
24 points	16 points	320 points	20 kSteps	32 kWords	100 ns	85 to 264 VAC	Relay	4 Encoder inputs (100 kHz) 8 Interrupts / counters	-	CP1H-X40DR-A
						20.4 to 26.4 VDC	Transistor (sink type)	4 Encoder input (100 kHz) 4 Pulse output (2 x 100 kHz + 2 x 30 kHz) 8 Interrupts / counters		CP1H-X40DT-D
							Transistor (source type)			CP1H-X40DT1-D
24 points	16 points	320 points	20 kSteps	32 kWords	100 ns	85 to 264 VAC	Relay	4 Encoder inputs (100 kHz) 8 Interrupts / counters	4 Analog in 2 Analog out (res: 1/12000)	CP1H-XA40DR-A
						20.4 to 26.4 VDC	Transistor (sink type)	4 Encoder input (100 kHz) 4 Pulse output (2 x 100 kHz + 2 x 30 kHz) 8 Interrupts / counters		CP1H-XA40DT-D
							Transistor (source type)			CP1H-XA40DT1-D

*1   CP1H CPU series can be expanded with CPM1A expansion units and CJ1 Special I/O units.

CP1H option modules

Type	Remarks	Model
RS-232C option board	Plug-in board (D-Sub, 9 pins, female)	CP1W-CIF01
RS-422A/485 option board	Plug-in board (Terminal block)	CP1W-CIF11
Memory cassette	512 kWords (upload/download program)	CP1W-ME05M
Expansion I/O connecting cable	80 cm cable to connect CPM1A I/O	CP1W-CN811
CJ1 expansion unit adapter	Unit to connect CJ1 Special I/O units	CP1W-EXT01

CPM1A expansion units
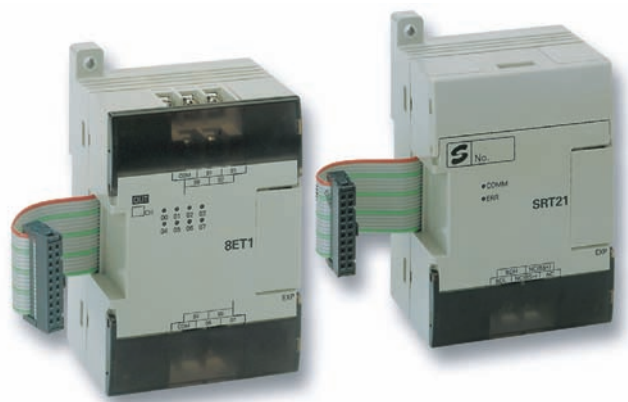
Expand the capacity of your compact PLC

A wide variety of expansion units such as Digital I/O, Analog I/O and Remote I/O are available to create the control system you need for your application. These CPM1A expansion units can be used for CPM1A and also for CPM2A and CP1H PLC series.

Ordering information

Unit	Size in mm (HxWxD)	Output type	Inputs	Outputs	Model
Expansion I/O units	90x66x50	-	8	-	CPM1A-8ED
		Relay	-	8	CPM1A-8ER
		Transistor (sinking)			CPM1A-8ET
		Transistor (sourcing)			CPM1A-8ET1
	90x86x50	Relay	12	8	CPM1A-20EDR1
		Transistor (sinking)			CPM1A-20EDT
		Transistor (sourcing)			CPM1A-20EDT1
	90x150x50	Relay	24	16	CPM1A-40EDR
		Transistor (sinking)			CPM1A-40EDT
		Transistor (sourcing)			CPM1A-40EDT1
Analog I/O units	90x66x50	Analog (resolution 1/256)	2	1	CPM1A-MAD01
	90x86x50	Analog (resolution 1/6000)	2	1	CPM1A-MAD11
	90x86x50	Analog (resolution 1/6000)	4	-	CPM1A-AD041
	90x86x50	Analog (resolution 1/6000)	-	4	CPM1A-DA041
Temperature sensor units	90x86x50	Thermocouple input	2	-	CPM1A-TS001
		Thermocouple input	4	-	CPM1A-TS002
		Platinum resistance input	2	-	CPM1A-TS101
		Platinum resistance input	4	-	CPM1A-TS102
		Platinum resistance input and voltage / current output	2	1	CPM1A-TS101-DA
DeviceNet I/O link unit	90x66x50	-	I/O link of 32 input bits and 32 output bits		CPM1A-DRT21
PROFIBUS-DP I/O link unit	90x66x50	-	I/O link of 16 input bits and 16 output bits		CPM1A-PRT21
CompoBus/S I/O link unit	90x66x50	-	I/O link of 8 input bits and 8 output bits		CPM1A-SRT21

CPM2C expansion units

Expand the capacity of your CPM2C PLC

Expansion I/O units with 8 to 32 I/O points make it possible to configure a control system with a maximum of 192 I/O points

Ordering information

Unit	Output type	I/O Connectors	Inputs	Outputs	Model
Expansion I/O units	-	1 Fujitsu (24 pt)	8	-	CPM2C-8EDC
		1 MIL (20 pt)			CPM2C-8EDM
	-	1 Fujitsu (24 pt)	16	-	CPM2C-16EDC
		1 MIL (20 pt)			CPM2C-16EDM
	Relay	1 Terminal block	-	8	CPM2C-8ER
	Transistor output (source type)	1 Fujitsu (24 pt)			CPM2C-8ET1C
		1 MIL (20 pt)			CPM2C-8ET1M
	Transistor output (source type)	1 Fujitsu (24 pt)	-	16	CPM2C-16ET1C
		1 MIL (20 pt)			CPM2C-16ET1M
	Relay	2 Terminal blocks	6	4	CPM2C-10EDR
	Relay	2 Terminal blocks	12	8	CPM2C-20EDR
	Transistor output (source type)	2 Fujitsu (24 pt)	16	8	CPM2C-24EDT1C
		2 MIL (20 pt)			CPM2C-24EDT1M
	Transistor output (source type)	2 Fujitsu (24 pt)	16	16	CPM2C-32EDT1C
		2 MIL (20 pt)			CPM2C-32EDT1M
Analog I/O units	Analog (resolution 1/6000)	2 Terminal blocks	2	1	CPM2C-MAD11
Temperature sensor units	Thermocouple input	1 Terminal block	2	-	CPM2C-TS001
	Platinum resistance input	1 Terminal block	2	-	CPM2C-TS101
CompoBus/S I/O link unit	-	1 Terminal block	I/O link of 8 input bits and 8 output bits		CPM2C-SRT21
RS232C and RS422 adapter units	-	1 D-sub 9-pin	RS232C		CPM2C-CIF01-V1
		1 Terminal block and 1 D-sub 9-pin	RS232C and RS422		CPM2C-CIF11

Note: Expansion I/O units with sourcing transistor outputs are also available with sinking transistor outputs.
MIL = connector according to MIL-C-83503 (compatible with DIN 41651 / IEC 60603-1).

CJ1 CPU units

Fast and powerful CPUs for any task

OMRON's CS1-series CPUs are available in two processor speeds, each in various memory capacities. Besides the basic CPU models, versions are available for dual-redundant operation, supporting I/O hot-swapping. All CPUs have one dedicated board slot with a direct CPU-bus connection, in which a serial communication board or a loop control board can be mounted. All CPU Units support IEC61131-3 Structured text 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.

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	250 kSteps	448 kWords	20 ns	40	62 mm	990 mA		CJ1H-CPU67H
2,560	120 kSteps	256 kWords	20 ns	40	62 mm	990 mA		CJ1H-CPU66H
2,560	60 kSteps	128 kWords	20 ns	40	62 mm	990 mA		CJ1H-CPU65H
1,280	60 kSteps	128 kWords	40 ns	40	69 mm	1,060 mA	Loop control engine (300 blocks)	CJ1G-CPU45P
					62 mm	910 mA		CJ1G-CPU45H
1,280	30 kSteps	64 kWords	40 ns	40	69 mm	1,060 mA	Loop control engine (300 blocks)	CJ1G-CPU44P
					62 mm	910 mA		CJ1G-CPU44H
960	20 kSteps	64 kWords	40 ns	30	69 mm	1,060 mA	Loop control engine (300 blocks)	CJ1G-CPU43P
					62 mm	910 mA		CJ1G-CPU43H
960	10 kSteps	64 kWords	40 ns	30	69 mm	1,060 mA	Loop control engine (50 blocks)	CJ1G-CPU42P
					62 mm	910 mA		CJ1G-CPU42H
640	30 kSteps	32 kWords	100 ns	20	49 mm	640 mA	2 Encoder inputs (100 kHz) 2 Pulse outputs (100 kHz) 4 interrupt / counter inputs	CJ1M-CPU23
320	10 kSteps	32 kWords	100 ns	10	49 mm	640 mA	2 Encoder inputs (100 kHz) 2 Pulse outputs (100 kHz) 4 interrupt / counter inputs	CJ1M-CPU22
160	5 kSteps	32 kWords	100 ns	10	49 mm	640 mA	2 Encoder inputs (100 kHz) 2 Pulse outputs (100 kHz) 4 interrupt / counter inputs	CJ1M-CPU21
640	20 kSteps	32 kWords	100 ns	19	62 mm	950 mA	100 base-Tx Ethernet port	CJ1G-CPU13-ETN
				20	31 mm	580 mA		CJ1G-CPU13
320	10 kSteps	32 kWords	100 ns	9	62 mm	950 mA	100 base-Tx Ethernet port	CJ1G-CPU12-ETN
				10	31 mm	580 mA		CJ1G-CPU12
160	5 kSteps	32 kWords	100 ns	9	62 mm	950 mA	100 base-Tx Ethernet port	CJ1G-CPU11-ETN
				10	31 mm	580 mA		CJ1G-CPU11

Note: - MIL = connector according to MIL-C-83503 (compatible with DIN 41651 / IEC 60603-1).
     - Models with sinking outputs (NPN type) are available as well.

Accessories

	Model
CompactFlash memory card, 30 MB, for all models (not required for operation)	Industrial grade	HMC-EF372
CompactFlash memory card, 64 MB, for all models (not required for operation)	Industrial grade	HMC-EF672
CompactFlash PC-Card adapter		HMC-AP001
I/O terminal block (40 x M3 screw) for CJ1M-CPU2x	MIL (40 pt)	XW2D-40G6
Servo unit terminal block for 1 axis		XW2B-20J6-8A
Servo unit terminal block for 2 axes		XW2B-40J6-9A
Connection cable between I/O terminal block and CJ1M-CPU2x (□□□ = length in cm)	MIL (40 pt)	XW2Z-□□□K
SMARTSTEP cable for CJ1M CPU2x, cable length: 1 m		XW2Z-100J-A26
W-series servo cable for CJ1M CPU2x, cable length: 1 m		XW2Z-100J-A27
CX-One, integrated software for programming and configuration of all OMRON control system components		CX-ONE-AL□□C-E
Connection cable, D-Sub 9-pin PC serial port to PLC peripheral port (length: 2.0 m)		CS1W-CN226
Connection cable, D-Sub 9-pin PC serial port to PLC peripheral port (length: 6.0 m)		CS1W-CN626
USB to serial conversion cable		CS1W-CIF31

CJ1 power supplies, expansions

Modular PLC

Power and flexibility

CJ1 systems can operate on 24 VDC power supply, or on 100 - 240 VAC mains. 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 3 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 5 VDC	Output capacity 24 VDC	Max. output power	Features	Width	Model
21.6 to 26.4 VDC	35 W max.	2.0 A	0.4 A	16.6 W	No galvanic isolation	27 mm	CJ1W-PD022
19.2 to 28.8 VDC	50 W max.	5.0 A	0.8 A	25 W		60 mm	CJ1W-PD025
85 to 264 VAC 47 to 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

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

For full specifications and additional models please refer to the (attached) CD or www.europe.omron.com
Modular PLC - Cat.-No. P04E-EN-03

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CJ1 digital I/O units

8 to 64 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 CJ1 to your needs.

