SMART PLATFORM

One software – One connection – One minute

Omron's Smart Platform is designed to make machine automation easy. It provides seamless, drag-and-drop integration of all automation components in your machine. From sensor to controller, from HMI to drive, all devices are accessible through one connection using a single software suite, CX-One. Built-in distributed intelligence in Omron devices means less time programming and troubleshooting.

Every one claims ease of use, a short movie explains how easy programming and configuration can be:
www.smartplatform.info

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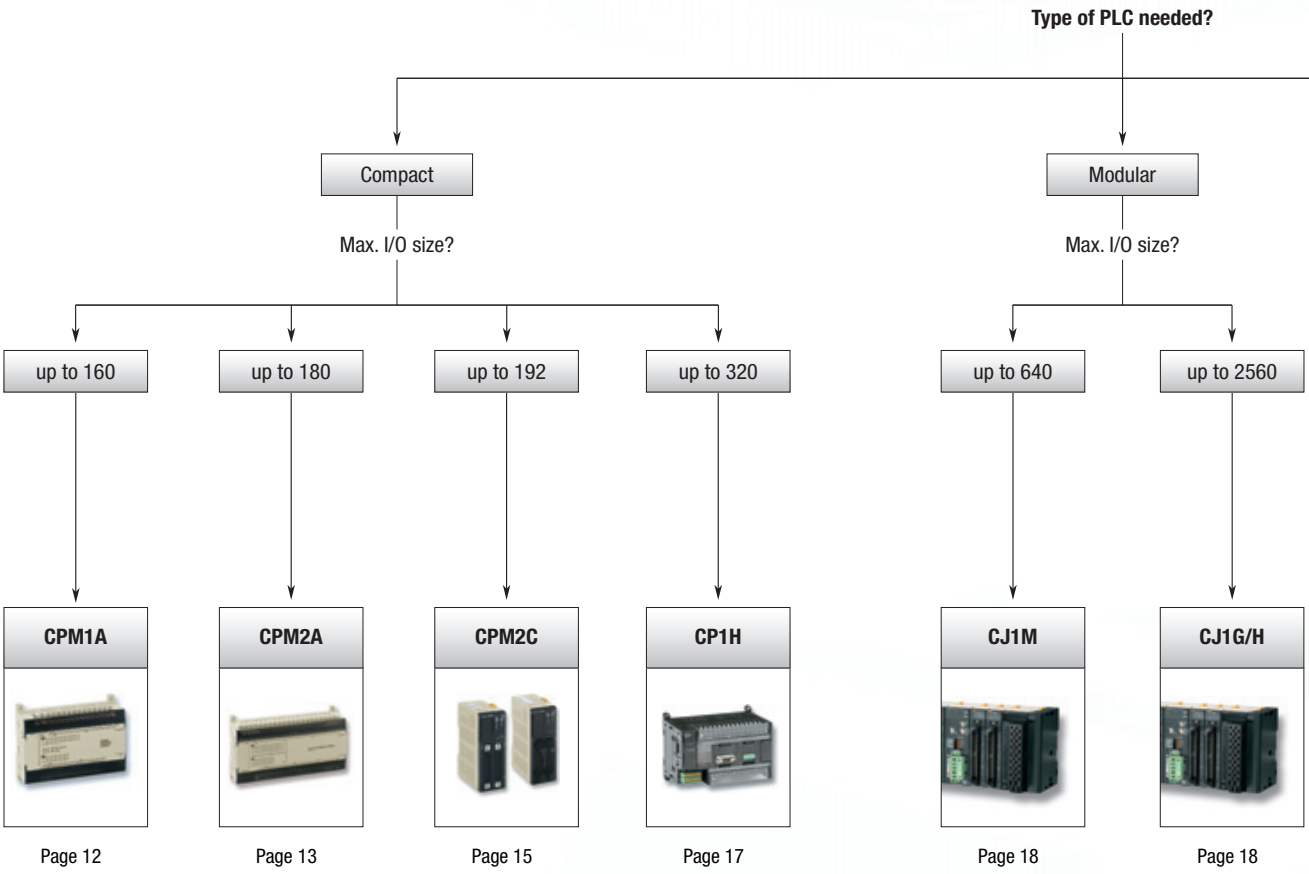
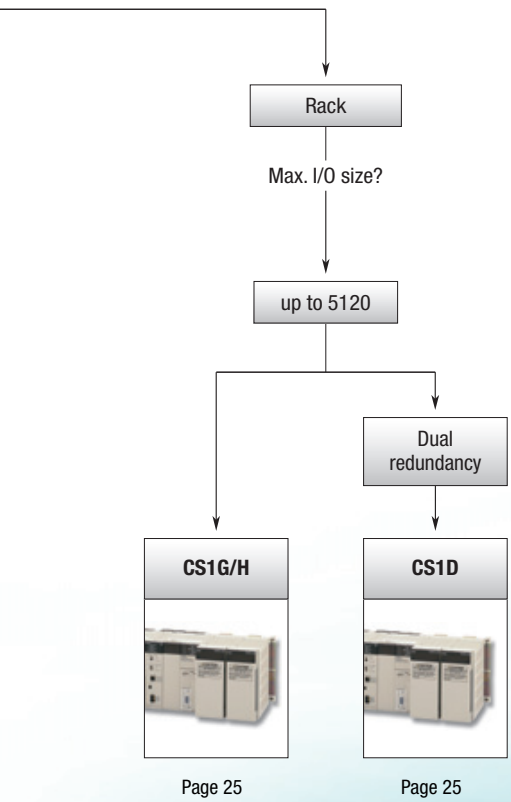
SMART, SEAMLESS AND SLICEABLE

CJ1 – The ultimate in machine scalability

CJ1 series PLC gives you the competitive edge on flexibility, efficiency and speed.
From powerful CPU models that offer total machine control, to very small CPUs that enable to “scale” your machine into logical sections, it allows you to configure the “just-right” combination for your application.

- One scalable PLC family to match exactly with your application
- Transparent communication routing through different networks
- The best size/performance ratio in the industry




Rack
Max. I/O size?
up to 5120
Dual redundancy
CS1G/H
CS1D
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Selection table

Compact PLC series					
Model		**CPM1A**	**CPM2A**	**CPM2C**	**CP1H**
Built-in	**Digital I/O**	10 to 40	20 to 60	10 to 32	40
	Interrupt inputs	2 to 4	2 to 4	2 to 4	8
	Counter inputs	1 (5 kHz)	1 (20 kHz) + 2 to 4 (2 kHz)		4 (1 MHz or 100 kHz)
	Pulse outputs	1 (2 kHz)	2 (10 kHz)		4 (1 MHz or 100 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 to 160	80 to 180	106 to 192	320
Execution time (bit instruction)		0.72 to 1.72 µs	0.26 to 0.64 µs		0.1 µs
Program memory		2 kWords	4 kWords		20 kSteps
Data memory		1 kWords	2 kWords		32 kWords
CompactFlash memory		–			
Analog I/O		Up to 6 inputs and 3 outputs 8-bit, 12-bit resolution U, I, TC, Pt100		Up to 4×(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		–			Temperature control Protocol macro RFID sensor unit
Industrial networks		Serial communications			Ethernet (100 BASE-Tx) Controller link Serial communications
Fieldbus master		–		CompoBus/S	DeviceNet CAN PROFIBUS-DP CompoBus/S
Fieldbus I/O link		DeviceNet CompoBus/S PROFIBUS-DP		DeviceNet CompoBus/S	DeviceNet PROFIBUS-DP CAN
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		Modular PLC series		Rack PLC series	
Model		CJ1M	CJ1G/H	CS1G/H	CS1D
Built-in	Digital I/O	16	–		
	Interrupt inputs	4	–		
	Counter inputs	2 (100 kHz)	–		
	Pulse outputs	2 (100 kHz)	–		
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 to 640	960 to 2560	960 to 5120	960 to 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 to 20 kSteps	10 to 250 kSteps	10 to 250 kSteps	10 to 250 kSteps
Data memory		32 kWords	64 to 448 kWords	64 to 448 kWords	64 to 448 kWords
CompactFlash memory		Up to 64 MB		Up to 64 MB	
Analog I/O		Up to 20×8 points 12 bit resolution U, I, 15 bit resolution TC, Pt100, Pt1000 inputs	Up to 36×8 points 13-bit resolution U, I, 15-bit resolution TC, Pt100, PT1000 inputs	Up to 80×8 points, 13 bit resolution or 80×4 points, 16 bit resolution U, I, TC, Pt100, process I/O	Up to 75×8 points, 13 bit resolution or 75×4 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

Compact and economical

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.

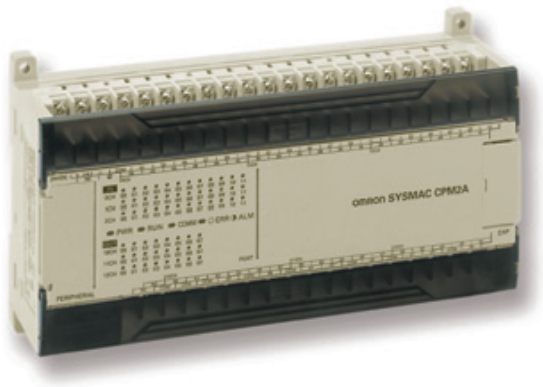
- Ultra compact
- Wide range of models; AC/DC, 10-40 I/O, relay/sink/source outputs
- Pulse I/O functions built in
- Easy connection to HMI terminal
- Digital, analog, and fieldbus expansion units

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	Order code
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

Accessories

Description	Remarks	Order code
RS-232C Adapter	Peripheral port level convertor	CPM1-CIF01
RS-422 Adapter		CPM1-CIF11
PC to peripheral port connection cable	–	CQM1-CIF02
Memory backup tool	Program up/download tool	CPM1-EMU01-V1



The universal small machine controller

Every CPM2A CPU comes equipped with an RS-232C interface as standard, e.g. to provide easy connection to a Programmable Terminal for fast and easy machine monitoring, setpoint adjustment, etc. Simple positioning with the pulse I/O function is another example of the many advanced functions and high added value that the CPM2A brings to compact machines. Removable terminal blocks ensure easy maintenance, and the CPM2A uses the same expansion I/O Units as the CPM1A for easy and economical sharing of system components.

- Real-time clock function
- 20-60 digital I/O with removable terminal blocks
- 20 kHz counter input, two 10 kHz pulse outputs integrated
- Two communication ports built-in, freely accessible
- Digital, analog, and fieldbus expansion units

Ordering information

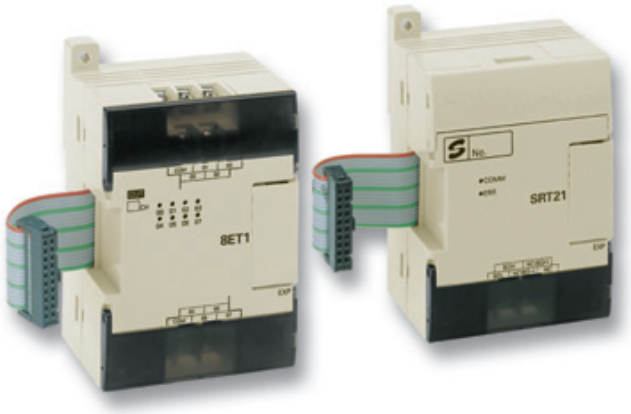
Input points	Output points	Program capacity	Data memory capacity	Logic execution speed	Expandability	Size in mm (HxWxD)	Power supply	Output method	Built-in functions	Order code
12 points	8 points	4 kWords	2 kWords	0.26 µs to 0.64 µs	Up to 3 expansions*1	90x130x90	85 to 264 VAC	Relay	1 Encoder input (20 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.

Accessories

Description	Remarks	Order code
RS-232C Adapter	Peripheral port level convertor	CPM1-CIF01
RS-422 Adapter		CPM1-CIF11
PC to peripheral port connection cable		CQM1-CIF02
Memory backup tool	Program up/download tool	CPM1-EMU01-V1

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	Order code
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

The versatile slim-line controller

An extensive range of models ensures efficient machine control in an ultra-compact package. CPU Units are available with relay or transistor output, terminal block or various connector options, and an optional real-time clock function. Select the output type, number of I/O points and other specifications to meet your needs. 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.

- Space-saving slim outline, high-density I/O
- 10-32 I/O points per CPU, transistor or relay outputs
- 20 kHz counter input, two 10 kHz pulse outputs integrated
- Two communication ports built-in, freely accessible
- Digital, analog, and fieldbus expansion units

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	Order code
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).

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	Order code
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
RS-232C and RS422 adapter units	–	1 D-sub 9-pin	RS-232C		CPM2C-CIF01-V1
		1 Terminal block and 1 D-sub 9-pin	RS-232C 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).

The All-in-One PLC

Designed for compact machines, it combines the compactness of a micro-PLC and the power of a modular PLC. Four built-in high-speed counters and four pulse outputs are ideal for multi-axis positioning control. The CP1H-XA comes with 4 analog inputs and 2 analog outputs built-in. This makes it suitable for simple loop control, using the PLC's advanced PID control function with auto-tuning. The CP1H can be expanded with CPM1 I/Os and supports up to 2 CJ1 special I/O units. This means that it is open to popular fieldbuses and supports all communication units of the CJ1 series.