CJ1 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 'flatcable'-connectors. Prefabricated cables and wiring terminals are available for easy interfacing to high-density I/O units.

CE

Ordering information

Type	Points	Type	Rated voltage	Rated current	Width	I/O bus current consumption	Remarks	Connection type[1]	Model
input	8	AC in	240 VAC	7 mA	31 mm	80 mA		M3	CJ1W-IA201
input	8	DC in	24 VDC	10 mA	31 mm	80 mA		M3	CJ1W-ID201
input	16	DC in	24 VDC	7 mA	31 mm	80 mA		M3 Screwless	CJ1W-ID211 CJ1W-ID211(SL)
input	16	DC in	24 VDC	7 mA	31 mm	80 mA	Inputs start interrupt tasks in PLC program	M3	CJ1W-INT01
input	16	DC in	24 VDC	7 mA	31 mm	80 mA	Latches pulses down to 50 ms pulse width	M3	CJ1W-IDP01
input	32	DC in	24 VDC	4.1 mA	20 mm	90 mA		1 x MIL[1] (40 pt)	CJ1W-ID232
input	64	DC in	24 VDC	4.1 mA	31 mm	90 mA		2 x MIL[1] (40 pt)	CJ1W-ID262
output	8	Triac out	250 VAC	0.6 mA	31 mm	220 mA		M3	CJ1W-OA201
output	8	Relay out	250 VAC	2 mA	31 mm	80 mA		M3 Screwless	CJ1W-OC201 CJ1W-OC201(SL)
output	16	Relay out	250 VAC	2 mA	31 mm	110 mA		M3 Screwless	CJ1W-OC211 CJ1W-OC211(SL)
output	8	DC out (source)[2]	24 VDC	2 mA	31 mm	110 mA	With short-circuit protection, alarm	M3	CJ1W-OD202
output	8	DC out (source)[2]	24 VDC	0.5 mA	31 mm	100 mA	With short-circuit protection, alarm	M3	CJ1W-OD204
output	16	DC out (source)[2]	24 VDC	0.5 mA	31 mm	100 mA	With short-circuit protection, alarm	M3 Screwless	CJ1W-OC212 CJ1W-OC212(SL)
output	32	DC out (source)[2]	24 VDC	0.3 mA	20 mm	150 mA	With short-circuit protection, alarm	1 x MIL[1] (40 pt)	CJ1W-OD232
output	64	DC out (source)[2]	24 VDC	0.3 mA	31 mm	170 mA		2 x MIL[1] (40 pt)	CJ1W-OD262
In + out	16+16	DC in/out (source)[2]	24 VDC	0.5 mA	31 mm	130 mA		2 x MIL (20 pt)	CJ1W-OD232
In + out	32+32	DC in/out (sink)	24 VDC	0.3 mA	31 mm	140 mA		2 x MIL[1] (40 pt)	CJ1W-OD263
In + out	32+32	DC in/out (TLL)	5 VDC	35 mA	31 mm	190 mA		2 x MIL[1] (40 pt)	CJ1W-OD563

[1] MIL = connector according to MIL-C-83503 (compatible with DIN 41651 / IEC 60603-1).
[2] Models with sinking outputs (NPN type) are available as well.

Accessories

	Model
Replacement 18-point screwless terminal blocks for I/O Units, pack of 5 pcs.	Screwless	CJ-WM01-18P-5
I/O terminal block (40 x M3 screw) for XW2Z-□□□K	MIL (40pt)	XW2D-40G6
Connection cable between I/O terminal block and I/O unit (□□□ = length in cm)	MIL (40pt)	XW2Z-□□□K

CJ1 analog I/O and control units

From basic analog I/O to advanced temperature control

CJ1 offers a wide choice of analog input units, fit for any application, from low-speed, multi-channel temperature measurement to 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 autotuning functions similar to stand-alone temperature controllers.

Ordering information

Points	Type	Ranges	Resolution	Accuracy [1]	Conversion time	Width	I/O bus current consumption	Remarks	Connection type	Model
4	Analog input	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/8,000	V: 0.2% of PV I: 0.4% of PV	250 µs/point	31 mm	420 mA	Offset / gain adjustment, peak hold, moving average, alarms	M3	CJ1W-AD041-V1
									Screwless	CJ1W-AD041-V1 (SL)
8	Analog input	1 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/8,000	V: 0.2% of PV I: 0.4% of PV	250 µs/point	31 mm	420 mA	Offset / gain adjustment, peak hold, moving average, alarms	M3	CJ1W-AD081-V1
									Screwless	CJ1W-AD081-V1 (SL)
2	Analog output	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/4,000	V: 0.3% of PV I: 0.5% of PV	1 ms/point	31 mm	120 mA	Offset / gain adjustment, output hold	M3	CJ1W-DA021
									Screwless	CJ1W-DA021 (SL)
4	Analog output	1 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/4,000	V: 0.3% of PV I: 0.5% of PV	1 ms/point	31 mm	120 mA	Offset / gain adjustment, output hold	M3	CJ1W-DA041
									Screwless	CJ1W-DA041 (SL)
8	Voltage output	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V	1/8,000	0.3% of PV	250 µs/point	31 mm	140 mA	Offset / gain adjustment, output hold	M3	CJ1W-DA08V
									Screwless	CJ1W-DA08V (SL)
8	Current output	4 to 20 mA	1/8,000	0.5% of PV	250 µs/point	31 mm	140 mA	Offset / gain adjustment, output hold	M3	CJ1W-DA08C
									Screwless	CJ1W-DA08C (SL)
4 + 2	Analog in + output	1 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/8,000	in: 0.2% of PV out: 0.3% of PV	1 ms/point	31 mm	580 mA	Offset / gain adjustment, scaling, peak hold, moving average, alarms, output hold	M3	CJ1W-MAD042
									Screwless	CJ1W-MAD042 (SL)
2	Process input	4 to 20 mA, 0 to 20 mA, 0 to 10 V, -10 to 10 V, 0 to 5 V, -5 to 5 V, 1 to 5 V, 0 to 1.25 V, 1.25 to 1.25 V	1/64,000	0.05% of PV	5 ms/point	31 mm	180 mA	Configurable alarms, maintenance functions, user-defined scaling	M3	CJ1W-PDC15

For full specifications and additional models please refer to the (attached) CD or www.europe.omron.com

CJ1 analog I/O and control units

Modular PLC

Points	Type	Ranges	Resolution	Accuracy [1]	Conversion time	Width	I/O bus current consumption	Remarks	Connection type	Model
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% of PV	5 ms/point	31 mm	180 mA	Configurable alarms, maintenance functions	M3	CJ1W-PTS15
2	Resistance thermometer input	Pt50, Pt100, JPt100, Ni508.4	1 / 64,000	0.05% of PV	5 ms/point	31 mm	180 mA	Configurable alarms, maintenance functions	M3	CJ1W-PTS16
4	Thermocouple Input	B, J, K, L, R, S, T	0.1 °C	0.3% of PV	62.5 ms/point	31 mm	250 mA	4 configurable alarm outputs	M3	CJ1W-PTS51
4	Resistance thermometer input	Pt100, JPt100	0.1 °C	0.3% of PV	62.5 ms/point	31 mm	250 mA	4 configurable alarm outputs	M3	CJ1W-PTS52
6	Thermocouple input	K-type (-200 to 1,300 °C) J-Type (-100 to 850 °C)	0.1 °C	0.5% of PV	40 ms/point	31 mm	220 mA	Basic I/O Unit, setup by DIPswitches, adjustable filtering 10/50/60 Hz	M3 / Screwless	CJ1W-TS561 / CJ1W-TS561 (SL)
6	Resistance thermometer input	Pt100 (-200 to 650 °C) Pt1000 (-200 to 650 °C)	0.1 °C	0.5% of PV	40 ms/point	31 mm	250 mA	Basic I/O Unit, setup by DIPswitches, adjustable filtering 10/50/60 Hz	M3 / Screwless	CJ1W-TS562 / CJ1W-TS562 (SL)
4	Temperature control loops, Thermocouple	B, J, K, L, R, S, T	0.1 °C	0.3% of PV	500 ms total	31 mm	250 mA	4 control outputs: PNP open collector[2], 100 mA max.	M3	CJ1W-TC002
2	Temperature control loops, Thermocouple	B, J, K, L, R, S, T	0.1 °C	0.3% of PV	500 ms total	31 mm	250 mA	2 control outputs: PNP open collector[2], 100 mA max., 2 current transformer inputs for heater burnout detection.	M3	CJ1W-TC004
4	Temperature control loops, RTD	Pt100, JPt100	0.1 °C	0.3% of PV	500 ms total	31 mm	250 mA	4 control outputs: PNP open collector[2], 100 mA max.	M3	CJ1W-TC102
2	Temperature control loops, RTD	Pt100, JPt100	0.1 °C	0.3% of PV	500 ms total	31 mm	250 mA	2 control outputs: PNP open collector[2], 100 mA max., 2 current transformer inputs for heater burnout detection.	M3	CJ1W-TC104

[1] Typical value at 25 °C ambient temperature. Consult the operation manual for details.

[2] NPN open collector outputs are available as well.

Note: all Analog I/O units are designated as special I/O Units, except TS561/TS562, which are basic I/O units

Accessories

	Connection type	Model
Replacement 18-point screwless terminal blocks for I/O units, pack of 5 pcs.	Screwless	CJ-WM01-18P-5

OMRON

CJ1 position control units

Add motion control to any CJ1 PLC

From simple position measurement to multi-axis synchronised motion control, CJ1 offers a full range of units:

- Counter Units gather position information from SSI- or incremental encoders. Actual positions are compared with internally stored target values.
- Position Control Units are used for point-to-point positioning with servo drives or stepper motors. Target data and accelleration/ deceleration curves can be adjusted on-the-fly.
- Position- and Motion Control Units equipped with MECHATROLINK-II interface can control multiple drives through a single high-speed link. Message routing through mutliple communication layers allows the attached drives to be configured from any point in the control network.

Ordering information

Channels /Axes	Type	Signal type	Unit class	Width	I/O bus current consumption	Remarks	Connection type	Model
2	SSI inputs (absolute position data)	Synchronous serial protocol	Special I/O Unit	31 mm	300 mA	Baud rate, encoding type, data length, etc. can be set per channel	M3 screw	CJ1W-CTS21-E
2	500 kHz Counter	24 V, line driver	Special I/O Unit	31 mm	280 mA	2 configurable digital inputs + outputs	1 x Fujitsu (40 pt)	CJ1W-CT021
4	100 kHz Counter	Line driver, 24 V via terminal block	Special I/O Unit	31 mm	320 mA	Target values trigger interrupt to CPU	1 x MIL (40 pt)	CJ1W-CTL41-E
1	Position Control Unit	24 V open collector	Special I/O Unit	31 mm	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CJ1W-NC113
2	Position Control Unit	24 V open collector	Special I/O Unit	31 mm	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CJ1W-NC213
4	Position Control Unit	24 V open collector	Special I/O Unit	31 mm	360 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CJ1W-NC413
1	Position Control Unit	Line driver	Special I/O Unit	31 mm	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CJ1W-NC133
2	Position Control Unit	Line driver	Special I/O Unit	31 mm	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CJ1W-NC233
4	Position Control Unit	Line driver	Special I/O Unit	31 mm	360 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CJ1W-NC433
16	Position Control Unit	MECHA-TROLINK-II	CPU bus Unit	31 mm	360 mA	Position, speed and torque control. Access to all drive parameters	ML-II	CJ1W-NCF71
32	Motion Control Unit	MECHA-TROLINK-II	CPU bus Unit	80 mm	600 mA	Electronic CAM profiles and axis synchronisation. Registration inputs. Access to all drive parameters.	ML-II	CJ1W-MCH71

Accessories

Description	Connection type	Model
General purpose I/O terminal block (40 x M3 screw)	MIL (40 pt)	XW2D-40G6
Screwless terminal block for connecting 24 V or Line driver encoders to CJ1W-CTL41-E	MIL (40 pt.) to 32 pt. screwless clamp	XW2G-40G7-E
Servo interface block for 2- or 4-Axis position control unit (without communications support)		XW2B-40J6-2B
Servo interface block for 2- or 4-Axis position control unit (with communications support)		XW2B-40J6-4B
General purpose I/O connection cable for I/O units with 40-pt. Fujitsu connector (□□□ = length in cm)	Fujitsu (40 pt.) to MIL (40 pt.)	XW2Z-□□□B
General purpose I/O connection cable for I/O Units with 40-pt. MIL connector (□□□ = length in cm)	2 x MIL (40 pt)	XW2Z-□□□K
Cable connecting CJ1W-NC113 to W Series, cable length: 1.0 m		XW2Z-100J-A14
Cable connecting CJ1W-NC213/413 to W series, cable length: 1.0 m		XW2Z-100J-A15
Cable connecting CJ1W-NC113 to SmartStep, cable length: 1.0 m		XW2Z-100J-A16
Cable connecting CJ1W-NC213/413 to SmartStep, cable length: 1.0 m		XW2Z-100J-A17
Cable connecting CJ1W-NC133 to W series, cable length: 1.0 m		XW2Z-100J-A18
Cable connecting CJ1W-NC233/433 to W series, cable length: 1.0 m		XW2Z-100J-A19
Cable connecting CJ1W-NC133 to SmartStep, cable length: 1.0 m		XW2Z-100J-A20
Cable connecting CJ1W-NC233/433 to SmartStep, cable length: 1.0 m		XW2Z-100J-A21

CJ1 communication units

Open to any communication

CJ1 provides both standardised open networks 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.

OMRON supports the 2 major field networks, DeviceNet and PROFIBUS-DP. For high-speed field I/O, OMRON's own CompoBus/S offers an unsurpassed ease of installation. Fully user-configurable serial and CAN-based communication can be used to emulate a variety of application-specific protocols.

Ordering information

Type	Ports	Protocols	Unit class	Width	I/O bus current consumption	Connection type	Model
Serial	2 x RS-232C	CompoWay-F, Host link, NT link, Modbus, User-defined	CPU bus Unit	31 mm	280 mA	9-pin D-Sub	CJ1W-SCU21-V1
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	380 mA	9-pin D-Sub	CJ1W-SCU41-V1
Ethernet	1 x 100 Base-Tx	UDP, TCP/IP, FTP server, SMTP (e-mail), SNTP (time adjust), FINS routing	CPU bus Unit	31 mm	380 mA	RJ45	CJ1W-ETN21
Controller link	2-wire twisted pair	OMRON proprietary	CPU bus Unit	31 mm	350 mA	2-wire screw + GND	CJ1W-CLK21
DeviceNet	1 x CAN	DeviceNet	CPU bus Unit	31 mm	330 mA	5-p detachable	CJ1W-DRM21
PROFIBUS-DP	1 x RS-485 (Master)	DP, DPV1	CPU bus Unit	31 mm	400 mA	9-pin D-Sub	CJ1W-PRM21
PROFIBUS-DP	1 x RS-485 (Slave)	DP	Special I/O Unit	31 mm	400 mA	9-pin D-Sub	CJ1W-PRT21
CAN	1 x CAN	User-defined	CPU bus Unit	31 mm	330 mA	5-p detachable	CJ1W-CORT21
CompoBus/S	2-wire (Master)	OMRON proprietary	Special I/O Unit	20 mm	150 mA	2-wire screw + 2-wire power	CJ1W-SRM21

Accessories

Description	Connection type	Model
RS-232C to RS-422/RS-485 signal converter. Mounts directly on serial port.	9-pin D-sub to screw clamp terminals	CJ1W-CIF11
Controller link PCI board with support software	PCI, wired CLK	3G8F7-CLK21-EV1
Controller link repeater unit (wire to wire)	Screw - Screw	CS1W-RPT01
Controller link repeater unit (wire to HPCF fiber)	Screw - HPCF connector	CS1W-RPT02
Controller link repeater unit (wire to graded-index glass fiber)	Screw - ST connector	CS1W-RPT03

CS1 CPU units

Fast and powerful CPUs for any task

OMRON's CS1-series CPUs are available in two processor speeds, each in various memory capacities. Besides the basic CPU models, versions are available for dual-redundant operation, supporting I/O hot-swapping. All CPUs have one dedicated board slot with a direct CPU-bus connection, in which a serial communication board or a loop control board can be mounted. All CPU units support IEC61131-3 structured text 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.

Ordering information

Max. Digital I/O points	Program capacity	Data memory capacity	Logic execution speed	Max. I/O Units	I/O bus current consumption (5 V)	Additional functions	Model
5120	250 kSteps	448 kWords	20 ns	80	820 mA		CS1H-CPU67H
				71		Supports duplex power supply and I/O hot-swapping	CS1D-CPU67S
				68		CPU for full dual-redundancy	CS1D-CPU67H
					1,040 mA	CPU for full dual-redundancy, with loop control board	CS1D-CPU67P
	120 kSteps	256 kWords		80	820 mA		CS1H-CPU66H
	60 kSteps	128 kWords		80			CS1H-CPU65H
				71		Supports duplex power supply and I/O hot-swapping	CS1D-CPU65S
				68		CPU for full dual-redundancy	CS1D-CPU65H
					1,040 mA	CPU for full dual-redundancy, with loop control board	CS1D-CPU65P
	30 kSteps	64 kWords		80	820 mA		CS1H-CPU64H
	20 kSteps						CS1H-CPU63H
	60 kSteps		40 ns		780 mA		CS1G-CPU45H
1280	30 kSteps			40			CS1G-CPU44H
				35		Supports duplex power supply and I/O hot-swapping	CS1D-CPU44S
960	20 kSteps			30			CS1G-CPU43H
	10 kSteps						CS1G-CPU42H
				26		Supports duplex power supply and I/O hot-swapping	CS1D-CPU42S

Accessories

Description	I/O bus current consumption (5V)	Data memory capacity
Duplex Unit, required for CS1D-CPU6☐H systems	See CS1D-BC052 backplane	CS1D-DPL01
Serial communication option board, 2 x RS-232C	280 mA	CS1W-SCB21-V1
Serial communication option board, 1 x RS-232C + 1 x RS422/RS-485	360 mA	CS1W-SCB41-V1
Loop control option board, 50 control blocks max.	220 mA	CS1W-LCB01
Loop control option board, 300 control blocks max.	220 mA	CS1W-LCB05
Replacement battery set, for all CS1 CPUs		CS1W-BAT01
Industrial grade CompactFlash memory card, 30 MB, for all models (not required for operation)		HMC-EF372
Industrial grade CompactFlash memory card, 64 MB, for all models (not required for operation)		HMC-EF672
CompactFlash PC-Card adapter		HMC-AP001
CX-One, integrated software for programming and configuration of all OMRON control system components		CX-ONE-AL☐☐C-E
Connection cable, D-Sub 9-pin PC serial port to PLC peripheral port (length: 2.0 m)		CS1W-CN226
Connection cable, D-Sub 9-pin PC serial port to PLC peripheral port (length: 6.0 m)		CS1W-CN626
USB to serial conversion cable		CS1W-CIF31

CS1 power supplies, backplanes
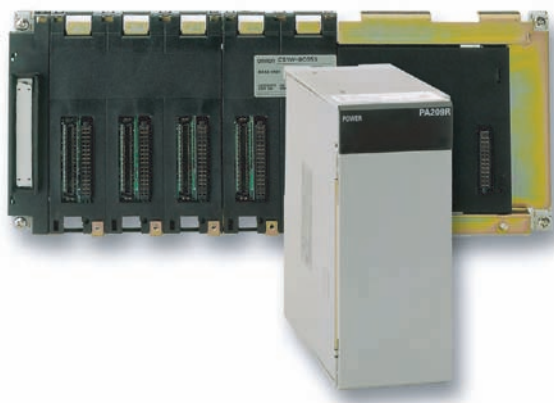
Expand with up to 7 racks

CS1 systems can operate on 24 VDC power supply, or on 100-240 VAC mains. 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.

PLC racks are available in several sizes, from 2 to 10 slots wide. Special backplanes are required for duplex systems. Depending on the CPU type, up to 7 expansions can be connected to the CPU rack, giving a total capacity of 80 I/O units. The total length of the expansion cables of one system may be up to 12 m.