- Up to 1 MHz for inputs/outputs
- CJ1M-compatible instruction set and execution speed
- 4 analog inputs and 2 analog outputs for the XA model
- USB port for easy communication, programming and configuration
- Supports PROFIBUS, DeviceNet, CAN and Ethernet

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		Order code
24 points	16 points	320 points	20 kSteps	32 kWords	100 ns	85 to 264 VAC	Relay output	4 Encoder inputs (100 kHz) 8 Interrupts/Counters	–	CP1H-X40DR-A
						20.4 to 26.4 VDC	Transistor output (sink type)	4 Encoder inputs (100 kHz) 4 Pulse outputs (100 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 output	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 output (sink type)	4 Encoder inputs (100 kHz) 4 Pulse outputs (100 kHz) 8 Interrupts/Counters		CP1H-XA40DT-D
							Transistor (source type)			CP1H-XA40DT1-D
12 points	8 points	300 points	20 kSteps	32 kWords	100 ns	20.4 to 26.4 VDC	Transistor (sink type)	4 Encoder inputs (2×1 MHz + 2×100 kHz) 4 Pulse outputs (2×1 MHz + 2×100 kHz) 6 Interrupts/Counters	–	CP1H-Y20DT-D

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

CP1H option modules

Type	Remarks	Order code
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

CJ1 CPU units

Fast and powerful CPUs for any task

The family of CJ1 CPUs range from very small CPUs for simple sequence control to powerful and fast models that offer total machine control which can handle up to 2560 I/O points. This enables you to modularize or 'slice' your machine into logical sections without changing PLC series.

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	Order code
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	20 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	CJ1M-CPU13-ETN
				20	31 mm	580 mA	–	CJ1M-CPU13
320	10 kSteps	32 kWords	100 ns	9	62 mm	950 mA	100 base-Tx Ethernet port	CJ1M-CPU12-ETN
				10	31 mm	580 mA	–	CJ1M-CPU12
160	5 kSteps	32 kWords	100 ns	9	62 mm	950 mA	100 base-Tx Ethernet port	CJ1M-CPU11-ETN
				10	31 mm	580 mA	–	CJ1M-CPU11

Accessories

Description	Remarks	Order code
CompactFlash memory card, 30 MB, for all models (not required for operation)	Industrial grade	HMC-EF372
CompactFlash memory card, 128 MB, for all models (not required for operation)	Industrial grade	HMC-EF183
CompactFlash PC-Card adapter	–	HMC-AP001
I/O terminal block (40×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

Note: MIL = connector according to MIL-C-83503 (compatible with DIN 41651/IEC 60603-1).

CJ1 power supplies, expansions

Power and flexibility

CJ1 systems can operate on 24 VDC power supply, or on 100 to 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 at 5 VDC	Output capacity at 24 VDC	Max. output power	Features	Width	Order code
21.6 to 26.4 VDC	35 W max.	2.0 A	0.4 A	16.6 W	–	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

Note: The CJ1W-PD022 has no galvanic isolation

I/O expansion

Type	Description	Width, Length	Order code
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

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.

Ordering information

Points	Type	Rated voltage	Rated current	Width	Remarks	Connection type*1	Order code
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 Screwless	CJ1W-ID211 CJ1W-ID211(SL)
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 µs 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
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	–	M3 Screwless	CJ1W-OC201 CJ1W-OC201(SL)
16	Relay output	250 VAC	2 A	31 mm	–	M3 Screwless	CJ1W-OC211 CJ1W-OC211(SL)
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
8	DC output (source)	24 VDC	0.5 A	31 mm	With short-circuit protection, alarm	M3	CJ1W-OD204
16	DC output (sink)	12 to 24 VDC	0.5 A	31 mm	–	M3 Screwless	CJ1W-OD211 CJ1W-OD211 (SL)
16	DC output (source)	24 VDC	0.5 A	31 mm	With short-circuit protection, alarm	M3 Screwless	CJ1W-OD212 CJ1W-OD212(SL)
32	DC output (sink)	12 to 24 VDC	0.5 A	20 mm	–	1 x 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
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.

Accessories

Description	Connection type	Order code
Replacement 18-point screwless terminal blocks for I/O Units, pack of 5 pcs.	Screwless	CJ-WM01-18P-5
I/O terminal block (40×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	Remarks	Connection type	Order code
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% I: 0.4%	250 µs/point	31 mm	Offset/gain adjustment, peak hold, moving average, alarms	M3	CJ1W-AD041-V1
								Screwless	CJ1W-AD041-V1 (SL)
4	Analog input	0 to 5 V 1 to 5 V 0 to 10 V 0 to 20 mA 4 to 20 mA K, J, T, L, R, S, B Pt100, PT1000, JPT100	V / I: 1/12000 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 point	31 mm	Universal inputs, with zero/span adjustment, configurable alarms, scaling, sensor error detection	M3	CJ1W-AD04U
								Screwless	CJ1W-AD04U(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% I: 0.4%	250 µs/point	31 mm	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% I: 0.5%	1 ms/point	31 mm	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% I: 0.5%	1 ms/point	31 mm	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%	250 µs/point	31 mm	Offset/gain adjustment, output hold	M3	CJ1W-DA08V
								Screwless	CJ1W-DA08V (SL)
8	Current output	4 to 20 mA	1/8,000	0.5%	250 µs/point	31 mm	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% out: 0.3%	1 ms/point	31 mm	Offset/gain adjustment, scaling, peak hold, moving average, alarms, output hold	M3	CJ1W-MAD42
								Screwless	CJ1W-MAD42 (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%	5 ms/point	31 mm	Configurable alarms, maintenance functions, user-defined scaling, zero/span adjustment, square root, totaliser	M3	CJ1W-PDC15

CJ1 analog I/O and control units

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

*1 Accuracy for Voltage and Current Inputs/Outputs as percentage of full scale and typical value at 25°C ambient temperature (Consult the operation manual for details)
Accuracy for Temperature Inputs/Outputs as percentage of process value and 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, except TS561/TS562, which are Basic I/O Units (cannot be used with CP1H).

Accessories

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

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	Remarks	Connection type	Order code
2	SSI inputs (absolute position data)	Synchronous serial protocol	Special I/O Unit	31 mm	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	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	Target values trigger interrupt to CPU	1 x MIL (40 pt)	CJ1W-CTL41-E
1	DC Motor Control Unit	PWM (24 V/4 A)	Special I/O Unit	31 mm	4 configurable digital inputs + 50 kHz counter input	3 x Screwless	CJ1W-DCM11-E
1	Position Control Unit	24 V open collector	Special I/O Unit	31 mm	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	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	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	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	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	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CJ1W-NC433
16	Position Control Unit	MECHATROLINK-II	CPU bus Unit	31 mm	Position, speed and torque control. Access to all drive parameters	ML-II	CJ1W-NCF71
32	Motion Control Unit	MECHATROLINK-II	CPU bus Unit	80 mm	Electronic CAM profiles and axis synchronisation. Registration inputs. Access to all drive parameters.	ML-II	CJ1W-MCH71

Accessories

Description	Connection type	Order code
General purpose I/O terminal block (40×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-40J6-4A
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	Connection type	Order code
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-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	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
Ethernet	1 x 100 Base-Tx	UDP, TCP/IP, FTP server,SMTP (e-mail), SNTP (time adjust), FINS routing	CPU bus Unit	31 mm	RJ45	CJ1W-ETN21
Controller link	2-wire twisted pair	Omron proprietary	CPU bus Unit	31 mm	2-wire screw + GND	CJ1W-CLK21-V1
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
CAN	1 x CAN	User-defined	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

Accessories

Description	Connection type	Order code
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.

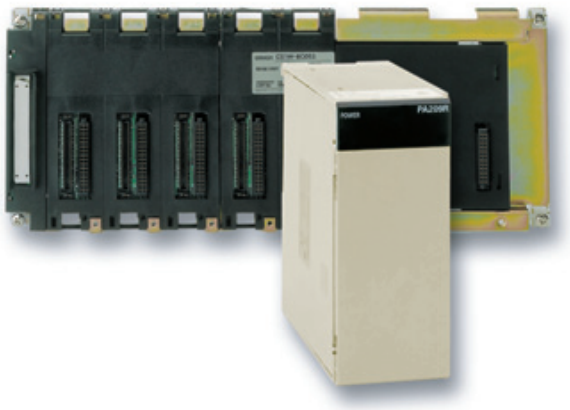
Ordering information

Max. Digital I/O points	Program capacity	Data memory capacity	Logic execution speed	Max. I/O Units	Additional functions	Order code
5120	250 kSteps	448 kWords	20 ns	80	–	CS1H-CPU67H
				71	Supports duplex power supply and I/O hot-swapping	CS1D-CPU67S
				68	CPU for full dual-redundancy	CS1D-CPU67H
					CPU for full dual-redundancy, with loop control board	CS1D-CPU67P
	120 kSteps	256 kWords		80	–	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
					CPU for full dual-redundancy, with loop control board	CS1D-CPU65P
	30 kSteps	64 kWords		80	–	CS1H-CPU64H
	20 kSteps				–	CS1H-CPU63H
	60 kSteps		40 ns		–	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	Remarks	Order code
Duplex Unit, required for CS1D-CPU6_H systems	–	CS1D-DPL01
Serial communication option board, 2 x RS-232C	–	CS1W-SCB21-V1
Serial communication option board, 1 x RS-232C + 1 x RS422/RS-485	–	CS1W-SCB41-V1
Loop control option board	50 control blocks max.	CS1W-LCB01
Loop control option board	300 control blocks max.	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, 128 MB, for all models (not required for operation)	–	HMC-EF183
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	Order code
19.2 to 28.8 VDC	40 W max.	6.6 A	0.62 A	30 W	–	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	–	C200HW-PD025
					Power supply for dual-redundant system	CS1D-PD025
85 to 264 VAC 50/60 Hz	120 VA max.	4.6 A	0.62 A	30 W	Maintenance status display	C200HW-PA204C
85 to 132 VAC, 170 to 264 VAC, 50/60 Hz					–	C200HW-PA204
					Service output 24 VDC, 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	Expansion connector	Width	Special functions	Order code
CPU backplane	2	No	200 mm	–	CS1W-BC023
CPU backplane	3	Yes	260 mm	–	CS1W-BC033
CPU backplane	5	Yes	330 mm	–	CS1W-BC053
CPU backplane	8	Yes	435 mm	–	CS1W-BC083
CPU backplane	10	Yes	505 mm	–	CS1W-BC103
Expansion backplane	3	Yes	260 mm	–	CS1W-BI033
Expansion backplane	5	Yes	330 mm	–	CS1W-BI053
Expansion backplane	8	Yes	435 mm	–	CS1W-BI083
Expansion backplane	10	Yes	505 mm	–	CS1W-BI103
CPU backplane	5	Yes	505 mm	For Duplex CPU + Power supplies	CS1D-BC052
CPU backplane	8	Yes	505 mm	For Duplex Power supplies	CS1D-BC082S
Expansion backplane	9	Yes	505 mm	For Duplex Power supplies	CS1D-BI092

Type	Remarks	Order code
I/O Expansion cable to connect 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

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	Remarks	Connection type	Order code *1
16	AC or DC input	120 VAC or VDC	10 mA	–	M3	CS1W-IA111
16	AC input	240 VAC	10 mA	–	M3	CS1W-IA211
16	DC input	24 VDC	7 mA	–	M3	CS1W-ID211
16	DC input	24 VDC	7 mA	Inputs start interrupt tasks in PLC program	M3	CS1W-INT01
16	DC input	24 VDC	7 mA	Latches pulses down to 50 µs pulse width	M3	CS1W-IDP01
32	DC input	24 VDC	6 mA	–	1×40 pt Fujitsu	CS1W-ID231
64	DC input	24 VDC	6 mA	–	2×40 pt Fujitsu	CS1W-ID261
96	DC input	24 VDC	5 mA	–	2×56 pt Fujitsu	CS1W-ID291
8	Triac output	250 VAC	1.2 A	–	M3	CS1W-OA201
16	Triac output	250 VAC	0.5 A	–	M3	CS1W-OA211
8	Relay output	250 VAC	2.0 A	–	M3	CS1W-OC201
16	Relay output	250 VAC	2.0 A	–	M3	CS1W-OC211
16	DC output (sink)	12 to 24 VDC	0.5 A	–	M3	CS1W-OD211
16	DC output (source)	24 VDC	0.5 A	With short-circuit protection, alarm	M3	CS1W-OD212
32	DC output (sink)	12 to 24 VDC	0.5 A	–	1×40 pt Fujitsu	CS1W-OD231
32	DC output (source)	24 VDC	0.5 A	With short-circuit protection, alarm	1×40 pt Fujitsu	CS1W-OD232
64	DC output (sink)	12 to 24 VDC	0.3 A	–	2×40 pt Fujitsu	CS1W-OD261
64	DC output (source)	24 VDC	0.3 A	With short-circuit protection, alarm	2×40 pt Fujitsu	CS1W-OD262
96	DC output (sink)	12 to 24 VDC	0.1 A	–	2×56 pt Fujitsu	CS1W-OD291
96	DC output (source)	24 VDC	0.1 A	–	2×56 pt Fujitsu	CS1W-OD292
32+32	DC output (sink)	12 to 24 VDC	0.3 A	–	2×40 pt Fujitsu	CS1W-MD261
32+32	DC in+out (source)	24 VDC	0.3 A	With short-circuit protection, alarm	2×40 pt Fujitsu	CS1W-MD262
48+48	DC output (sink)	12 to 24 VDC	0.1 A	–	2×56 pt Fujitsu	CS1W-MD291
48+48	DC in+out (source)	12 to 24 VDC	0.1 A	–	2×56 pt Fujitsu	CS1W-MD292

*1 C200H I/O units can also be mounted, except on CS1D systems.