Ordering information

Power supplies

Input range	Power consumption	Output capacity 5 VDC	Output capacity 26 VDC	Max. output Power	Extra functions	Model
19.2 to 28.8 V DC	40 W max.	6.6 A	0.62 A	30 W	n.a.	C200HW-PD024
		4.3 A	0.56 A	28 W	Power supply for dual-redundant system	CS1D-PD024
	55 VA max.	5.3 A	1.3 A	40 W	n.a.	C200HW-PD025
					Power supply for dual-redundant system	CD1D-PD025
85 to 264 V AC 50/60 Hz	120 VA max.	4.6 A	0.62 A	30 W	Maintenance status display	C200HW-PA204C
85 to 132 V AC, 170 to 264 V AC, 50/60 Hz					n.a.	C200HW-PA204
					Service output 24 V DC, 0.8 A	C200HW-PA204S
					Run status output (SPST relay)	C200HW-PA204R
	180 VA max.	9.0 A	1.3 A	45 W	Run status output (SPST relay)	C200HW-PA209R
	150 VA max.	7.0 A	1.3 A	35 W	Power supply for dual-redundant system	CS1D-PA207R

Specifications

Type	Slots	5 V current consumption	Expansion connector	Width	Special functions	Model
CPU backplane	2	110 mA	No	200 mm		CS1W-BC023
CPU backplane	3	110 mA	Yes	260 mm		CS1W-BC033
CPU backplane	5	110 mA	Yes	330 mm		CS1W-BC053
CPU backplane	8	110 mA	Yes	435 mm		CS1W-BC083
CPU backplane	10	110 mA	Yes	505 mm		CS1W-BC103
Expansion backplane	3	230 mA	Yes	260 mm		CS1W-BI033
Expansion backplane	5	230 mA	Yes	330 mm		CS1W-BI053
Expansion backplane	8	230 mA	Yes	435 mm		CS1W-BI083
Expansion backplane	10	230 mA	Yes	505 mm		CS1W-BI103
CPU backplane	5	550 mA (including CS1D-DPL01)	Yes	505 mm	For Duplex CPU + Power supplies	CS1D-BC052
CPU backplane	8	170 mA	Yes	505 mm	For Duplex Power supplies	CS1D-BC082S
Expansion backplane	9	280 mA	Yes	505 mm	For Duplex Power supplies	CS1D-BI092

Type	Description		Length	Model
I/O Expansion cable	Connects CS1 CPU backplane or Expansion backplane to next Expansion backplane.		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
			10.0 m	CS1W-CN133
			12.0 m	CS1W-CN133-B2

CS1 digital I/O units

Up to 96 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 CS1 to your needs.

CS1 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 directly. High-density 32- and 64- point I/O units are equipped with standard 40-pin 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	I/O bus current consumption (5V)	I/O bus current consumption (26V)	Remarks	Connection type	Model [1]
16	AC input	240 VAC	10 mA	100 mA			M3	CS1W-IA211
16	DC input	24 VDC	7 mA	100 mA			M3	CS1W-ID211
16	DC input	24 VDC	7 mA	100 mA		Inputs start interrupt tasks in PLC program	M3	CS1W-INT01
16	DC input	24 VDC	7 mA	100 mA		Latches pulses down to 50 µs pulse width	M3	CS1W-IDP01
32	DC input	24 VDC	6 mA	150 mA			1 x 40 pt Fujitsu	CS1W-ID231
64	DC input	24 VDC	6 mA	150 mA			2 x 40 pt Fujitsu	CS1W-ID261
96	DC input	24 VDC	5 mA	200 mA			2 x 56 pt Fujitsu	CS1W-ID291
8	Triac output	250 VAC	1.2 A	max. 230 mA			M3	CS1W-OA201
16	Triac output	250 VAC	0.5 A	max. 200 mA			M3	CS1W-OA211
8	Relay output	250 VAC	2.0 A	100 mA	max. 48 mA		M3	CS1W-OC201
16	Relay output	250 VAC	2.0 A	130 mA	max. 96 mA		M3	CS1W-OC211
16	DC output (source)[2]	24 VDC	0.5 A	170 mA		With short-circuit protection, alarm	M3	CS1W-OD212
32	DC output (source)[2]	24 VDC	0.5 A	270 mA		With short-circuit protection, alarm	1 x 40 pt Fujitsu	CS1W-OD232
64	DC output (source)[2]	24 VDC	0.3 A	390 mA		With short-circuit protection, alarm	2 x 40 pt Fujitsu	CS1W-OD262
96	DC output (source)[2]	24 VDC	0.1 A	480 mA			2 x 56 pt Fujitsu	CS1W-OD292
16+16	DC in+out (TTL)	5 VDC	35 mA	270 mA			2 x 40 pt Fujitsu	CS1W-MD561
32+32	DC in+out (source)[2]	24 VDC	0.3 A	270 mA		With short-circuit protection, alarm	2 x 40 pt Fujitsu	CS1W-MD262
48+48	DC in+out (source)[2]	24 VDC	0.1 A	350 mA			2 x 56 pt Fujitsu	CS1W-MD292

[1] C200H I/O units can also be mounted, except on CS1D systems.
[2] Models with sinking outputs (NPN type) are available as well.

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

CS1 analog and process I/O units

Rack PLC

From basic analog I/O to process control

CS1 offers a wide choice of analog input units, fit for any application, from low-speed, multi-channel temperature measurement to 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. All process and temperature I/O units provide isolation between all individual channels.

Ordering information

Points	Type	Ranges	Reso-lution	Accuracy[1]		Conversion time	I/O bus current consumption (5 V)	I/O bus current consumption (26 V)	Remarks	Connection type	Model
4	Analog input	0 to 5 V,	1/8,000	V: 0.2% of PV		250 µs/point	130 mA	90 mA	Offset / gain adjustment, peak hold, moving average, alarms	M3	CS1W-AD041-V1
8	Analog input	0 to 10 V,		I: 0.4% of PV						M3	CS1W-AD081-V1
18	Analog input	-10 to 10 V, 1 to 5 V, 4 to 20 mA		0.2% of PV			150 mA	60 mA		2 x MIL (34p.)	CS1W-AD161
4	Analog output	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V, 4 to 20 mA	1/4,000	V: 0.3% of PV I: 0.5% of PV		1 ms/point	130 mA	180 mA	Offset / gain adjustment	M3	CS1W-DA041
8	Voltage output	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V		0.3% of PV				180 mA	Offset / gain adjustment, output hold	M3	CS1W-DA08V
8	Current output	4 to 20 mA		0.5% of PV				250 mA		M3	CS1W-DA08C
4 + 4	Analog in + output	0 to 5 V, 0 to 10 V, -10 to 10 V, 1 to 5 V (4 to 20 mA input)	1/8,000	V in: 0.2% of PV I in: 0.4% of PV out: 0.3% of PV		1 ms/point	200 mA	200 mA	Offset / gain adjustment, scaling, peak hold, moving average, alarms, output hold	M3	CS1W-MAD44
4	Process input	4 to 20 mA, 0 to 20 mA, 0 to 10 V, -10 to 10 V, 0 to 5 V, -5 to 5 V, 1 to 5 V, 1 to 1.25 V, -1.25 to 1.25 V	1/64,000	0.05% of PV		5 ms/point	120 mA	120 mA	Configurable alarms, maintenance functions, user-defined scaling, zero / span adjustment, square root, totaliser.	M3	CS1W-PDC11
8	Process input	-10 to 10 V, 0 to 5 V, 1 to 5 V, 4 to 20 mA	1/16,000	0.3% of PV		62.5 ms/point	180 mA	60 mA	Configurable alarms, zero / span adjustment, square root	M3	CS1W-PDC55
4	Thermocouple input	B, E, J, K, L, N, R, S, T, U, WRe5-26, PLII, -100 to 100 mV	1/64,000	0.05% of PV		5 ms/point	120 mA	80 mA	Configurable alarms (absolute + rate-of-change), peak hold, maintenance functions	M3	CS1W-PTS11
4	Resistance thermometer input	Pt50, Pt100 JPt100, Ni508.4	1/64,000	0.05% of PV		5 ms/point	120 mA	70 mA	Configurable alarms (absolute + rate-of-change), peak hold, maintenance functions	M3	CS1W-PTS12
4	Thermocouple input	B, J, K, L, R, S, T	0.1 °C	0.3% of PV		62.5 ms/point	250 mA	---	4 configurable alarm outputs	M3	CS1W-PTS51
4	Resistance thermometer input	Pt100, JPt100	0.1 °C	0.3% of PV		62.5 ms/point	250 mA	---	4 configurable alarm outputs	M3	CS1W-PTS52
8	Thermocouple input	B, J, K, L, R, S, T	0.1 °C	0.3% of PV		31.2 ms/point	180 mA	60 mA	Configurable alarms per channel	M3	CS1W-PTS55
8	Resistance thermometer input	Pt100, JPt100	0.1 °C	0.3% of PV		31.2 ms/point	180 mA	60 mA	Configurable alarms per channel	M3	CS1W-PTS56
4	2-Wire transmitter input	1 to 5 V, 4 to 20 mA	1/4,096	0.2% of FS		25 ms/point	150 mA	160 mA	Built-in power supply for transmitter, configurable alarms, square root, rate-of-change, etc.	M3	CS1W-PTW01

CS1 analog and process I/O units

Points	Type	Ranges	Reso-lution	Accuracy[1]	Conversion time	I/O bus current consump-tion (5 V)	I/O bus current consump-tion (26 V)	Remarks	Connection type	Model
8	Power transducer input	-1 to 1 mA, 0 to 1 mA	1/4,096	0.2% of FS	25 ms/point	150 mA	80 mA	Inrush current limiter, configurable alarms, averaging, etc.	M3	CS1W-PTR01
8	Power transducer input	-100 to 100 mV, 0 to 100 mV	1/4,096	0.2% of FS	25 ms/point	150 mA	80 mA	Inrush current limiter, configurable alarms, averaging, etc.	M3	CS1W-PTR01
4	Pulse rate input	20000 pps, voltage, open collector, contact	up to 1/32,000	n.a.	25 ms/point			Averaging, totaliser	M3	CS1W-PPS01
4	Isolated control output	1 to 5 V, 4 to 20 mA	1/4,000	I: 0.1% of FS V: 0.2% of FS	25 ms/point	150 mA	160 mA	Output readback, high / low / rate limiting, disconnection alarm, zero / span adjustment	M3	CS1W-PMV01
4	Isolated control output	-10 to 10 V, 0 to 10 V, -5 to 5 V, 0 to 5 V, -1 to 1 V, 0 to 1 V	1/4,000	0.1% of FS	10 ms/point	120 mA	120 mA	High / low / rate limiting, output hold, zero / span adjustment	M3	CS1W-PMV02

[1] Typical value at 25 °C ambient temperature. Consult the operation manual for details.

Note: All analog I/O units are designated as special I/O units

CS1 position / motion control units

Add motion control to any CS1 PLC

From simple position measurement to multi-axis synchronised motion control, CS1 offers a full range of units:

- Counter Units gather position information from SSI- or incremental encoders. Actual positions are compared with internally stored target values.
- Position control units are used for point-to-point positioning with servo drives or stepper motors. Target data and acceleration / deceleration curves can be adjusted on-the-fly.
- Position- and motion control units equipped with MECHATROLINK-II interface can control multiple drives through a single high-speed link. Message routing through mutliple communication layers allows the attached drives to be configured from any point in the control network.

Ordering information

Channels/ Axes	Type	Signal type	Unit class	I/O bus current consumption	Remarks	Connection type	Model
2	SSI inputs (absolute position data)	Synchronous serial protocol	Special I/O unit	320 mA	Baud rate, encoding type, data length, etc. can be set per channel 2 digital outputs, NPN/PNP selectable.	M3 screw	CS1W-CTS21
2	500 kHz Counter	24 V, 12V, line driver	Special I/O unit	360 mA	4 configurable digital inputs + 4 configurable digital outputs Target values trigger interrupt to CPU	1 x Fujitsu (40 pt)	CS1W-CT021
4				450 mA		2 x Fujitsu (40 pt)	CS1W-CT041
1	Position control unit	24V open collector	Special I/O unit	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CS1W-NC113
2	Position control unit	24V open collector	Special I/O unit	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CS1W-NC213
4	Position control unit	24V open collector	Special I/O unit	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CS1W-NC413
1	Position control unit	Line driver	Special I/O unit	250 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CS1W-NC133
2	Position control unit	Line driver	Special I/O unit	360 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	1 x Fujitsu (40 pt)	CS1W-NC233
4	Position control unit	Line driver	Special I/O unit	360 mA	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CS1W-NC433
32	Motion control unit	MECHA-TROLINK-II	CPU bus unit	800 mA	Electronic cam profiles and axis synchronisation. Registration inputs. Access to all drive parameters.	ML-II	CS1W-MCH71

Accessories

Description	Connection type	Model
General purpose I/O terminal block (40 x M3 screw)	MIL (40 pt)	XW2D-40G6
General purpose I/O connection cable for I/O Units with 40-pt. Fujitsu connector (□□□ = length in cm)	Fujitsu (40 pt.) to MIL (40 pt.)	XW2Z-□□□B
Servo interface block for 2- or 4-Axis position control unit (without communications support)		XW2B-40J6-2B
Servo interface block for 2- or 4-Axis position control unit (with communications support)		XW2B-40J6-4B
Cable connecting CS1W-NC113 to W Series, cable length: 1.0 m		XW2Z-100J-A14
Cable connecting CS1W-NC213/413 to W Series, cable length: 1.0 m		XW2Z-100J-A15
Cable connecting CS1W-NC113 to SmartStep, cable length: 1.0 m		XW2Z-100J-A16
Cable connecting CS1W-NC213/413 to SmartStep, cable length: 1.0 m		XW2Z-100J-A17
Cable connecting CS1W-NC133 to W Series, cable length: 1.0 m		XW2Z-100J-A18
Cable connecting CS1W-NC233/433 to W series, cable length: 1.0 m		XW2Z-100J-A19
Cable connecting CS1W-NC133 to SmartStep, cable length: 1.0 m		XW2Z-100J-A20
Cable connecting CS1W-NC233/433 to SmartStep, cable length: 1.0 m		XW2Z-100J-A21

CS1 communication units

Open to any communication, standard or user-defined

CS1 provides both standardised open networks 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.

OMRON supports the 2 major field networks, DeviceNet and PROFIBUS-DP. For high-speed field I/O, OMRON's own CompoBus/S offers an unsurpassed ease of installation. Fully user-configurable serial and CAN-based communication can be used to emulate a variety of application-specific protocols.

Ordering information

Type	Ports	Protocols	Unit class	I/O bus current consumption	Remarks	Connection type	Model
Serial	2 x RS-232C	CompoWay-F, Host Link, NT link, Modbus, User-defined	CPU bus unit	290 mA		9-pin D-Sub	CS1W-SCU21-V1
Serial	2 x RS-232C	CompoWay-F, Host Link, NT link, Modbus, User-defined	CPU option board	280 mA		9-pin D-Sub	CS1W-SCB21-V1
Serial	1 x RS-232C + 1 x RS-422/RS-485	CompoWay-F, Host Link, NT link, Modbus, User-defined	CPU option board	360 mA		9-pin D-Sub	CS1W-SCB41-V1
GP-IB	Master / Slave selectable	GP-IB instrument communication	Special I/O unit	260 mA		GP-IB	CS1W-GPI01
Ethernet	1 x 100 Base-Tx	UDP, TCP/IP, FTP server, SMTP (e-mail), SNTP (time adjust), FINS routing	CPU bus unit	400 mA		RJ45	CS1W-ETN21
Controller link	2-wire twisted pair	OMRON proprietary	CPU bus unit	330 mA		2-wire screw + GND	CS1W-CLK21
	Optical HPCF			520 mA		2 x HPCF connector	CS1W-CLK12
	Optical graded-index fiber			650 mA		4 x ST connector	CS1W-CLK52
DeviceNet	1 x CAN	DeviceNet	CPU bus unit	290 mA		5-p detachable	CS1W-DRM21
PROFIBUS-DP	1 x RS-485 (Master)	DP, DPV1	CPU bus unit	400 mA		9-pin D-Sub	CS1W-PRM21
PROFIBUS-DP	1 x RS-485 (Slave)	DP	C200H special I/O unit	250 mA	C200H units cannot be used on CS1D systems	9-pin D-Sub	C200HW-PRT21
CAN	1 x CAN	CANopen, User-defined	C200H special I/O unit	250 mA		5-p detachable	C200HW-CORT21-V1
CompoBus/S	2-wire (Master)	OMRON proprietary	C200H special I/O unit	150 mA		2-wire screw + 2-wire power	C200HW-SRM21-V1

Accessories

Description	Connection type	Model
RS-232C to RS-422/RS-485 signal converter. Mounts directly on serial port.	9-pin D-sub to screw clamp terminals	CJ1W-CIF11
Controller link PCI board with support software	PCI, wired CLK	3G8F7-CLK21-EV1
Controller link PCI board with support software	PCI, HPCF connectors	3G8F7-CLK12-EV1
Controller link PCI board with support software	PCI, ST connectors	3G8F7-CLK52-EV1
Controller link repeater unit (wire to wire)	Screw - Screw	CS1W-RPT01
Controller link repeater unit (wire to HPCF fiber)	Screw - HPCF connector	CS1W-RPT02
Controller link repeater unit (wire to graded-index glass fiber)	Screw - ST connector	CS1W-RPT03

Remote I/O

Smart functions you can rely on

SmartSlice: Intelligence at I/O level

In automated production, high availability is absolutely critical to stay efficient. Smart control systems that can help your process stay up are always a worthwhile investment. The latest innovation from Omron is SmartSlice. This modular, remote I/O system is full of patented, smart features – making it the most intelligent and easy-to-use remote I/O system currently available. SmartSlice will allow you to minimise engineering, troubleshooting and maintenance in your machine, line or plant, resulting in significantly reduced downtime.

Maintenance data logging minimises downtime

All SmartSlice I/O units autonomously collect and store the information that will help you plan machine maintenance. Timely detection of reduced performance will minimise unplanned downtime and keep machine performance fast and reliable.

Each unit remembers its last maintenance date: maintenance personnel can check per unit if there have been any replacements or repairs. A descriptive comment can be entered per node, per unit, even per I/O point. This can help you troubleshoot a machine without having to know PLC-internal tag names or programs. All communication that is required passes through multiple network layers without any special PLC programming to gather or store the data.

Early-warning system prevents breakdowns

Every SmartSlice unit has its own built-in early-warning functions, enabling you to schedule maintenance and prevent breakdowns. Warnings include:

• Supply voltage out of safe range – e.g. due to damaged cable or poor connection.

• Preset maintenance interval exceeded – which can be a time interval or a target number of operations, to indicate that an inspection of (electro-)mechanical parts is required.

• Maximum allowed delay between two I/O signals is exceeded – to indicate that wear or lack of lubrication is causing a machine to work slower than intended.

Smart design for all-round benefits

These warnings would be useless if you cannot easily find the underlying cause. Therefore, there are several convenient ways to access the information, with little or no PLC programming:

- Directly from the network maintenance view of CX-One
- By using Smart Active Parts on the NS-series HMIs
- By using predefined Function Blocks in the PLC

Highly compact

More compact than any other modular I/O system – with a height of only 80 mm – SmartSlice takes up very little space in your control cabinet. With a 3-wire input connection there is no need for additional power distribution rails; all your field wiring, including sensor power supply, can be directly connected to the units.

Reliable 3-piece construction

All SmartSlice modules have a 3-piece construction. Interlocking bus blocks build the backplane of the system. The electronics module and removable terminal block plug into the backplane, enabling you to:

- Replace electronic modules while the bus structure and field wiring stay intact. During hot-swapping, all other I/O units continue to operate.
- Detach I/O terminals for pre-wiring, maintenance or testing.

All contact surfaces between the electronics module and connectors are gold-plated for 100% reliable connections.

Fast backup and restore

With all the intelligence and advanced functions in SmartSlice units, backup and recovery of settings are important to support fast maintenance and repair of your machine. These functions are therefore also toolless in SmartSlice. All I/O unit data can be backed up in the bus interface unit at the flick of a switch. Recovery is even simpler; after hot-swapping a unit, all settings are automatically loaded.
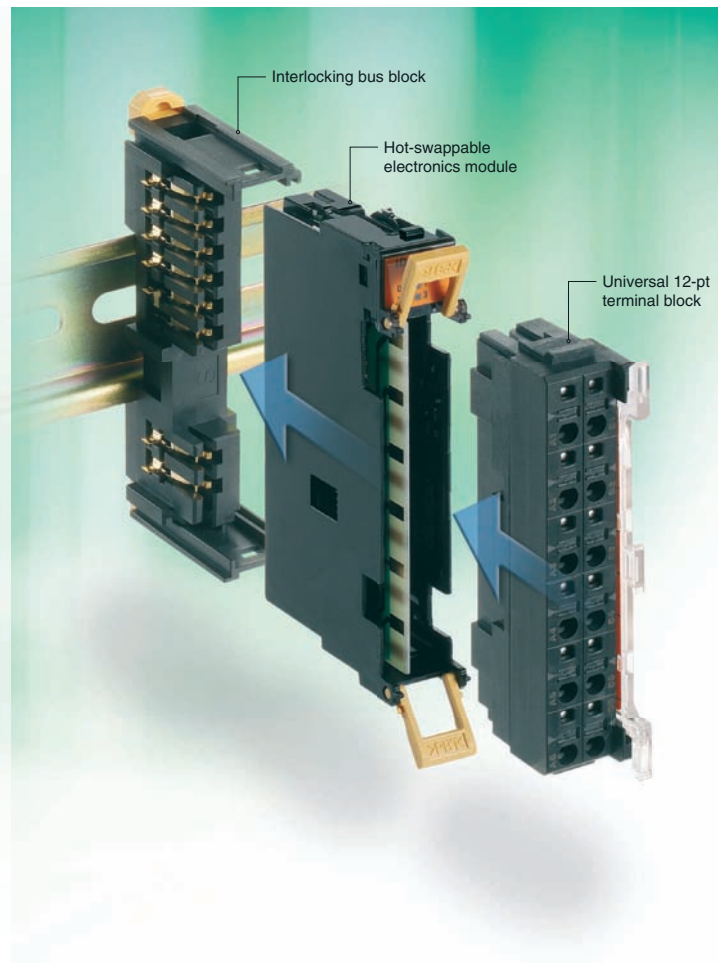
Interlocking bus block
Hot-swappable electronics module
Universal 12-pt terminal block

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SmartSlice I/O system

The smartest modular I/O system

OMRON's new SmartSlice I/O system is compact, intelligent and easy. When used with OMRON's CS1/CJ1 DeviceNet master units, no configuration tool is required. By using built-in functions such as pre-scaling, totalising, differentiation and alarming in analog I/O units, PLC programming can be minimised. Preventive maintenance data can be accessed using CX-Integrator software, standard PLC function blocks or NS-series Smart Active Parts.