Note: All Digital I/O units are designated as Basic I/O Units.

CS1 analog and process I/O units

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	Resolution	Accuracy*1	Conversion time	Remarks	Connection type	Order code
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	Offset/gain adjustment, peak hold, moving average, alarms	M3	CS1W-AD041-V1
8	Analog input						M3	CS1W-AD081-V1
18	Analog input			0.2% of PV			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	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		Offset/gain adjustment, output hold	M3	CS1W-DA08V
8	Current output	4 to 20 mA		0.5% of PV			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	Vin: 0.2% of PV I in: 0.4% of PV out: 0.3% of PV	1 ms/point	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	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	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	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	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	4 configurable alarm outputs	M3	CS1W-PTS51
4	Resistance thermometer input	Pt100, JPt100	0.1°C	0.3% of PV	62.5 ms/point	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	Configurable alarms per channel	M3	CS1W-PTS55
8	Resistance thermometer input	Pt100, JPt100	0.1°C	0.3% of PV	31.2 ms/point	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	Built-in power supply for transmitter, configurable alarms, square root, rate-of-change, etc.	M3	CS1W-PTW01
8	Power transducer input	-1 to 1 mA, 0 to 1 mA	1/4,096	0.2% of FS	25 ms/point	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	Inrush current limiter, configurable alarms, averaging, etc.	M3	CS1W-PTR02
4	Pulse rate input	20000 pps, voltage, open collector, contact	up to 1/32,000	–	25 ms/point	Averaging, totaliser	M3	CS1W-PPS01

CS1 analog and process I/O units

Points	Type	Ranges	Resolution	Accuracy*1	Conversion time	Remarks	Connection type	Order code
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	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	High/low/rate limiting, output hold, zero/span adjustment	M3	CS1W-PMV02

*1 Accuracy for Voltage and Current Inputs/Outputs as percentage of full scale and typical value at 25°C ambient temperature (Consult the operation manual for details)
Accuracy for Temperature Inputs/Outputs as percentage of process value and 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	Remarks	Connection type	Order code
2	SSI inputs (absolute position data)	Synchronous serial protocol	Special I/O unit	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	4 configurable digital inputs + 4 configurable digital outputs Target values trigger interrupt to CPU	1 x Fujitsu (40 pt)	CS1W-CT021
4					2 x Fujitsu (40 pt)	CS1W-CT041
1	Position control unit	24V open collector	Special I/O unit	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	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	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	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	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	500 kpps pulse outputs, inputs for origin, limit switches, stop, interrupt	2 x Fujitsu (40 pt)	CS1W-NC433
2	Motion control unit	Analog	Special I/O unit	Closed loop with automatic trapezoid or S-curve acceleration/deceleration	Snap-on connectors (3M)	CS1W-MC221-V1
4	Motion control unit	Analog	Special I/O unit	Closed loop with automatic trapezoid or S-curve acceleration/deceleration	Snap-on connectors (3M)	CS1W-MC421-V1
32	Motion control unit	MECHATROLINK-II	CPU bus unit	Electronic cam profiles and axis synchronisation. Registration inputs. Access to all drive parameters.	ML-II	CS1W-MCH71

Accessories

Description	Connection type	Order code
General purpose I/O terminal block (40×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-40J6-4A
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	Remarks	Connection type	Order code
Serial	2 x RS-232C	CompoWay/F, Host Link, NT link, Modbus, User-defined	CPU bus unit	–	9-pin D-Sub	CS1W-SCU21-V1
Serial	2 x RS-232C/RS-485	CompoWay/F, Host Link, NT link, Modbus, User-defined	CPU bus unit	–	9-pin D-Sub	CS1W-SCU31-V1
Serial	2 x RS-232C	CompoWay/F, Host Link, NT link, Modbus, User-defined	CPU option board	–	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	–	9-pin D-Sub	CS1W-SCB41-V1
GP-IB	Master/Slave selectable	GP-IB instrument communication	Special I/O unit	–	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	–	RJ45	CS1W-ETN21
Controller link	2-wire twisted pair	Omron proprietary	CPU bus unit	–	2-wire screw + GND	CS1W-CLK21-V1
	Optical HPCF			–	2 x HPCF connector	CS1W-CLK12-V1
	Optical graded-index fiber			–	4 x ST connector	CS1W-CLK52-V1
DeviceNet	1 x CAN	DeviceNet	CPU bus unit	–	5-p detachable	CS1W-DRM21-V1
CompoNet	4-wire, data + power to slaves (Master)	CompoNet (CIP-based)	Special I/O unit	–	4-p detachable IDC or screw	CS1W-CRM21
PROFIBUS-DP	1 x RS-485 (Master)	DP, DPV1	CPU bus unit	–	9-pin D-Sub	CS1W-PRM21
PROFIBUS-DP	1 x RS-485 (Slave)	DP	C200H special I/O unit	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		5-p detachable	C200HW-CORT21-V1
CompoBus/S	2-wire (Master)	Omron proprietary	C200H special I/O unit		2-wire screw + 2-wire power	C200HW-SRM21-V1

Accessories

Description	Connection type	Order code
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

THE SMARTEST MODULAR I/O SYSTEM

SmartSlice – Intelligence point by point

SmartSlice is the most advanced, yet easy-to-use remote I/O system currently available.
Its built-in intelligence will help to reduce the effort you spend on engineering, troubleshooting and maintenance in your machine, line or plant. By keeping track of control performance and logging all operations, each module can provide timely warnings, preventing costly machine downtime.

- Reduce engineering time
- Reduce machine downtime
- Increase your efficiency

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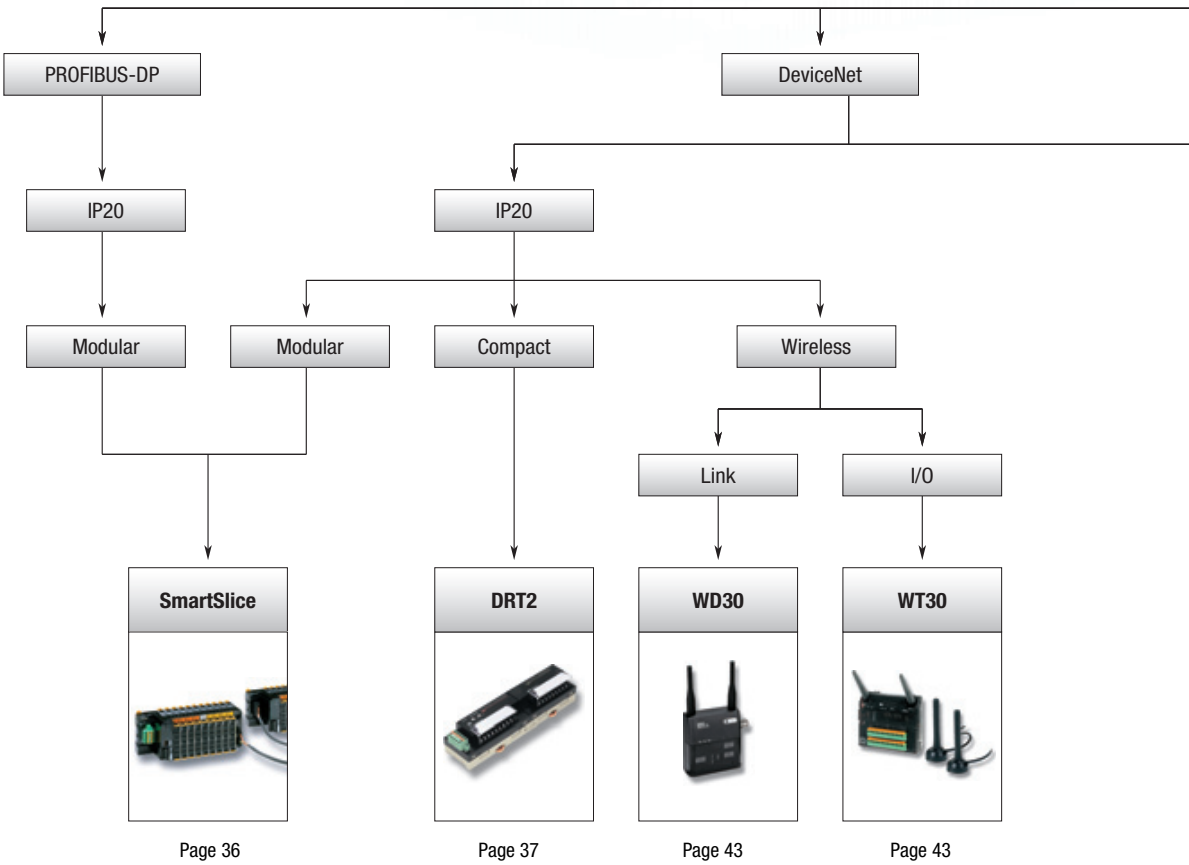

Remote I/O

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    - Compact
      - **CRT1**

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- IP67
  - Compact
    - **DRT2-_C_**

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Selection table

	Modular I/O	Compact I/O		
Model	**GRT**	**DRT2**	**CRT1**	**SRT2**
Network connection	DeviceNet open-style terminal block PROFIBUS-DP 9-pin D-sub	DeviceNet with open-style push-in terminal block	Unshielded 4-wire flat cable and IDC connectors, or general-purpose 2-wire cable by screw terminals.	CompoBus/S, (2-wire + power) by M3 screw terminals
I/O types	2/4/8-point digital I/O 2-point analog I/O Counter units Power feed units Expansion units	8/16 DI+extension, 8/16 DO+extenstion, 16 relay out, 4 AI (V/I, TC, Pt100), 2 AO (V/I),	16 DI+extension, 16 DO+extenstion, 4 AI, 2 AO, 2 DI, 2 DO.	4/8/16 DI, 4/8/16 DO, 8/16 relay out, 4 AI (V/I) 2 AO (V/I)
I/O Connection technology	Push-in screwless clamp	M3 screw terminals (1 or 3-wire DI)	M3 screw terminals, eCON/RITS sensor connectors	M3 screw terminals (1 or 3-wire DI)
Smart features	I/O and power supply diagnostics. Operation timers and counters per I/O point. Analog value calculations and alarms.	I/O and power supply diagnostics. Operation timers and counters per I/O point. Analog value calculations and alarms.	I/O and power supply diagnostics. Operation timers and counters for each I/O point. Analog value calculations and alarms.	I/O isolation, status indication
Ingress Protection class	IP20 (DIN rail mounting in cabinets)	IP20 (DIN rail mounting in cabinets)	IP20 (DIN rail mounting in cabinets)	IP20 (DIN rail mounting in cabinets)
Size in mm (H×W×D)	Bus coupler: 84×58×70 I/O units: 84×15×74	main units: 50×115/125×50; 8/16 pt. expansion: 50×66/94×50	main units: 50×115×50; 8/16 pt. expansion: 50×66/94×50; 2-point slaves: 50×50×30	DI/DO units : 50×80/105/180×48; Relay units: 50×100/155×50; analog units : 50×105×48
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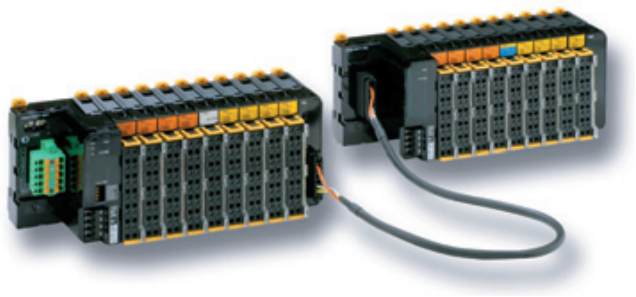
	Field I/O			Wireless I/O
Model	**DRT2-_C_**	**CRT1B-_P_**	**SRT2-_C_**	**WD30/WT30**
Network connection	DeviceNet with M12 micro connector	Unshielded 4-wire flat cable and IP54-rated IDC connectors	CompoBus/S, by 4-wire M12 connector, unshielded	DeviceNet M12 connection RS-232C by 9-pin D-sub
I/O types	8/16 DI, 8/16 DO, 8DI + 8 DO	2/4 DI, 2 DO, 2DI + 2DO	4/8 DI, 4/8 DO	Wireless link, 16 DI, 8DI + 8DO
I/O Connection technology	M12, 1 or 2 I/O signals per connector. 7/8" I/O Power connector.	eCON/RITS sensor connectors, screwless clamp connection	M12 connectors, one I/O point per connector	Push-in screwless clamp
Smart features	I/O and power supply diagnostics. Operation timers and counters per I/O point.	I/O and power supply diagnostics. Operation timers and counters per I/O point.	I/O isolation, status indication	Wireless link diagnostics Explicit message communication
Ingress Protection class	IP67, flat mounting by two M5 screws	IP54, flat mounting by two M5 screws	IP67, flat mounting by three M5 screws	IP20 (cabinet mounting). Separate antennas (IP67) can be mounted outside the cabinet
Size in mm (H×W×D)	175×60×27.3	90×50×50	114/160×54×29.5	WD30: 80x95x35 WT30: 105x90x40
Page	40	41	42	43