- Most compact in the market (80 mm high)
- Easy set-up, backup and restore functions
- Diagnostics and preventive maintenance data at I/O level
- Detachable terminal blocks allow hot-swapping without re-wiring
- 3-wire connection with 'push-in' technology, no screwdriver required

Ordering information

Model	Specifications	Width		Connection type	Model
DeviceNet interface unit	Supports up to 64 I/O units. Integrated I/O power supply terminals.	58	mm	Open-style DeviceNet connector.	GRT1-DRT
PROFIBUS-DP interface unit	Supports up to 64 I/O units. Integrated I/O power supply terminals.	58	mm	9-pin D-sub PROFIBUS-DP connector.	GRT1-PRT [*1]
4-point NPN input unit	24 V DC, 7 mA, 3-wire connection (NPN-type signal)	15	mm	Push-in screwless	GRT1-ID4 [*1]
4-point PNP input unit	24 V DC, 7 mA, 3-wire connection (PNP-type signal)	15	mm	Push-in screwless	GRT1-ID4-1
4-point NPN output unit	24 V DC, 500 mA, 2-wire connection, sinking outputs (NPN-type)	15	mm	Push-in screwless	GRT1-OD4
4-point PNP output unit	24 V DC, 500 mA, 2-wire connection, sourcing outputs (PNP-type)	15	mm	Push-in screwless	GRT1-OD4-1
2-point Relay output unit	240 V AC, 2A, normally-open contacts	15	mm	Push-in screwless	GRT1-ROS2
1-Channel 100 kHz counter unit	A/B/Z encoder input (line driver or 24 V selectable) 1 control input + 2 outputs (NPN-type)	15	mm	Push-in screwless	GRT1-CT1 [*1]
1-Channel 100 kHz counter unit	A/B/Z encoder input (line driver or 24 V selectable) 1 control input + 2 outputs (PNP-type)	15	mm	Push-in screwless	GRT1-CT1-1 [*1]
2-Channel thermocouple input unit	Type B, E, J, K, L, R, S, T, U, W, PLII selectable ±0.3% of PV, or ±0.8 °C 250 ms conversion time	15	mm	Push-in screwless	GRT1-TS2T [*1]
2-Channel Pt100 input unit	Pt100 / JPt100 selectable ±0.3% of PV, or ±1.0 °C 250 ms conversion time	15	mm	Push-in screwless	GRT1-TS2P [*1]
2-Channel analog input unit, current / voltage	±10 V, 0 - 10 V, 0 - 5 V, 1 - 5 V, 0 - 20 mA, 4 - 20 mA	15	mm	Push-in screwless	GRT1-AD2 [*1]
2-Channel analog output unit, voltage	±10 V, 0 - 10 V, 0 - 5 V, 1 - 5 V 1/6000 resolution, 2 ms conversion time	15	mm	Push-in screwless	GRT1-DA2V [*1]
2-Channel analog output unit, current	0-20 mA, 4-20 mA 1/6000 resolution, 2 ms conversion time	15	mm	Push-in screwless	GRT1-DA2C [*1]
I/O power feed unit, separates power supply between groups of I/O units		15	mm	Push-in screwless	GRT1-PD2
End plate, one unit required per bus interface		19.5	mm		GRT1-END
Turnback unit, right-hand side		19.5	mm		GRT1-TBR
Turnback unit, left-hand side		58	mm		GRT1-TBL
Turnback cable, max. 2 per station		1	mm		GCN1-100

[*1]   Available Q2 2006. Specifications may change.

Software

CX-One, OMRON's integrated software for programming and configuration of all control system components, including PLCs, remote I/O, HMI, drives, temperature controllers and advanced sensors.	CX-ONE-AL□□C-E

Compact I/O DRT2
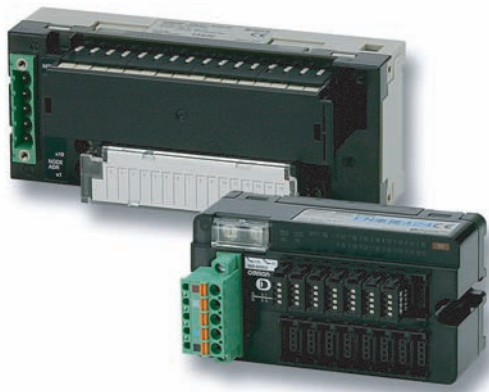
Smart DeviceNet I/O

These units feature internal diagnostic and data collection over the network. Power supply status, I/O response times, operation counters and on-time monitor data are continuously recorded and checked against user-defined limits. Hence any deviation is immediately flagged. Smart DeviceNet I/Os are supported by Smart Active Parts, allowing programless visualisation and monitoring from the NS terminals.

- Compact size IP20 housing
- Expandable digital I/Os
- Built-in diagnostics and preventive maintenance functions
- Detachable I/O terminal blocks
- Analog I/O with data pre-processing and alarm functions

Ordering information

I/O points	Size in mm (HxWxD)	Current	Name	Remarks	Model
16 input points (PNP)	115x50x49.7	Input current 6.0 mA max./ point (for 24 V DC)	Remote I/O terminals with transistors	Can be extended with XWT expansion unit.	DRT2-ID16-1
16 output points (PNP)	115x50x49.7	Output current 0.5 A/point, 4.0 A/common	Remote I/O terminals with transistors	Can be extended with XWT expansion unit.	DRT2-OD16-1
16 output points	125x50x51.8	Load 2 A, 8A / common	Remote I/O terminal with relay outputs	Relay outputs. Can be extended with XWT expansion unit.	DRT2-ROS16
8 input points (PNP)	66x50x49.7	Input current 6.0 mA max./ point (for 24 V DC)	Remote I/O terminal expansion units with transistors	Expansion unit for increasing inputs of the basic units	XWT-ID08-1
16 input points (PNP)	94x50x49.7	Input current 6.0 mA max./ point (for 24 V DC)	Remote I/O terminal expansion units with transistors	Expansion unit for increasing inputs of the basic units	XWT-ID16-1
8 output points (PNP)	66x50x49.7	Output current 0.5 A/point, 2.0 A/common	Remote I/O terminal expansion units with transistors	Expansion unit for increasing outputs of the basic units	XWT-OD08-1
16 output points (PNP)	94x50x49.7	Output Current 0.5 A/point, 4.0 A/common	Remote I/O terminal expansion units with transistors	Expansion unit for increasing outputs of the basic units	XWT-OD16-1
16 input points (PNP)	180x50x58	Input current 6.0 mA max./ point at 24 V DC	Remote I/O terminals with 3-tier terminal blocks and transistors	Wiring locations easy to find (wiring to the same terminal not required). Cannot be expanded with an XWT expansion unit.	DRT2-ID16TA-1
16 output points (PNP)	180x50x58	Output current 0.5 A/point	Remote I/O terminals with 3-tier terminal blocks and transistors	Wiring locations easy to find (wiring to the same terminal not required). Cannot be expanded with an XWT expansion unit.	DRT2-OD16TA-1
8 input points / 8 output points (PNP)	180x50x58	Input current 6.0 mA max./ point at 24 V DC. Output Current 0.5 A/point	Remote I/O terminals with 3-tier terminal blocks and transistors	Wiring locations easy to find (wiring to the same terminal not required). Cannot be expanded with an XWT expansion unit.	DRT2-MD16TA-1
16 input points (PNP)	95x50x33.3	Input current 11 mA max./ point (for 24 VDC)	Sensor connector terminals with transistors	Uses E-con industry standard sensor connectors.	DRT2-ID16-S
32 input points (PNP)	80x35x60	Input Current 6.0 mA max./ point at 24 V DC.	MIL connector terminals with transistors	Connects to relay terminal using MIL cable	DRT2-ID32ML-1
32 output points (PNP)	80x35x60	Output current 0.3 A/point, 4 A/common.	MIL connector terminals with transistors	Connects to relay terminal using MIL cable	DRT2-OD32ML-1
16 input points / 16 output points (PNP)	80x35x60	Input current 6.0 mA max./ point at 24 V DC. Output current 0.3 A/point, 2 A/common	MIL connector terminals with transistors	Connects to relay terminal using MIL cable	DRT2-MD32ML-1
4 input points (0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA)	115x50x49.7	Current consumption from communications power supply 90 mA max.	Analog input terminals	Resolution 1/6000 (full scale) Conversion cycle depends on number of active points, 4points: 4ms max.	DRT2-AD04
2 output points (0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA)	115x50x49.7	Current consumption from communications power supply 120 mA max.	Analog output terminals	Conversion time 2 ms/2 points	DRT2-DA02

Note: - MIL = connector according to MIL-C-83503 (compatible with DIN 41651 / IEC 60603-1).
- Models with sinking outputs (NPN type) are available as well.

Compact I/O SRT2

Fast and easy over CompoBus/S

OMRON's unique CompoBus/S is the most efficient I/O bus for machine automation. With free topology and up to 500 m bus length in long-distance mode, it can be used as a remote I/O system. In high-speed mode (100 m max.) the guaranteed sub-millisecond cycle time makes it ideal for efficient machine control. Used with the compact CPM2C-S PLC as master, your machine control system will fit in the smallest spaces.

- Compact size in IP20 housing
- Fast cycle time; less than 1 ms per 256 I/O points
- Easy set-up; no software required
- Choice of 4- 8- and 16-point Digital I/O; transistor-, MOSFET- and Relay models
- Analog in- / outputs and customisable modules available

Ordering information

I/O points	Size in mm (HxWxD)	Current	Name	Remarks	Model
4 input points (PNP)	80x48x50	Input current 6 mA max./ point at 24 V DC	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space.	SRT2-ID04-1
8 input points (PNP)	80x48x50	Input current 6 mA max./ point at 24 V DC	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space	SRT2-ID08-1
16 input points (PNP)	105x48x50	Input current 6 mA max./ point at 24 V DC	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space	SRT2-ID16-1
4 output points (PNP)	80x48x50	Output current 0.3 A/point	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space	SRT2-OD04-1
8 output points (PNP)	80x48x50	Output current 0.3 A/point	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space	SRT2-OD08-1
16 output points (PNP)	105x48x50	Output current 0.3 A/point	Remote I/O terminals with transistors	IP20 protection class, very small size to preserve space	SRT2-OD16-1
16 input points (PNP)	180x50x59	Input current 6 mA max. at 24 V DC	Remote I/O terminals with 16 transistor inputs and 3-layer terminal blocks	Easy connection to deliver power to three wire sensors	SRT2-ID16T-1
16 output points (PNP)	180x50x59	Output current 0.5 A/point	Remote I/O terminals with 16 transistor outputs and 3-layer terminal blocks		SRT2-OD16T-1
8 input points / 8 output points (PNP)	180x50x59	Input current 6 mA max. at 24 V DC output current 0.5 A/point	Remote terminals with 8 input and 8 output transistors and 3-layer terminal Block	Easy connection to deliver power to three wire sensors	SRT2-MD16T-1
8 output points	100x50x50	Output current 3A/point	Remote terminals with relay outputs	Relay can be easily replaced	SRT2-ROC08
16 output points	155x50x50	Output current 3A/point	Remote terminals with relay outputs	Relay can be easily replaced	SRT2-ROC16
8 output points	100x50x50	Output current 0,3A/point	Remote terminals with power MOS FETs outputs	Power MOS FETs can be easily replaced	SRT2-ROF08
16 output points	155x50x50	Output current 0,3A/point	Remote terminals with power MOS FETs outputs	Power MOS FETs can be easily replaced	SRT2-ROF16
8 input points (PNP)	100x50x37	Input current 10 mA max./ point at 24 V DC	Remote terminals with easy-to-wire connections to 2-wire sensors	Reduces installation time of sensors	SRT2-ID08S
8 output points (PNP)	100x50x37	Output current 0,3A/point	Remote terminals with easy-to-wire connections to 2-wire sensors	Reduces installation time of sensors	SRT2-OD08S
4 input points / 4 output points (PNP)	70x50x37	Input current 6 mA max. at 24 V DC output current 0.5 A/point	Remote terminals with easy-to-wire connections to 2-wire sensors	For sensors with teaching, external diagnostics or bankswitching functions	SRT2-ND08S
4 input points(0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA)	105x50x48	Current consumption from communications power supply 90 mA max.	Analog input terminals	Resolution 1/6000 (full scale) conversion cycle depends on number of active points, 4points: 4ms max.	SRT2-AD04
2 output points (0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA)	105x50x48	Current consumption from communications power supply 170 mA max.	Analog output terminals	Conversion time 2 ms/2 points	SRT2-DA02

Note: Models with sinking outputs (NPN type) are available as well.

Field I/O DRT2

IP67 DeviceNet I/O

Rugged I/O units for field mounting. The DRT2 slave units feature internal diagnostic and maintenance data collection, which can be accessed over the network. Power supply status, I/O response times, operation counters and on-time monitor data is available at all times. Maintenance warnings will be generated when limits are exceeded. Using CX-One or NS-series HMI with Smart Active Parts, this allows more efficient system setup, commissioning and troubleshooting.

- IP67 protection, DRT2 versions are also oil- and welding-spatter proof
- Internal circuits powered by DeviceNet; fewer connections means less installation errors.
- Smart Slave functions for diagnostics and preventive maintenance

- Indication of broken wire and short-circuit in I/O signals
- M12 connectors for fast installation.

Ordering information

I/O points	Size in mm (HxWxD)	Current	Name	Remarks	Model
8 input points (PNP) 1 input / connection.	60x175x37.7	Input current 11.0 mA max./point (for 24 VDC)	Environment-resistive terminals	Waterproof, oil-proof, and spatter-proof construction (IP67). With short-circuit protection and open wire detection.	DRT2-ID08C-1
16 input points (PNP) 2 inputs / connection.	60x175x37.7	Input current 11.0 mA max./point (for 24 VDC)	Environment-resistive terminals	Waterproof, oil-proof, and spatter-proof construction (IP67). With short-circuit protection and open wire detection.	DRT2-HD16C-1
8 output points (PNP)	60x175x43.9	Output current 1.5 A/point, 8.0 A/common	Environment-resistive terminals	Waterproof, oil-proof, and spatter-proof construction (IP67). With short-circuit protection and open wire detection.	DRT2-OD08C-1

Note: Models with sinking outputs (NPN type) are available as well.

Field I/O SRT2

IP67 CompoBus/S

Rugged I/O units for field mounting. OMRON's unique CompoBus/S is the most efficient I/O bus for machine automation. With free topology and up to 500 m bus length in long-distance mode, it can be used as a remote I/O system. In high-speed mode (100 m max.) the guaranteed sub-millisecond cycle time makes it ideal for efficient machine control. With IP67 slave modules distributed throughout the machine, the need for protective enclosures is minimised.

- IP67 protection against dust and water
- Fast cycle time; less than 1 ms for 256 I/O points
- Easy setup; no software required.
- Choice of 4- and 8-point digital I/O
- M12 connectors for easy field wiring

Ordering information

I/O points	Size in mm (HxWxD)	Current	Name	Remarks	Model
4 input points (PNP)	54x114x45	Input current 6.0 mA max./point (for 24 V DC)	Water-resistant terminals	Small size with easy connection	SRT2-ID04CL-1
8 input points (PNP)	84x160x45	Input current 6.0 mA max./point (for 24 V DC)	Water-resistant terminals	Small size with easy connection	SRT2-ID08CL-1
4 output points (PNP)	54x114x45	Output current 0.5 /point, 2.0 A/common	Water-resistant terminals	Small size with easy connection	SRT2-OD04CL-1
8 output points (PNP)	84x140x45	Output current 0.5 A/point, 2.4 A/common	Water-resistant terminals	Small size with easy connection	SRT2-OD08CL-1

Note: Models with sinking outputs (NPN type) are available as well.

Human machine interface (HMI)
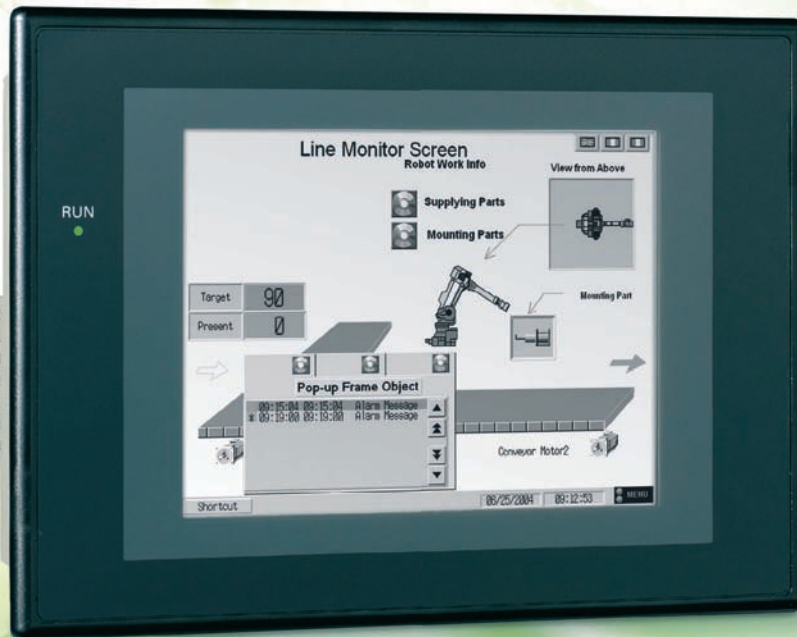
Less colour, same performance

Following customer demands for more performance without increasing costs for machines Omron introduced the NS5-Monochrome.

The NS5-Monochrome offers the same high quality and the same features as the rest of the NS-series, ranging from 5.7" to 12.1".

This product features a 5.7" STN Monochrome screen, 320 x 240 pixels resolution and a long-life backlight of minimal 50,000 hours, meaning less maintenance costs. It uses the same project data as the colour version of this terminal, which means you can re-use existing applications and download them without any changes in the monochrome version, saving a lot of development time.

We offer you the highest amount of memory (20 MB in all 5.7" screens) in the market, so you can create beautiful applications with many bitmaps and you can re-use applications throughout the complete range.

Other features of the NS5 Monochrome are:

• USB connection for downloading
• Optional Ethernet connection
• Compact Flash slot
• Powerful data log/trending function

For more info see **http://ns.europe.omron.com**

Smart Active Parts can make a difference

To be able to satisfy the current needs of customers, Omron has introduced a new way of developing a Human Machine Interface. Therefore our NS-Series allow you to take advantage of "Smart Active Parts". Smart Active Parts are pre-programmed visualisation software modules with embedded communication code that bring 'drag&drop' simplicity to system design. They are available for a wide range of Omron products like Sensors, PLCs, Inverters, Motion Controllers and Temperature Controllers.

The ease of pre-made software

SAPs allow a complete machine to be configured, commissioned, operated and maintained via the HMI. They allow, for instance, a user to monitor all slaves of a network master on one single screen, read and write parameters of connected inverters without using the inverter console, or view PLC alarms in simple text, all without having to program a single line of communication code. And because you can use SAPs just by dragging & dropping them on to a screen in the development package this saves a lot of development time, and at the same time allows more advanced features to be included that, for instance, reduce down-time or simplify machine set-up.

Written by control experts, the Smart Active Parts are provided in a library in the development package for Omron HMIs CX-Designer, which is incorporated in CX-One.

New Smart Active Parts are freely downloadable from our website:
www.omron-industrial.com

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Ordering information

NT series

Name	Specifications			Model
NT21	STN monochrome	Frame color: Beige		NT21-ST121-E
		Frame color: Black		NT21-ST121B-E
NT11	STN monochrome	Ten-key type	Frame color: Beige	NT11S–SF121-EV1
			Frame color: Black	NT11S–SF121B-EV1

NT-XS series

Name	Specifications			Model
NT2S	STN monochrome	Programmable	6-key type, Frame color: Black	NT2S-SF121B-EV2
				NT2S-SF122B-EV2
		PLC controlled		NT2S-SF123B-EV2
		Programmable	20-key type, Frame color: Black	NT2S-SF125B-E
				NT2S-SF126B-E
		PLC controlled		NT2S-SF127B-E
NT3S	STN monochrome	Programmable	2 x RS-232/CMOS, No RTC, No RS485	NT3S-ST126B-E
			RS-232/CMOS on one port, RS-232/CMOS/485/422 on second port, No RTC	NT3S-ST124B-E
			RS-232/CMOS on one port, RS-232/CMOS/485/422 on second port with RTC	NT3S-ST123B-E
			RS-232/CMOS/485/422 on both ports with RTC	NT3S-ST121B-E

Software

Name	Specifications	Model
NT-series support software for windows	For NT-series PTs Windows 95, 98, Me, 2000 or NT 4.0	NT-ZJCAT1-EV4S
Printer cable for NT11 series	To print hardcopies of screens	NT-CNT121
NT2S and NT3S support software for windows	For all models of these NT-XS series	NT-XS (free downloadable from our website)

Note: For further information please contact your OMRON representative.