The smartest modular I/O system

Omron's SmartSlice I/O system is compact, intelligent and easy. When used with Omron's CS1/CJ1 DeviceNet master units it is plug-and-work, 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 (84 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 for installation

Ordering information

Model	Function	Specifications	Size in mm (HxWxD)	Order code
Interface units	DeviceNet interface unit	For up to 64 I/O units	84x58x70	GRT1-DRT
	PROFIBUS-DP interface unit	For up to 64 I/O units	84x58x70	GRT1-PRT
	End plate	One unit required per bus interface	84x20x58	GRT1-END
I/O units	4 NPN inputs	24 VDC, 6 mA, 3-wire connection	84x15x74	GRT1-ID4
	4 PNP inputs	24 VDC, 6 mA, 3-wire connection	84x15x74	GRT1-ID4-1
	8 NPN inputs	24 VDC, 4 mA, 1-wire connection + 4xG	84x15x74	GRT1-ID8
	8 PNP inputs	24 DC, 4 mA, 1-wire connection + 4xV	84x15x74	GRT1-ID8-1
	4 NPN outputs	24 VDC, 500 mA, 2-wire connection	84x15x74	GRT1-OD4
	4 PNP outputs	24 VDC, 500 mA, 2-wire connection	84x15x74	GRT1-OD4-1
	4 PNP outputs with short-circuit protection	24 VDC, 500 mA, 3-wire connection	84x15x74	GRT1-OD4G-1
	8 NPN outputs	24 VDC, 500 mA, 1-wire connection + 4xV	84x15x74	GRT1-OD8
	8 PNP outputs	24 VDC, 500 mA, 1-wire connection + 4xG	84x15x74	GRT1-OD8-1
	8 PNP outputs with short-circuit protection	24 VDC, 500 mA, 1-wire connection + 4xG	84x15x74	GRT1-OD8G-1
	2 relay outputs	240 VAC, 2A, normally-open contacts	84x15x74	GRT1-ROS2
	60 kHz Counter unit, NPN	A/B encoder input (24 V) + 1 Z/control input + 1 output (NPN-type)	84x15x74	GRT1-CT1
	60 kHz Counter unit, PNP	A/B encoder input (24 V) + 1 Z/control input + 1 output (PNP-type)	84x15x74	GRT1-CT1-1
	100 kHz Counter / Positioner unit	A/B/Z encoder input (line driver or 24 V selectable) + 1 control input + 2 outputs (PNP-type)	84x15x74	GRT1-CP1-L
	2 analog inputs, current/voltage	±10 V, 0-10 V, 0-5 V, 1-5 V, 0-20 mA, 4-20 mA	84x15x74	GRT1-AD2
	2 analog outputs, voltage	± 10 V, 0-10 V, 0-5 V, 1-5 V	84x15x74	GRT1-DA2V
	2 analog outputs, current	0-20 mA, 4-20 mA	84x15x74	GRT1-DA2C
	2 Pt100 inputs	Pt100, 2-wire or 3-wire connection	84x15x74	GRT1-TS2P*1
	2 Pt1000 inputs	Pt1000, 2-wire or 3-wire connection	84x15x74	GRT1-TS2PK*1

*1 Release Q2 2007

Model	Description	Size in mm (HxWxD)	Order code
Other units	I/O power feed unit, separates power supply between groups of I/O units	84x15x74	GRT1-PD2
	I/O power feed and distribution unit, separates power supply between groups of I/O units, 8xV + 4xG	84x15x74	GRT1-PD8
	I/O power feed and distribution unit, separates power supply between groups of I/O units, 4xV + 8xG	84x15x74	GRT1-PD8-1
	I/O power connection unit, 8xV + 4xG	84x15x74	GRT1-PC8
	I/O power connection unit, 4xV + 8xG	84x15x74	GRT1-PC8-1
	Turnback Unit, right-hand side	84x20x58	GRT1-TBR
	Turnback Unit, left-hand side	84x58x70	GRT1-TBL
	Turnback cable, one meter	1 m	GCN2-100

Accessories

Description	Order code
Replacement front connectors, pack of 5 pcs.	GRT1-BT1-5
PROFIBUS-DP connector, 9-pin D-sub	PROFIBUS Connector 839550
PROFIBUS-DP connector, 9-pin D-sub, with bus termination	PROFIBUS Term. Conn. 846086

Smart DeviceNet I/O

Compact DeviceNet I/O units with extensive diagnostic functions. Data regarding power supply status, I/O response times, operation counters and on-time are continuously recorded and checked against user-defined limits. Any deviation is reported to the control system, as indication to perform machine maintenance and prevent unplanned downtime. Smart DeviceNet I/Os are supported by PLC Function Blocks and HMI Smart Active Parts, allowing program-less visualisation and monitoring from the CJ1 PLCs and NS operator 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

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
8-point PNP input unit	24 VDC, 6 mA per point	50x115x50	–	DRT2-ID08-1
16-point PNP input unit	24 VDC, 6 mA per point	50x115x50	Expandable with one XWT unit	DRT2-ID16-1
16-point PNP input unit	24 VDC, 6 mA per point	50x180x58	3-tier connection for direct sensor wiring	DRT2-ID16TA-1
8-point PNP output unit	24 VDC, 0.5 A per point	50x115x50	–	DRT2-OD08-1
16-point PNP output unit	24 VDC, 0.5 A per point	50x115x50	Expandable with one XWT unit	DRT2-OD16-1
16-point PNP output unit	24 VDC, 0.5 A per point	50x180x58	3-tier connection for direct actuator wiring	DRT2-OD16TA-1
16-point relay output unit	2 A per point, max. 8 A per common	50x125x52	with easy-to-replace relays, expandable with one XWT unit	DRT2-ROS16
8-point input + 8-point output unit (PNP)	24 VDC, input 6 mA, output 0.5 A per point	50x115x50	–	DRT2-MD16-1
8-point input + 8-point output unit (PNP)	24 VDC, input 6 mA, output 0.5 A per point	50x180x58	3-tier connection for direct sensor/actuator wiring	DRT2-MD16TA-1
4-Channel analog input unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	50x115x50	Resolution 1/6000, conversion time 4 ms (4 inputs)	DRT2-AD04
4-Channel analog input unit	1 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	50x115x50	Resolution 1/30000, conversion time 250 ms (4 inputs)	DRT2-AD04H
2-Channel analog output unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	50x115x50	Resolution 1/6000, conversion time 2 ms (2 outputs)	DRT2-DA02
2-Channel temperature input unit	Platinum Resistance Thermometer types Pt100, JPt100	50x115x50	0.3% accuracy, conversion time 250 ms (4 inputs)	DRT2-TS04P
2-Channel temperature input unit	Thermocouple types R, S, K, J, T, B, L, E, U, N, W, and PL2	50x115x50	0.3% accuracy, conversion time 250 ms (4 inputs)	DRT2-TS04T
8-point PNP input expansion unit	24 VDC, 6 mA per point	50x66x50	Expansion unit for DRT2 and CRT1 series	XWT-ID08-1
16-point PNP input expansion unit	24 VDC, 6 mA per point	50x94x50	Expansion unit for DRT2 and CRT1 series	XWT-ID16-1
8-point PNP output expansion unit	24 VDC, 0.5 A per point	50x66x50	Expansion unit for DRT2 and CRT1 series	XWT-OD08-1
16-point PNP output expansion unit	24 VDC, 0.5 A per point	50x94x50	Expansion unit for DRT2 and CRT1 series	XWT-OD16-1

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Type	Order code
Power supply tap with 2 fuses, 2 bus connectors and termination resistor	DCN1-1P
T-branch tap with 3 bus connectors (screw clamp) and terminating resistor	DCN1-1C
T-branch tap with 3 bus connectors (screwless)	DCN1-1NC
T-branch tap with 5 bus connectors (screw clamp) and terminating resistor	DCN1-3C
T-branch tap with 5 bus connectors (screwless)	DCN1-3NC
Terminating resistor with screw terminals	DRS1-T

Smart CompoNet I/O

Combining the smart features of DRT2 DeviceNet I/O and the speed and ease of use of CompoBus/S, CompoNet is ideal for high-speed machine control with a flexible and expandable architecture. The special flat cable and IDC connectors make installation quick and easy. The use of repeaters allows wide-area networks with free topology, ideal for conveyor- and warehouse automation.

- Compact size IP20 housing
- Expandable digital I/Os with detachable terminal blocks
- Easy network wiring with IDC connections
- Built-in diagnostics and preventive maintenance functions
- Analog I/O with data pre-processing and alarm functions

Ordering information

Main units

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
2-point PNP input unit	24 VDC, 6 mA per point	48x48x32	e-CON sensor connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-ID02S-1
2-point PNP output unit	24 VDC, 0.2 A per point	48x48x32	e-CON sensor connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-OD02S-1
16-point PNP input unit	24 VDC, 6 mA per point	50x115x50	Expandable with one XWT unit.	CRT1-ID16-1
16-point PNP output unit	24 VDC, 0.5 A per point	50x115x50	Expandable with one XWT unit.	CRT1-OD16-1
4-Channel analog input unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	50x115x50	Resolution 1/6000, conversion time 4 ms (4 inputs)	CRT1-AD04
2-Channel analog output unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	50x115x50	Resolution 1/6000, conversion time 2 ms (2 outputs)	CRT1-DA02

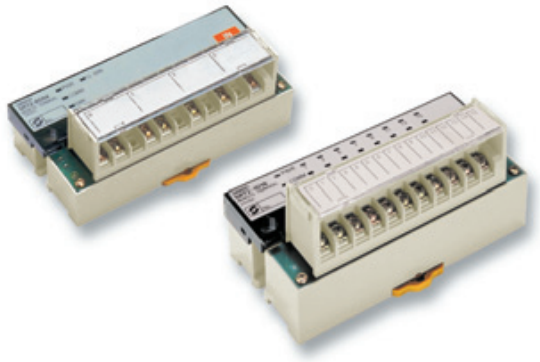
Expansion units

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
8-point PNP input expansion unit	24 VDC, 6 mA per point	50x66x50	Expansion unit for DRT2 and CRT1 series	XWT-ID08-1
16-point PNP input expansion unit	24 VDC, 6 mA per point	50x94x50	Expansion unit for DRT2 and CRT1 series	XWT-ID16-1
8-point PNP output expansion unit	24 VDC, 0.5 A per point	50x66x50	Expansion unit for DRT2 and CRT1 series	XWT-OD08-1
16-point PNP output expansion unit	24 VDC, 0.5 A per point	50x94x50	Expansion unit for DRT2 and CRT1 series	XWT-OD16-1

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
CompoNet Repeater Unit	1 upstream port + 1 downstream port	50x95x43	For extending CompoNet trunk lines, or creating branch lines	CRS1-RPT01
CompoNet 4-wire flat cable	For IP20 use	100 m	For power supply + communication, use with DCN4-connectors	DCA4-4F10
CompoNet Branch connector for trunk line	For IP20 use	–	To create a branching point on a trunk line	DCN4-TR4
CompoNet Branch line end connector	For IP20 use	–	To connect a branch line to a trunk line	DCN4-BR4
CompoNet Y-connector	For IP20 use	–	To connect two line connectors to one slave unit	DCN4-MD4
CompoNet Screw terminal connector	For IP20 use	–	To provide conventional screw terminals for masters or slaves	DCN4-TB4
CompoNet Terminator	For IP20 use	–	Plugs in to DCN4-MD4 or DCN4-TR4	DCN4-TM4
CompoNet connector tool	For DCN4-connectors	–	To attach DCN4-connectors to DCA4-4F10 flat cable	DWT-A01



Fast and easy over CompoBus/S

Omron's unique CompoBus/S is the original 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-milli-second 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-, and relay models
- Analog In/Outputs and customisable modules available

Ordering information

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
4-point PNP input unit	24 VDC, 6 mA per point	48x80x50	Compact IP20 I/O	SRT2-ID04-1
8-point PNP input unit	24 VDC, 6 mA per point	48x80x50	Compact IP20 I/O	SRT2-ID08-1
16-point PNP input unit	24 VDC, 6 mA per point	48x105x50	Compact IP20 I/O	SRT2-ID16-1
16-point PNP input unit	24 VDC, 6 mA per point	50x180x59	3-tier connection for direct sensor wiring	SRT2-ID16T-1
4-point PNP output unit	24 VDC, 0.3 A per point	48x80x50	Compact IP20 I/O	SRT2-OD04-1
8-point PNP output unit	24 VDC, 0.3 A per point	48x80x50	Compact IP20 I/O	SRT2-OD08-1
16-point PNP output unit	24 VDC, 0.3 A per point	48x105x50	Compact IP20 I/O	SRT2-OD16-1
16-point PNP output unit	24 VDC, 0.5 A per point	50x180x59	3-tier connection for direct sensor/actuator wiring	SRT2-OD16T-1
8-point input + 8-point output unit (PNP)	24 VDC, input 6 mA, output 0.3 A per point	50x180x59	3-tier connection for direct actuator wiring	SRT2-MD16T-1
8-point relay output unit	Max. 3 A per point	50x100x50	with easy-to-replace relays	SRT2-ROC08
16-point relay output unit	Max. 3 A per point	50x155x50	with easy-to-replace relays	SRT2-ROC16
4-Channel analog input unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	48x105x50	Resolution 1/6000, conversion time 4 ms (4 inputs)	SRT2-AD04
2-Channel analog output unit	0 to 5 V, 1 to 5 V, 0 to 10 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	48x105x50	Resolution 1/6000, conversion time 2 ms (2 outputs)	SRT2-DA02

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Type	Order code
CompoBus/S 4-wire flatcable for power and communication (100 m)	SCA1-4F10
CompoBus/S branch connector (IDC) for flatcable	SCN1-TH4
CompoBus/S termination connector (IDC) for flatcable	SCN1-TH4T
CompoBus/S termination block (screw connection)	SRS1-T

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, and is internally checked against user-defined limits. Maintenance warnings will be generated when limits are exceeded. Using CX-One or NS-series HMI with Smart Active Parts for visualisation, this allows more efficient system setup, commissioning and troubleshooting without any additional programming.