Accessories

NT21 accesories

Product	Specification			Model number
Cables	For screen transfer			XW2Z-S002
	For PLC connection	PT: 9-pin PLC: 9-pin	Cable length: 2 m	XW2Z-200T
			Cable length: 5 m	XW2Z-500T
		PT: 9-pin PLC: Mini-peripheral	Cable length: 2 m	NT-CN221
Options	Reflection Protective Sheets	Display area only (5 sheets)		NT20M-KBA04
	Chemical-resistive Cover	Silicon cover		NT20S-KBA01
	Battery	For alarm lists/histories		C500-BAT08
	Memory Unit	For screen and system data transfer		NT-MF161
	RS-232C/422A Adapter			NS-AL002
	Connector Kit			XM2S-0911-S003

NTXS accesories

Cables	Specification	Model
NT2S-SF121/125 and NT3S	peripheral port CPM series except CPM2C, 2 m	NT2S-CN212-V1
NT2S-SF121/125 and NT3S	peripheral port CPM series except CPM2C, 5 m	NT2S-CN215-V1
NT2S-SF122/SF123/SF126/SF127	peripheral port CPM series except CPM2C, 2 m	NT2S-CN222-V1
NT2S-SF122/SF123/SF126/SF127	peripheral port CPM series except CPM2C, 5 m	NT2S-CN225-V2
NT2S-SF121/125 and NT3S	mini-peripheral port CJ1/CS1 and CPM2C series, 2 m	NT2S-CN223-V2
NT2S-SF122/SF123/SF126/SF127	mini-peripheral port CJ1/CS1 and CPM2C series, 2 m	NT2S-CN224-V1

Specification

Model	NT21S-ST121(B)[*1]	NT11–SF121(B)[*1]	NT2S-SF12☐B-E(V2)	NT3S-ST12☐B-E
Size in mm (HxWxD)	110x190x58	113x218x38.2	60x108x43	77x140x35
Effective display area	117x63 mm (260x140 dots)	160x64 mm	56x11 mm	98x35 mm (192 x 64 pixels, 4.1 inch)
Type with ethernet	24 VDC +10%/-15%	24 VDC ±15%	24 VDC ±10% (when applicable)	24 VDC ±15%
I/O Function keys	-	22 keys	6 to 20 keys depending on model	-
Touch panel	7 vertical x 13 horizontal	---	---	Analog Resistive
Obtained standards	UL, CSA, EC Directives,NEMA equivalent	CE, cULus	CE, cULus	CE, cULus
Display graphics	Straight lines, rectangles, polygons, circles, ovals, sector, bitmaps			Rectangle, rounded rectangle, circle, oval, line, bitmaps
No. of display characters (standard characters)	16 characters x 8 lines	20 characters x 4 lines	16 characters x 2 lines	32 characters x 8 lines
No. of registered screens	3,999 screens max. (depending on screen contents)	250	250	65,000 max. (limited by memory capacity)
Screen data capacity (standard)	512 KB	32 KB	24 KB	120 KB
Expansion memory	---	---	---	---
Memory card interface	NT-MF261 memory unit for screen transfer can be used.	---	---	---
Expansion interface	---	---	---	---
Ethernet	---	---	---	---
Internal memory	Numeral memory table: 2,000 entries max., Character memory table: 2,000 entries max.	-	1 kWords data, 1 kWords retentive memory	1 kWords data, 1 kWords retentive, 64 words system memory
Ladder monitor	---	---	---	---
Programming Console function	Supported	---	---	---
Device monitor	---	---	---	---
Barcode reader connection	Supported	---	---	---
Printer connection	---	Supported	Supported	Supported
Multivendor support	Supports most third party PLCs. [*2]	---	Supports most third party PLCs [*2]	Supports most third party PLCs [*2]
Backlight life	50,000 hours average	50,000 hours average	LED, min. 50,000 hours	LED, min. 50,000 hours

[*1] Model numbers with 'B' have a black frame and without a beige frame.
[*2] Please contact your local OMRON representative for a list of available drivers.

Selection table

Ordering information

Name	Specifications			Model
NS12	TFT, 12", 800 x 600 pixels	Without ethernet	Frame color: Beige	NS12-TS00-V2
			Frame color: Black	NS12-TS00B-V2
		With ethernet	Frame color: Beige	NS12-TS01-V2
			Frame color: Black	NS12-TS01B-V2
NS10	TFT, 10", 640 x 480 pixels	Without ethernet	Frame color: Beige	NS10-TV00-V2
			Frame color: Black	NS10-TV00B-V2
		With ethernet	Frame color: Beige	NS10-TV01-V2
			Frame color: Black	NS10-TV01B-V2
NS8	TFT, 8.4", 640 x 480 pixels	Without ethernet	Frame color: Beige	NS8-TV00-V2
			Frame color: Black	NS8-TV00B-V2
		With ethernet	Frame color: Beige	NS8-TV01-V2
			Frame color: Black	NS8-TV01B-V2
NS5-T	TFT, 5.7", 320 x 240 pixels	Without ethernet	Frame color: Beige	NS5-TQ00-V2
			Frame color: Black	NS5-TQ00B-V2
		With ethernet	Frame color: Beige	NS5-TQ01-V2
			Frame color: Black	NS5-TQ01B-V2
NS5-S	STN, 5.7", 320 x 240 pixels	Without ethernet	Frame color: Beige	NS5-SQ00-V2
			Frame color: Black	NS5-SQ00B-V2
		With ethernet	Frame color: Beige	NS5-SQ01-V2
			Frame color: Black	NS5-SQ01B-V2
NS5-M	STN, Monochrome 5.7", 320 x 240 pixels	Without ethernet	Frame color: Beige	NS5-MQ00-V2
			Frame color: Black	NS5-MQ00B-V2
		With ethernet	Frame color: Beige	NS5-MQ01-V2
			Frame color: Black	NS5-MQ01B-V2
NSH5	STN, 5.7", 320 x 240 pixels	Without Ethernet	Frame color: Black	NSH5-SQR00B-V2

Software

Name	Specifications	Model
NS-series screen design software for windows	For NS-series Windows 95, 98, Me, 2000, XP, NT 4.0 or XP	CX-Designer, included in CX-ONE

Note: For further information please contact your OMRON representative.

NS series accessories

	Specifications		Model
Cable [1]	Screen transfer cable for DOS/V		XW2Z-S002
	USB Host Cable, cable length: 5 m		NS-US52 (5 m)
	USB Host Cable, cable length: 2 m		NS-US22 (2 m)
PT-to-PLC Connecting Cable	PT connection: 9 pins PLC connection:9 pins	Length: 2 m	XW2Z-200T
		Length: 5 m	XW2Z-500T
Accessories	Video input	Inputs: 4 channels NTSC / PAL	NS-CA001
		Inputs: 2 channels NTSC b/ PAL, 1 channel RGB	NS-CA002
	Special cable for the console		F150-VKP (2 m)
			F150-VKP (5 m)
	Controller link interface unit		NS-CLK21
	RS-422A adapter (50 m)		CJ1W-CIF11
	RS-422A adapter (500 m)		NS-AL002
	Anti-reflection sheets (5 surface sheets)	NS12/10	NS12-KBA04
		NS8	NS7-KBA04
		NS5	NT30-KBA04
	Protective anti-reflection covers (5 pack)	NS12/10	NS12-KBA05
		NS8	NS7-KBA05
		NS5	NT31C-KBA05
	Transparent protective covers (5 pack)	NS12/10	NS12-KBA05N
		NS8	NS7-KBA05N
		NS5	NT31C-KBA05N
	Chemical-resistant cover (1 cover)	NS5	NT30-KBA01
	Memory card	15 MB	HMC-EF172
		30 MB	HMC-EF372
		64 MB	HMC-EF672
	Attachment adapter	(NT625C/631/631C series to NS12 series)	NS12-ATT01
		(NT625C/631/631C series to NS12 series)	NS12-ATT01B
		(NT620S/620C/600S series to NS8 series)	NS8-ATT01
		(NT600M/600G/610G/612G series to NS8 series)	NS8-ATT02
	Memory card adapter for pc		HMC-AP001
	Battery		CJ1W-BAT01
	Barcode reader (refer to the catalog for details)		V520-RH21-6

[1]   Be sure to use cables made by OMRON when connecting NS hardware to a printer. No guarantee of proper operation if other cables are used.

Specification

Model	NS12	NS10	NS8	NS5-T	NS5-S / NSH5-S	NS5-M
Type of display	TFT 12 inch colour display	TFT 10 inch colour display	TFT 8 inch colour display	TFT 5.7 inch colour display	STN 5.7 inch colour display	STN 5.7 inch monochrome display
Size in mm (HxWxD mm)	241x215x48.5		177x232x48.5	142x195x54 NSH5 176x223x70.5 (depth excl. emergency button)		
Effective display area	246x184.5 mm (800 x 600 pixels)	215.2x162.4 mm (640 x 480 pixels)	170.9x128.2 (640 x 480 pixels)	117.2x88.4 mm (320 x 240 pixels)		
Display colour	256 colours Image data: 32,768 colours				256 colours Image data: 4,096 colours	16 grey scales
Power supply	24 V DC ±15%					
Touch panel	38 vertical x 50 horizontal	30 vertical x 40 horizontal	24 vertical x 32 horizontal	15 vertical x 20 horizontal		
Obtained standards	UL 1604 C1D2, cUL, EC Directives, NEMA equivalent					
Display graphics	Rectangle, circle, oval, straight line, polyline, polygon, arc					
No. of display characters (standard characters)	100 characters x 37 lines	80 characters x 30 lines				
No. of registered screens	3,999 screens max. (depending on screen contents)					
Screen data capacity (standard)	60 MB			20 MB		
Memory card interface	ATA compact flash card interface, 1 slot					
Internal memory	Bit memory: 32,767 bits, Word memory: 32,767 words, Retentative memory: 8,192 bits and 8,192 words.					
Printer connection	Supported				---	---
Backlight life	50,000 hours minimum		40,000 hours minimum	75,000 hours minimum		50,000 hours minimum
Multivendor support	Supported for most third-party PLCs. Please contact your local OMRON distributor for more information.					
Video board (composite / RGB)	Supported				---	---

Model	NSJ5
Features	A combination of a fast and powerful CJ1 PLC, a 5.7" NS series touchscreen and open network connections. With the NSJ5 you are able to configure, commission, operate and maintain your complete automation solution. Ideal for applications that require visualisation, control and open network connection with little space. Panelless automation by making use of remote I/O terminals and intelligent devices. - 5.7" colour touchscreen, 4096 colours (images), 20 MB screen data memory - 20 k Steps PLC program memory - 32 K Words PLC data memory - DeviceNet or CAN interface - Ethernet interface - Compact Flash card interface

OMRON