- 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

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
4-point PNP input unit	24 V, 6 mA	123x60x44	Separate I/O power supply connection	DRT2-ID04CL-1
8-point PNP input unit	24 V, 6 mA	175x60x44	Separate I/O power supply connection	DRT2-ID08CL-1
8-point PNP input unit	24 V, 11 mA, with power short-circuit and sensor disconnection detection	175x60x38	Unit power supply via DeviceNet cable	DRT2-ID08C-1
16-point PNP input unit	24 V, 6 mA, 2 inputs per M12 connector	175x60x44	Separate I/O power supply connection	DRT2-HD16CL-1
16-point PNP input unit	24 V, 11 mA, 2 inputs per M12 connector, with power short-circuit and sensor disconnection detection	175x60x38	Unit power supply via DeviceNet cable	DRT2-HD16C-1
4-point PNP output unit	24 V, 0.5 A per point	123x60x44	Separate I/O power supply connection	DRT2-OD04CL-1
8-point PNP output unit	24 V, 0.5 A per point	175x60x44	Separate I/O power supply connection	DRT2-OD08CL-1
8-point PNP output unit	24 V, 1.5 A per point (8 A total), with short-circuit protection + indication	175x60x44	Separate I/O power supply connection	DRT2-OD08C-1
16-point PNP output unit	24 V, 0.5 A per point, 2 points per M12 connector	175x60x44	Separate I/O power supply connection	DRT2-WD16CL-1
8-point input + 8-point PNP output unit	24 V, 6 mA input, 0.5 A output per point, 2 points per M12 connector	175x60x44	Separate I/O power supply connection	DRT2-MD16CL-1

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Unit type	Specifications	Order code
DeviceNet thin cable	with one M12 socket connector (female), 1 m	DCA1-5CN01F1
DeviceNet thin cable	with one M12 socket connector (female), 2 m	DCA1-5CN02F1
DeviceNet thin cable	with one M12 socket connector (female), 5 m	DCA1-5CN05F1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male), 1 m	DCA1-5CN01W1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male), 2 m	DCA1-5CN02W1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male), 5 m	DCA1-5CN05W1
DeviceNet T-connector for thin cable	with two M12 socket connectors (female) + one M12 plug connector (male)	DCN2-1
DeviceNet terminator	with M12 plug connector	DRS2-1
Power supply cable	with one 7/8 inches socket connector (female), 2 m	XS4F-D421-102-A
Power supply cable	with one 7/8 inches socket connector (female), 5 m	XS4F-D421-105-A
Power supply cable	with one 7/8 inches socket connector (female) and one 7/8 inches plug connector (male), 2 m	XS4W-D421-102-A
Power supply cable	with one 7/8 inches socket connector (female) and one 7/8 inches plug connector (male), 5 m	XS4W-D421-105-A
Power supply T-connector	with two 7/8 inches socket connectors (female) + one 7/8 inches plug connector (male)	XS4R-D424-5
4-wire I/O connection cable	with one M12 plug connector (male), 1 m	XS2H-D421-C80-A
4-wire I/O connection cable	with one M12 plug connector (male), 2 m	XS2H-D421-D80-A
4-wire I/O connection cable	with one M12 plug connector (male), 5 m	XS2H-D421-G80-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 1 m	XS2W-D421-C81-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 2 m	XS2W-D421-D81-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 5 m	XS2W-D421-G81-A
Y-connector for 16-point I/O units	Splits the 2 I/O points per M12 connector to two M12 connectors	XS2R-D426-1
Y-connector cable for 16-point I/O units	Splits the 2 I/O points per M12 connector to two M12 connectors, 1 m	XS2R-D426-C11-F
M12 connector	M12 plug connector (male), solder type	XS2G-D421
M12 connector	M12 socket connector (female), solder type	XS2C-D421
IP67 cap for M12 sockets	Metal cap for unused I/O connections	XS2Z-12

IP54 CompoNet I/O – The alternative solution for field-mounted I/O

IP67 I/O offers a high degree of protection, but requires costly connection technology. CompoNet IP54 I/O offers an alternative with standard I/O connections, easy communication wiring with IDC connectors, all in a dust-proof and splash-resistant case. High-speed communication and flexible topology make it ideal for finely distributed control.

- IP54 protection, dust-proof and splash water resistant
- Internal circuits powered by CompoNet; 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
- Sensor connectors or push-in screwless terminals for fast installation

Ordering information

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
2-point PNP input unit	24 VDC, 6 mA per point	95x50x51	e-CON sensor connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-ID02SP-1
4-point PNP input unit	24 VDC, 6 mA per point	95x50x51	e-CON sensor connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-ID04SP-1
2-point PNP output unit	24 VDC, 0.2 A per point	95x50x51	e-CON sensor connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-OD02SP-1
2-point input + 2-point PNP output unit	24 VDC, 6 mA per point (input), 0.2 A per point (Output)	95x50x51	Screwless push-in connectors, power supply via CompoNet cable (50 cm attached)	CRT1B-MD04SLP-1

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Unit type	Specifications	Size in mm (HxWxD)	Remarks	Order code
CompoNet Repeater Unit	1 upstream port + 1 downstream port	50x95x43	For extending CompoNet trunk lines, or creating branch lines	CRS1-RPT01
CompoNet 4-wire flat cable	For IP54 use	100 m	For power supply + communication, use with DCN5-connectors	DCA5-4F10
CompoNet Branch connector for trunk line	For IP54 use	–	To create a branching point on a trunk line	DCN5-TR4
CompoNet Branch line end connector	For IP54 use	–	To connect a branch line to a trunk line	DCN5-BR4
CompoNet Terminator	For IP54 use	–	Plugs in to DCN5-TR4	DCN5-TM4
CompoNet connector tool	For DCN5-connectors	–	To attach DCN5-connectors to DCA5-4F10 flat cable	DWT-A02

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

Unit type	Specifications	Size in mm (HxWxD)	Order code
4-point PNP input unit	24 V, 6 mA	114x54x45	SRT2-ID04CL-1
8-point PNP input unit	24 V, 6 mA	114x54x45	SRT2-ID08CL-1
4-point PNP output unit	24 V, 0.5 A per point	114x54x45	SRT2-OD04CL-1
8-point PNP output unit	24 V, 0.5 A per point	114x54x45	SRT2-OD08CL-1

Note: To order models with NPN (sinking) outputs and corresponding inputs (+V common), omit the "-1" from the model code.

Accessories

Unit type	Specifications	Remarks	Order code
CompoBus/S terminator	with M12 plug connector	–	SRS2-1
M12 connector	M12 plug connector (male), screw type	For CompoBus/S 4-wire round cable	XS2G-D4S7
M12 connector	M12 socket connector (female), screw type	For CompoBus/S 4-wire round cable	XS2C-D4S7
M12 T-connector (4-wire)	with two M12 socket connectors (female) + one M12 plug connector (male)	–	XS2R-D427-5
4-wire I/O connection cable	with one M12 plug connector (male), 1 m	–	XS2H-D421-C80-A
4-wire I/O connection cable	with one M12 plug connector (male), 2 m	–	XS2H-D421-D80-A
4-wire I/O connection cable	with one M12 plug connector (male), 5 m	–	XS2H-D421-G80-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 1 m	–	XS2W-D421-C81-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 2 m	–	XS2W-D421-D81-A
4-wire I/O connection cable	with one M12 socket connector (female) and one M12 plug connector (male), 5 m	–	XS2W-D421-G81-A
Y-connector for 16-point I/O units	Splits the 2 I/O points per M12 connector to two M12 connectors	–	XS2R-D426-1
Y-connector cable for 16-point I/O units	Splits the 2 I/O points per M12 connector to two M12 connectors, 1 m	–	XS2R-D426-C11-F
M12 connector	M12 plug connector (male), solder type	–	XS2G-D421
M12 connector	M12 socket connector (female), solder type	–	XS2C-D421
IP67 cap for M12 sockets	Metal cap for unused I/O connections	–	XS2Z-12

Wireless DeviceNet communication

There are applications where a normal wired connection is not practical, impossible to maintain or prone to disturbance. WD30 provides a wireless master-slave data link for up to 63 DeviceNet sub-networks. Alternatively, a WD30 master unit can directly control WT30 wireless I/O slave units. For direct access to wireless remote I/O without passing through DeviceNet, the WT30 master is equipped with a serial CompoWay/F interface.

- Easy to set-up: Extensive diagnostic features such as signal strength measurement and channel usage
- Each Wireless master handles up to 100/100 words, input/output data. Up to 63 Wireless Slaves per Wireless Master
- Uses spread spectrum technology for superior noise resistance in manufacturing environments
- Relay function for extension of communication range (3 repeaters max.)
- Explicit message communication

Ordering information

Unit type	Size in mm (HxWxD)	Order code
Wireless Master unit; slave on DeviceNet network; with 2 pencil antennas	80x159x35	WD30-ME
Wireless Master unit; slave on DeviceNet network; with 2 magnetic base antennas	80x95x35	WD30-ME01
Wireless Slave unit; Master on DeviceNet network; with 2 pencil antennas	80x159x35	WD30-SE
Wireless Slave unit; Master on DeviceNet network; with 2 magnetic base antennas	80x95x35	WD30-SE01
Wireless Master unit; controlled by serial RS232-C link (antenna not included)	105x90x40	WT30-M01-FLK
Wireless Slave unit; 16 digital inputs (NPN/PNP)	105x90x40	WT30-SID16
Wireless slave unit; 8 digital inputs + 8 digital outputs (PNP)	105x90x40	WT30-SMD16-1

Accessories

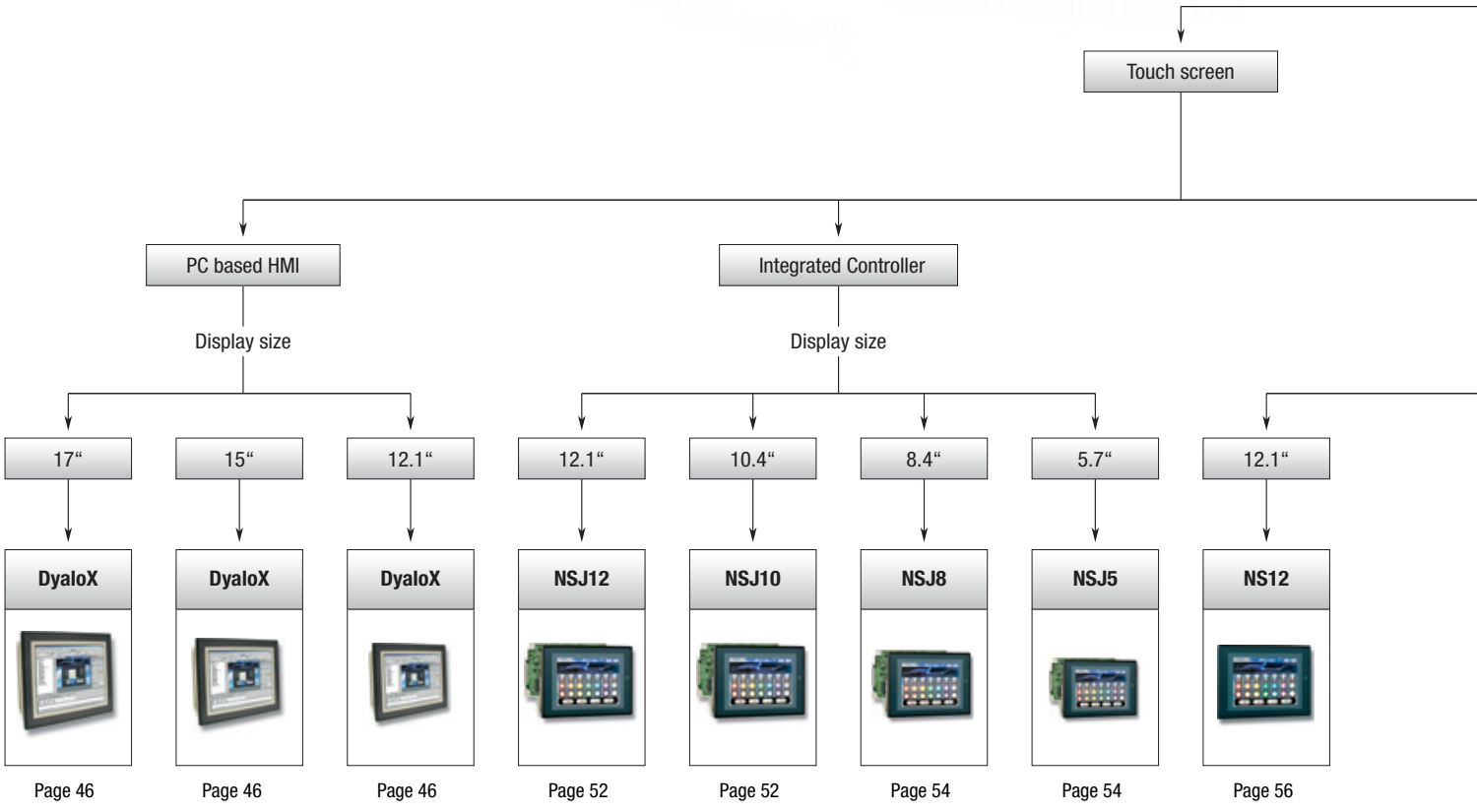
Unit type	Remarks	Size	Order code
Magnet base antennas (set of 2), with 2 m cable	–	115x∅36	WT30-AT001
Pencil antennas (set of 2)	–	75	WT30-AT003
DIN-rail mounting bracket for WT30	–	–	WT30-FT001
DeviceNet thin cable	with one M12 socket connector (female)	1 m	DCA1-5CN01F1
DeviceNet thin cable	with one M12 socket connector (female)	2 m	DCA1-5CN02F1
DeviceNet thin cable	with one M12 socket connector (female)	5 m	DCA1-5CN05F1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male)	1 m	DCA1-5CN01W1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male)	2 m	DCA1-5CN02W1
DeviceNet thin cable	with one M12 socket connector (female) and one M12 plug connector (male)	5 m	DCA1-5CN05W1
DeviceNet T-connector for thin cable	with two M12 socket connectors (female) + one M12 plug connector (male)	–	DCN2-1
DeviceNet terminator	with M12 plug connector	–	DRS2-1

THE RELIABLE INDUSTRIAL DIALOGUE

DyaloX – The reliable choice

The DyaloX Industrial PC is designed to provide exceptional performance, operating round-the-clock throughout its lifetime. It offers self-diagnostic hardware and software, such as the Omron RAS solution, to ensure that DyaloX IPCs will keep on running long after other IPCs have given up. Packaged with our HMI software, CX-Supervisor, it is the ultimate PC based HMI solution.

- Self-diagnostic system as early warning system to avoid machine downtime
- Fan-less, HDD-less (2 GB disk-on-module storage, CF for storage expansion)
- 3 year warranty, 5 year minimum delivery, 7 year courier repair service



Interaction type

- Function keys
  - 4 lines
    - NT11 — Page 64
  - 2 lines
    - NT2S — Page 65
- Advanced HMI
  - Display size
    - 10.4“ — NS10 — Page 56
    - 8.4“ — NS8 — Page 56
    - 5.7“ — NS5 — Page 57
    - 5.7“ — NS5 Handheld — Page 59
- Basic HMI
  - 5.2“ — NT21S — Page 62
  - 4.1“ — NT3S — Page 63

Industrial PC created for 24/7 operation in the most demanding industrial environments

The DyaloX Industrial PC is designed to provide exceptional performance operating round-the-clock throughout its lifetime. Drawing on our many years' experience in industrial-class standalone PC-based equipment, we have created unique self-diagnostic hardware and software, such as the Omron RAS solution, to ensure that DyaloX IPCs will keep on running long after other IPCs have given up.

- Omron RAS solution
- Industrial-grade 1.3 GHz Intel Celeron CPU
- 2 GB Disk_On_Module storage, CF interface for extended storage
- Fan-less heat sink cooling for enhanced reliability
- 3 year warranty, 5 year minimum delivery, 7 year courier repair service

Ordering information

Type		Order Code
Industrial PC	12 inches, 1.3 GHz, 512 MB internal, 2 GB storage, black	NSA12-TX01B-E
	12 inches, 1.3 GHz, 512 MB internal, 2 GB storage, silver	NSA12-TX01S-E
	15 inches, 1.3 GHz, 512 MB internal, 2 GB storage, black	NSA15-TX01B-E
	15 inches, 1.3 GHz, 512 MB internal, 2 GB storage, silver	NSA15-TX01S-E
Industrial PC (attachable panel option)	1.3 GHz, RAM: 512 MB, DOM: 2 GB	NSA-CPU01-E
	1.3 GHz, RAM: 512 MB, DOM: 4 GB	NSA-CPU02-E
	1.3 GHz, RAM: 1 GB, DOM: 2 GB	NSA-CPU03-E
	1.3 GHz, RAM: 1 GB, DOM: 4 GB	NSA-CPU04-E
Touchscreen panel	15 inches, black	NSA-TX151B
	15 inches, silver	NSA-TX151S
	17 inches, black	NSA-TY171B
	17 inches, silver	NSA-TY171S

Accessories

Type	Order Code
DVI & USB cable 0.1 m	NSA-DU02
DVI & USB cable 2 m	NSA-DU22
DVI & USB cable 5 m	NSA-DU52
Set of 5 Anti-reflection sheets for 15 inches	NS15-KBA04

Specifications

NSA-CPU

Item		NSA1_-TX01_-E	NSA-CPU01-E	NSA-CPU02-E	NSA-CPU03-E	NSA-CPU04-E
OS		Preinstalled Windows XP embedded				
Processor		1.3 GHz Intel Celeron-M Processor				
Storage device	Type	DiskOnModule (Flash memory)				
	Capacity	2 GB	2 GB	4 GB	2 GB	4 GB
	Service life (write cycles)	-	NAND flash memory: 100,000 write cycles (to the same block)*1			
Memory	Main memory	512 MB DDR-SDRAM (non-ECC)			1GB DDR-SDRAM (non-ECC)	
	Cache memory	512 KB Level 2 cache memory (built into the CPU)				
Interface	Keyboard	PS/2 keyboard with 6-pin MINI DIN connector				
	Mouse	PS/2 mouse with MINI DIN connector				
	Serial ports	-	2 ports conforming to EIA RS-232C for 9-pin D-SUB male connectors			
	Ethernet	One 10 BASE-T/100 BASE-TX port for an RJ45 connector				
	USB ports	2 USB 2.0/1.1 ports for USB type-A connectors	2 USB 2.0/1.1 ports for USB type-A connectors 2 USB 1.1 for USB type-A connectors			
	Memory Card	1 CF Card slot				
	Video output	-	1 DVI port for DVI-I connector			
	Audio	-	Line-In/Line-Out/Mic-In for mini jack			
Expansion slots		PCI expansion bus, 2 slots				
Special RAS board	External input port	3-pin connector port for the UPS power interruption signal				
	Status LEDindicators	4 (RUN/BATLOW/ERR/DIAG)				

Item		NSA1_-TX01_-E	NSA-CPU01-E	NSA-CPU02-E	NSA-CPU03-E	NSA-CPU04-E
RAS functions	Special RAS board functions	Alive connection monitoring, device restart, timer start, startup and shutdown monitoring, backlight lit time measurement, UPS power interrupt signal output, and logging functions	Alive monitoring, start and shutdown monitoring, shutdown/re-boot, UPS power monitoring, timer start, motherboard monitoring, logging function			
	Motherboard RAS functions	Standard PC RAS info, post error logging, post error retry, CMOS data recovery				
POWER LED indicator		Yes (green)				
Service life		50,000 hours at 40°C	50,000 hours at 30°C			
Battery life	Main board	5 years at 25°C (NSA-BAT01)				
	RAS board	5 years at 25°C (NSA-BAT02)				

*1 Calculate condition
Free area: 500 MB (*excluding OS&Application)
Overwrite data size/time: 0.5 MB/time
Overwrite times/day: 10,000 times/day
MTBF: (500 MB *100,000 times) / (0.5 MB *10,000 times/day) = 10,000 days = 27 years

NSA-TX/TY

Item		NSA1_-TX01_-E	NSA-TX151	NSA-TY171
Display panel	Type	TFT color LCD		
	Size	12.1 or 15 inches	15.0 inches	17.0 inches
	Resolution	1024×768 dots		1280×1024 dots
	Contrast	300 cd/m^2 (typcial)	270 cd/m^2 (typcial)	200 cd/m^2 (typcial)
	Viewing angle	130° left to right, 90° up and down		
	Colors displayed	262,144		
Backlight	Type	2 CCFL		4 CCFL
	Contrast adjustment	Three-level software adjustment*1	10 level adjustment by rotary switch	
	Backlight not lit detection	The software reads the lamp burnout detection signal from the inverter*2	-	-
	Service life	50,000 hours min.*3		
Touch panel	Type	Analog resistive type		
	Effective input area Size in mm (H×W)	12 inches: 185.5×247 15 inches: 229×305	229×305	272×340
	Operating service life	10,000,000 operations (with non-stop key stroking using fingers to input) 100,000 characters (with non-stop character entry using a stylus to input)		
Interface	USB ports	2 USB 2.0/1.1 ports for USB type-A connectors	3 USB1.1 ports for USB type-A connectors (2 on front side) 1 USB1.1 port (for upstream) for USB type-B connector	
	Video Input	-	1 DVI for DVI-D connector	
POWER LED indicator		Yes (green)		
Service life		50,000 hours at 40°C*4	50,000 hours at 30°C	

*1 The contrast cannot be adjusted significantly.
*2 It is not the service life, but rather lamp failure due to hardware problems such as a broken wire that is detected. Backlight not lit detection means both backlight lamps have burnt out.
*3 The service life is a guideline for maximum contrast at room temperature with normal humidity and is provided strictly for reference. It varies significantly with the ambient temperature. The service life will be shorter under extreme (high or low) temperature conditions and falls off sharply particularly under low-temperature conditions.
*4 The service life is a guideline that is provided strictly for reference. It varies with factors such as the installation location and operating conditions.

General specifications

Item	NSA1_-TX01_-E	NSA-CPU	NSA-TX151	NSA-TY171
Rated supply voltage	24 VDC			
Allowable supply voltage range	24 VDC, 20.0 VDC to 27.6 VDC (24 VDC ±15%)			
Power consumption	12 inches: 80 W max. 15 inches: 100_W max.	60 W max.	40 W max.	55 W max.
Ambient operating temperature	0 to 50°C*1			
Ambient storage temperature	-10 to 55°C*1	-10 to 60°C	-10 to 60°C	
Ambient operating humidity	10% to 80% with no condensation*1			
Ambient storage humidity	10% to 85% with no condensation*1			
Operating atmosphere	Must be free of corrosive gases. Must be fairly dust free.			
Noise resistance	Conforms to IEC6100-4-4, power supply line: 2 kV			
Vibration resistance (in operation)	Conforms to JIS C0041, 0.05 mm amplitude at 10 to 55 Hz for 50 min. Each in the X, Y, and Z directions			
Shock resistance (in operation)	Conforms to JIS C0041, 196 m/s^2 three times each in the X, Y, and Z directions			
Degree of protection	Front panel: IP65 or the equivalent (display side only)*1	–	IP65F (front panel oil protection)*1	
Weight	12 inches: 5 kg max. 15 inches: 7 kg max.	4 kg max.	6 kg max.	7 kg max.
Dimensions in mm (HxWxD)	12 inches: 264×322×100 15 inches: 312×384×108	233x308x76.5	328x404x57	371x436x57

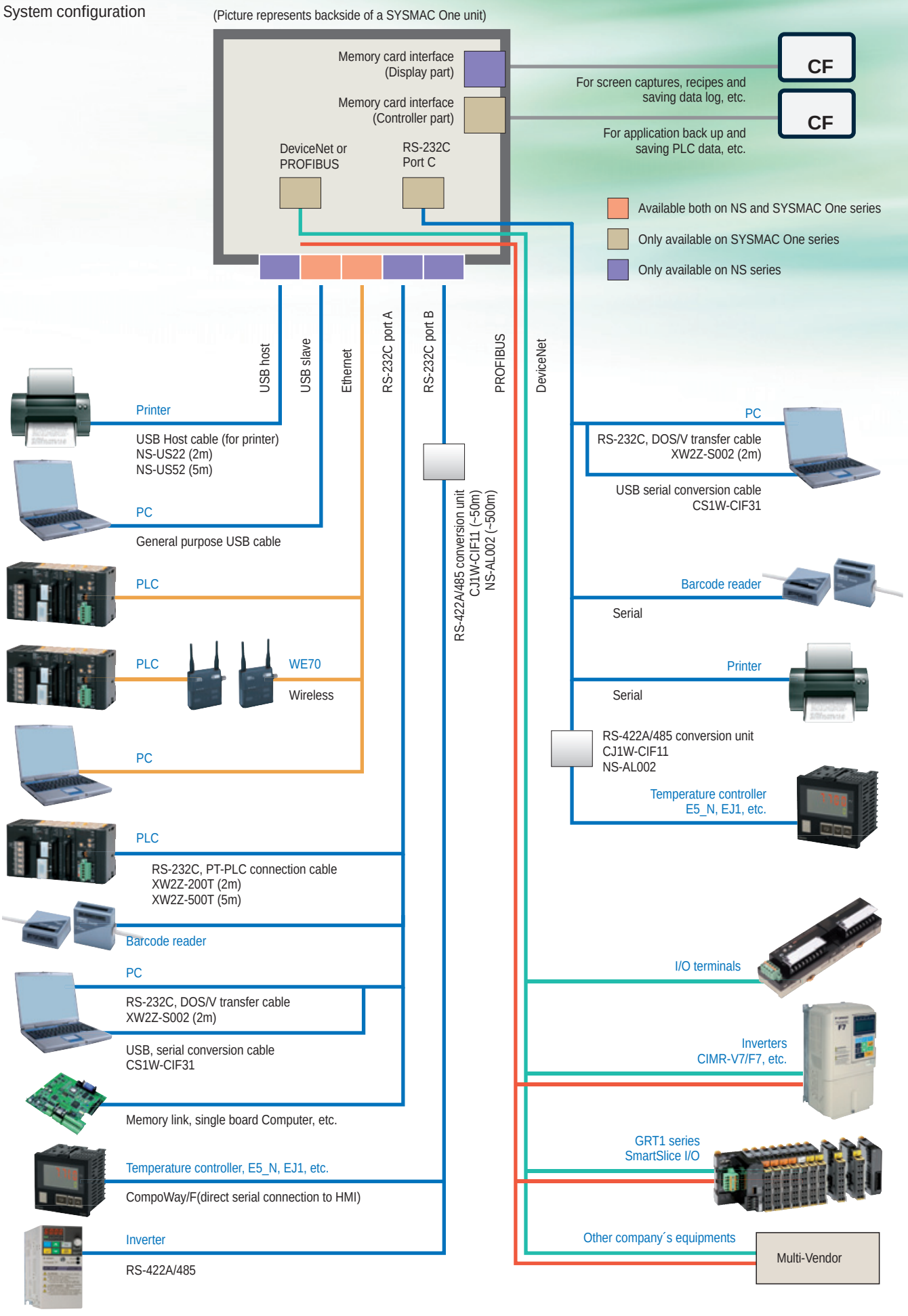
*1 See user manual V233-E1

Selection table

	HMI & Control with SYSMAC One			
Model	**NSJ12**	**NSJ10**	**NSJ8**	**NSJ5**
Type of Display	12.1 inch colour TFT	10.4 inch colour TFT	8.4 inch colour TFT	5.7 inch colour TFT or STN
Display Size / Resolution	246×184.5 mm (800×600 pixels)	215.5×162.4 mm (640×480 pixels)	170.9×128.2 mm (640×480 pixels)	117.2×88.4 mm (320×240 pixels)
Control	CJ1G-CPU45H; 60k-steps program memory, 128k-words data memory, logic instruction time 0.04 µs	CJ1G-CPU45H; 60k-steps program memory, 128k-words data memory, logic instruction time 0.04 µs	CJ1G-CPU45H; 60k-steps program memory, 128k-words data memory, logic instruction time 0.04 µs CJ1M-CPU13; 20k-steps program memory, 32k-words data memory, logic instruction time 0.04 µs	CJ1G-CPU45H; 60k-steps program memory, 128k-words data memory, logic instruction time 0.04 µs CJ1M-CPU13; 20k-steps program memory, 32k-words data memory, logic instruction time 0.04 µs
Communication	DeviceNet Master/Slave or PROFIBUS Master and optional Ethernet interface	DeviceNet Master/Slave or PROFIBUS Master and optional Ethernet interface	DeviceNet Master/Slave or PROFIBUS Master and optional Ethernet interface	DeviceNet Master/Slave or PROFIBUS Master and optional Ethernet interface
Expansion (1 board max.)	Ethernet, Controller Link, I/O extension	Ethernet, Controller Link, I/O extension	Ethernet, Controller Link, I/O extension	Ethernet, Controller Link, I/O extension
Size in mm (HxWxD)	Without expansion unit 241×315×73.3 With expansion unit 241×315×89.3	Without expansion unit 241×315×73.3 With expansion unit 241×315×89.3	Without expansion unit 177×232×73.3 With expansion unit 177×232×89.3	Without expansion unit 195×142×79 With expansion unit 195×142×95
Page	52	52	54	54

	Advanced HMI – NS				
Model	**NS12**	**NS10**	**NS8**	**NS5**	**NS5 Handheld**
Display	12.1 inch TFT colour	10.4 inch TFT colour	8.4 inch TFT colour	5.7 inch Monochrome or STN/TFT colour	5.7 inch STN colour
Resolution	800×600 pixels	640×480 pixels	640×480 pixels	320×240 pixels	320×240 pixels
Nr. of colours	256 (32,768 for image data)	256 (32,768 for image data)	256 (32,768 for image data)	Monochrome 16 greyscales, STN/TFT 256 colours (STN 4096, TFT 32,768 for image data)	256 colours (4096 colours for image data)
Memory Size	60MB screen memory, 32,768 words + 32,768 bits internal memory and 8192 words + 8192 bits retentative memory	60MB screen memory, 32,768 words + 32,768 bits internal memory and 8192 words + 8192 bits retentative memory	60MB screen memory, 32,768 words + 32,768 bits internal memory and 8192 words + 8192 bits retentative memory	20MB screen memory, 32,768 words + 32,768 bits internal memory and 8192 words + 8192 bits retentative memory	20MB screen memory, 32,768 words + 32,768 bits internal memory and 8192 words + 8192 bits retentative memory
Options	Ethernet, Controller Link, Video input board (RGB/Composite)	Ethernet, Controller Link, Video input board (RGB/Composite)	Ethernet, Video input board (RGB/Composite)	Ethernet	RS-232 or RS-422 communication depending on cable
Size in mm (HxWxD)	177×232×48.5	241×315×48.5	177×195×48.5	142×195×54	176×223×70.5 (excl. emergency button)
Page	56	56	56	57	59

System configuration



HMI with integrated PLC and Network interface

The NSJ12 and NSJ10 are combined with a CJ1G-CPU 45H and a DeviceNet or PROFIBUS interface fitted into a compact housing occupying less panel space than the separate products. Programming can be done via the standard high-speed USB port. The SYSMAC One is completely transparent, so the PLC, network (including field devices) and HMI can be accessed via a single port. A great advantage when servicing your machine remotely.

- HMI + PLC with 2 separate CPUs for greater performance and reliability
- Transparent architecture for easy remote maintenance
- Compact design occupying less panel space
- Flexible and cost-effective solution with multiple screen sizes, CPUs & networks
- Smart Active Parts for graphical interaction to field devices

Ordering Information

Type					Order Code
SYSMAC One 12.1" TFT	CJ1G-CPU45H	PROFIBUS	with Ethernet	Black	NSJ12-TS01B-G5P
				Ivory	NSJ12-TS01-G5P
SYSMAC One 12.1" TFT	CJ1G-CPU45H	PROFIBUS	no Ethernet	Black	NSJ12-TS00B-G5P
				Ivory	NSJ12-TS00-G5P
SYSMAC One 10" TFT	CJ1G-CPU45H	PROFIBUS	with Ethernet	Black	NSJ10-TV01B-G5P
				Ivory	NSJ10-TV01-G5P
SYSMAC One 10" TFT	CJ1G-CPU45H	PROFIBUS	no Ethernet	Black	NSJ10-TV00B-G5P
				Ivory	NSJ10-TV00-G5P

Type					Order Code
SYSMAC One 12.1" TFT	CJ1G-CPU45H	DeviceNet	with Ethernet	Black	NSJ12-TS01B-G5D
				Ivory	NSJ12-TS01-G5D
SYSMAC One 12.1" TFT	CJ1G-CPU45H	DeviceNet	no Ethernet	Black	NSJ12-TS00B-G5D
				Ivory	NSJ12-TS00-G5D
SYSMAC One 10" TFT	CJ1G-CPU45H	DeviceNet	with Ethernet	Black	NSJ10-TV01B-G5D
				Ivory	NSJ10-TV01-G5D
SYSMAC One 10" TFT	CJ1G-CPU45H	DeviceNet	no Ethernet	Black	NSJ10-TV00B-G5D
				Ivory	NSJ10-TV00-G5D

Note: For the accessories, please refer to page 60

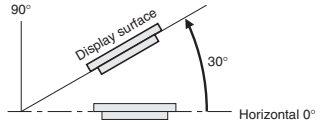
Specifications

Item		NSJ12-TS0_-G5D	NSJ10-TV0_-G5D
Supply voltage		24 VDC	
Allowable supply voltage range		20.4 to 27.6 VDC (24 VDC ±15%)	
Power consumption		30 W max.	
Current consumption		Controller Section Internal 5 V: 500 mA max. DeviceNet Section Internal 5 V: 200 mA max., External 24 V: 18 mA max.	
Inrush current *1		At 24 VAC: 10 A/20 ms max. for cold start at room temperature	
Ambient operating temperature (depending on angle of display surface off horizontal) *2		90° to 60°: 0 to 50°C 60° to 30°: 0 to 45°C 30° to 0°: Use prohibited	
Ambient storage temperature		-20 to 60°C	
Ambient operating humidity		0 to 40°C: 35% to 85% (with no condensation) 40 to 50°C: 35% to 60% (with no condensation)	
Ambient operating environment		No corrosive gases	
Insulation resistance		20 MΩ min. (at 100 VDC) between DC external and GR terminals	
Dielectric strength		800 VDC for 1 min between DC external and GR terminals, leakage current: 10 mA max.	
Noise immunity		2 kV on power supply line (conforming to IEC 61000-4-4)	
Vibration resistance (during operation)		10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y and Z directions for 80 minutes	
Shock resistance (during operation)		147 m/s^2, 3 times each in X, Y and Z directions	
External dimensions in mm (W×H×D)	Without Expansion Unit	315x241x73.3	
	With Expansion Unit	315x241x89.3	
Panel output dimensions		302^{+1}_{0}×228^{+1}_{0} mm (W×H) Panel thickness: 1.6 to 4.8	
Grounding		100 Ω or less	
Weight		2.7 kg max.	2.5 kg max.
Degree of protection		Front operating panel: Equivalent to IP65F and NEMA4 *3	

Item	NSJ12-TS0_-G5D	NSJ10-TV0_-G5D
Battery life	5 years (at 25°C) The SRAM and RTC will be backed up for 5 days after the battery runs low (i.e., after the indicator lights orange). The SRAM and RTC will be backed up by a super capacitor for 5 minutes after removing the old battery (i.e., after turning ON power after 5 minutes).	
International standards	Conforms to cULus and EC Directives.	

*1 A delay circuit that charges a capacitor is used to limit the inrush current. If a hot start is performed when the power supply has been OFF only a short period of time, the capacitor will still be charged and the inrush current specified above will be exceeded by up to approximately five times the specified value. When selecting fuses or breakers for external circuits, allow sufficient margin in the melting temperatures, detection characteristics, and inrush current.

*2 Display angles off horizontal are as follows:



*3 May not be applicable in locations with long-term exposure to oil.

HMI with integrated PLC and Network interface

The NSJ8 and NSJ5 are combined either with a CJ1G-CPU 45H or with a low-cost CJ1M-CPU13 PLC and a DeviceNet or PROFIBUS interface. It is fitted into a compact housing occupying less panel space than the separate products. Programming can be done via the standard high-speed USB port. The SYSMAC One is completely transparent, so the PLC, network (including field devices) and HMI can be accessed via a single port. A great advantage when servicing your machine remotely.

- HMI + PLC with 2 separate CPUs for greater performance and reliability
- Transparent architecture for easy remote maintenance
- Compact design taking up less panel space
- Flexible and cost effective solution with multiple screen sizes, CPUs & networks
- Smart Active Parts for for graphical interaction to field devices

Ordering Information

Type					Order Code
SYSMAC One 8.4" TFT	CJ1G-CPU45H	PROFIBUS	with Ethernet	Black	NSJ8-TV01B-G5P
				Ivory	NSJ8-TV01-G5P
SYSMAC One 8.4" TFT	CJ1G-CPU45H	PROFIBUS	no Ethernet	Black	NSJ8-TV00B-G5P
				Ivory	NSJ8-TV00-G5P
SYSMAC One 5.7" TFT	CJ1G-CPU45H	PROFIBUS	with Ethernet	Black	NSJ5-TQ01B-G5P
				Ivory	NSJ5-TQ01-G5P
SYSMAC One 5.7" TFT	CJ1G-CPU45H	PROFIBUS	no Ethernet	Black	NSJ5-TQ00B-G5P
				Ivory	NSJ5-TQ00-G5P
SYSMAC One 5.7" STN	CJ1G-CPU45H	PROFIBUS	with Ethernet	Black	NSJ5-SQ01B-G5P
				Ivory	NSJ5-SQ01-G5P
SYSMAC One 5.7" STN	CJ1G-CPU45H	PROFIBUS	no Ethernet	Black	NSJ5-SQ00B-G5P
				Ivory	NSJ5-SQ00-G5P
SYSMAC One 8.4" TFT	CJ1M-CPU13	PROFIBUS	with Ethernet	Black	NSJ8-TV01B-M3P
				Ivory	NSJ8-TV01-M3P
SYSMAC One 8.4" TFT	CJ1M-CPU13	PROFIBUS	no Ethernet	Black	NSJ8-TV00B-M3P
				Ivory	NSJ8-TV00-M3P
SYSMAC One 5.7" TFT	CJ1M-CPU13	PROFIBUS	with Ethernet	Black	NSJ5-TQ01B-M3P
				Ivory	NSJ5-TQ01-M3P
SYSMAC One 5.7" TFT	CJ1M-CPU13	PROFIBUS	no Ethernet	Black	NSJ5-TQ00B-M3P
				Ivory	NSJ5-TQ00-M3P
SYSMAC One 5.7" STN	CJ1M-CPU13	PROFIBUS	with Ethernet	Black	NSJ5-SQ01B-M3P
				Ivory	NSJ5-SQ01-M3P
SYSMAC One 5.7" STN	CJ1M-CPU13	PROFIBUS	no Ethernet	Black	NSJ5-SQ00B-M3P
				Ivory	NSJ5-SQ00-M3P

Type					Order Code
SYSMAC One 8.4" TFT	CJ1G-CPU45H	DeviceNet	with Ethernet	Black	NSJ8-TV01B-G5D
				Ivory	NSJ8-TV01-G5D
SYSMAC One 8.4" TFT	CJ1G-CPU45H	DeviceNet	no Ethernet	Black	NSJ8-TV00B-G5D
				Ivory	NSJ8-TV00-G5D
SYSMAC One 5.7" TFT	CJ1G-CPU45H	DeviceNet	with Ethernet	Black	NSJ5-TQ01B-G5D
				Ivory	NSJ5-TQ01-G5D
SYSMAC One 5.7" TFT	CJ1G-CPU45H	DeviceNet	no Ethernet	Black	NSJ5-TQ00B-G5D
				Ivory	NSJ5-TQ00-G5D
SYSMAC One 5.7" STN	CJ1G-CPU45H	DeviceNet	with Ethernet	Black	NSJ5-SQ01B-G5D
				Ivory	NSJ5-SQ01-G5D
SYSMAC One 5.7" STN	CJ1G-CPU45H	DeviceNet	no Ethernet	Black	NSJ5-SQ00B-G5D
				Ivory	NSJ5-SQ00-G5D

Type					Order Code
SYSMAC One, 8.4" TFT	CJ1M-CPU13	DeviceNet	with Ethernet	Black	NSJ8-TV01B-M3D
				Ivory	NSJ8-TV01-M3D
SYSMAC One, 8.4" TFT	CJ1M-CPU13	DeviceNet	no Ethernet	Black	NSJ8-TV00B-M3D
				Ivory	NSJ8-TV00-M3D
SYSMAC One, 5.7" TFT	CJ1M-CPU13	DeviceNet	with Ethernet	Black	NSJ5-TQ01B-M3D
				Ivory	NSJ5-TQ01-M3D
SYSMAC One, 5.7" TFT	CJ1M-CPU13	DeviceNet	no Ethernet	Black	NSJ5-TQ00B-M3D
				Ivory	NSJ5-TQ00-M3D
SYSMAC One, 5.7" STN	CJ1M-CPU13	DeviceNet	with Ethernet	Black	NSJ5-SQ01B-M3D
				Ivory	NSJ5-SQ01-M3D
SYSMAC One, 5.7" STN	CJ1M-CPU13	DeviceNet	no Ethernet	Black	NSJ5-SQ00B-M3D
				Ivory	NSJ5-SQ00-M3D

Function	CJ1G-CPU45H	CJ1M-CPU13
UM capacity	60 Ksteps	20 Ksteps
I/O	1,280 points	640 points
Extended data memory	32 Kwords × 3 banks	–
EM file memory	Yes	–
Maximum number of Expansion Racks	3	1
FB program memory capacity	1024 KB	256 KB
Maximum number of FB definitions	1,024	128
Maximum number of FB instances	2,048	256
Variable table sizes	128 KB	64 KB

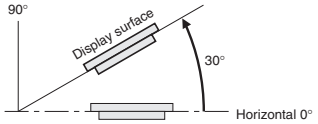
Note: For the accessories, please refer to page 60

Specifications

Item		NSJ8-TV0_-G5D NSJ8-TV0_-M3D	NSJ5-TQ0_-G5D NSJ5-SQ0_-G5D NSJ5-TQ0_-M3D NSJ5-SQ0_-M3D
Supply voltage		24 VDC	
Allowable supply voltage range		20.4 to 27.6 VDC (24 VDC ±15%)	
Power consumption		30 W max.	SQ0_: 21 W max. TQ0_: 22 W max.
Current consumption		Controller Section Internal 5 V: 500 mA max. DeviceNet Section Internal 5 V: 200 mA max., External 24 V: 18 mA max.	
Inrush current *1		At 24 VAC: 10 A/20 ms max. for cold start at room temperature	
Ambient operating temperature (depending on angle of display surface off horizontal) *2		90° to 60°: 0 to 50°C 60° to 30°: 0 to 45°C 30° to 0°: Use prohibited	90° to 30°: 0 to 50°C 30° to 0°: 0 to 40°C
Ambient storage temperature		-20 to 60°C	
Ambient operating humidity		0 to 40°C: 35% to 85% (with no condensation) 40 to 50°C: 35% to 60% (with no condensation)	
Ambient operating environment		No corrosive gases	
Insulation resistance		20 MΩ min. (at 100 VDC) between DC external and GR terminals	
Dielectric strength		800 VDC for 1 min between DC external and GR terminals, leakage current: 10 mA max.	
Noise immunity		2 kV on power supply line (conforming to IEC 61000-4-4)	
Vibration resistance (during operation)		10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y and Z directions for 80 minutes	
Shock resistance (during operation)		147 m/s^2, 3 times each in X, Y and Z directions	
External dimensions in mm (W×H×D)	Without Expansion Unit	232×177×73.3	195×142×79
	With Expansion Unit	232×177×89.3	195×142×95
Panel output dimensions		$220.5^{+0.50}_{0}$×$165.5^{+0.50}_{0}$ mm (W×H) Panel thickness: 1.6 to 4.8	$184^{+0.50}_{0}$×$131^{+0.50}_{0}$ mm (W×H) Panel thickness: 1.6 to 4.8
Grounding		100 Ω or less	
Weight		2.0 kg max.	1.1 kg max.
Degree of protection		Front operating panel: Equivalent to IP65F and NEMA4*3	
Battery life		5 years (at 25°C) The SRAM and RTC will be backed up for 5 days after the battery runs low (i.e., after the indicator lights orange). The SRAM and RTC will be backed up by a super capacitor for 5 minutes after removing the old battery (i.e., after turning ON power after 5 minutes).	
International standards		Conforms to cULus and EC Directives.	

*1 A delay circuit that charges a capacitor is used to limit the inrush current. If a hot start is performed when the power supply has been OFF only a short period of time, the capacitor will still be charged and the inrush current specified above will be exceeded by up to approximately five times the specified value. When selecting fuses or breakers for external circuits, allow sufficient margin in the melting temperatures, detection characteristics, and inrush current.

*2 Display angles off horizontal are as follows:



*3 May not be applicable in locations with long-term exposure to oil.

12''/10''/8'' TFT screen

These models offer 256 colours (32,768 for image data), two USB connections for downloading or printing and optional Ethernet, Controller Link and Video board connections. One great advantage with the NS is that you can make use of Omron unique Smart Active Parts (SAP) that save you time when configuring, commissioning and maintaining your machine. SAP are pre-programmed, pre-tested visualisation objects with embedded communication code, bringing 'drag and drop' simplicity to HMI design.

- Perfect clarity and fast switching screens
- Extremely long backlight life (up to 50,000 hours)
- Support all European languages, Asian and Cyrillic
- Easy data logging on compact flash
- Large Memory size (60 MB)
- Support for several non-Omron PLC's

Ordering information

Type			Order Code
TFT, 12'', 800 x 600 pixels	no Ethernet	Black	NS12-TS00B-V2
		Ivory	NS12-TS00-V2
	with Ethernet	Black	NS12-TS01B-V2
		Ivory	NS12-TS01-V2
TFT, 10'', 640 x 480 pixels	no Ethernet	Black	NS10-TV00B-V2
		Ivory	NS10-TV00-V2
	with Ethernet	Black	NS10-TV01B-V2
		Ivory	NS10-TV01-V2
TFT, 8.4'', 640 x 480 pixels	no Ethernet	Black	NS8-TV00B-V2
		Ivory	NS8-TV00-V2
	with Ethernet	Black	NS8-TV01B-V2
		Ivory	NS8-TV01-V2

Note: For the accessories, please refer to page 60

Specifications

Item	NS12	NS10	NS8
Display type	TFT 12 inch colour	TFT 10 inch colour	TFT 8 inch colour
Size in mm (HxWxD)	241×315×48.5	241×315×48.5	177×232×48.5
Effective display area	246×184.5 mm (800×600 pixels)	215.2×162.4 mm (640×480 pixels)	170.9×128.2 (640×480 pixels)
Display colour	256 colours Image data: 32,768 colours		
Power supply	24 V DC ±15%		
Touch panel	38 vertical × 50 horizontal	30 vertical x 40 horizontal	24 vertical x 32 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 × 37 lines	80 characters × 30 lines	80 characters × 30 lines
No. of registered screens	3,999 screens max. (depending on screen contents)		
Screen data capacity (standard)	60 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	50,000 hours minimum	40,000 hours minimum
Multi-Vendor support	Supported for several non-Omron PLCs. Please contact Omron for more information.		
Video board (composite/RGB)	Supported		
Power consumption	25 W max.		15 W max.
Ambient operating temperature	0 to 50°C*1		
Storage temperature	-20 to 60°C*1		
Ambient operating humidity	35% to 85% (0 to 40°C) with no condensation 35% to 60% (40 to 50°C) with no condensation		
Operating environment	No corrosive gases		
Noise immunity	Conforms to IEC61000-4-4, 2 KV (power lines)		
Vibration resistance (during operation)	10 to 57 Hz with 0.075 mm amplitude and 57 to 150 Hz with 9.8 m/s^2 acceleration for 30 min in each of X,Y, and Z directions		
Shock resistance (during operation)	147 m/s^2 3 times in each of X, Y, and Z directions		
Weight	2.5 kg max.		2.0 kg max.
Enclosure rating	Front panel: Equivalent to IP65F (NEMA4)*1		

*1 See manual for details.

5.7'' screen in colour and monochrome

This series consists of Monochrome models with 16 grey scales and STN/TFT models with up to 32,768 colours. It is equipped with a USB connection for project download/ upload and the possibility to communicate over Ethernet. One great advantage with the NS is that you can make use of Omron unique Smart Active Parts (SAP) that save you time when configuring, commissioning and maintaining your machine. SAP are pre-programmed, pre-tested visualisation objects with embedded communication code, bringing 'drag and drop' simplicity to HMI design.

- Perfect clarity and fast switching screens
- Extremely long backlight life (up to 75,000 hours)
- Support all European languages, Asian and Cyrillic
- Easy data logging on compact flash
- Large Memory size (20 MB)
- Support for several non-Omron PLC's

Ordering information

Type				Order Code
NS5-TQ	TFT, 5.7'', 320×240 pixels	no Ethernet	Black	NS5-TQ00B-V2
			Ivory	NS5-TQ00-V2
		with Ethernet	Black	NS5-TQ01B-V2
			Ivory	NS5-TQ01-V2
NS5-SQ	STN, 5.7'', 320×240 pixels	no Ethernet	Black	NS5-SQ00B-V2
			Ivory	NS5-SQ00-V2
		with Ethernet	Black	NS5-SQ01B-V2
			Ivory	NS5-SQ01-V2
NS5-MQ	STN, Monochrome 5.7'', 320×240 pixels	no Ethernet	Black	NS5-MQ00B-V2
			Ivory	NS5-MQ00-V2
		with Ethernet	Black	NS5-MQ01B-V2
			Ivory	NS5-MQ01-V2

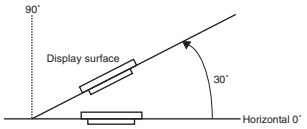
Note: For the accessories, please refer to page 60

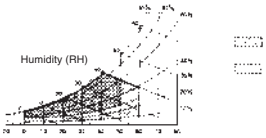
Specifications

Item	NS5-TQ	NS5-SQ	NS5-MQ
Display type	TFT 5.7 inch colour display	STN 5.7 inch colour display	STN 5.7 inch monochrome display
Size in mm (HxWxD)	142×195×54		
Effective display area	117.2×88.4 mm (320×240 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	15 vertical × 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)	80 characters x 30 lines		
No. of registered screens	3,999 screens max. (depending on screen contents)		
Screen data capacity (standard)	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	–		
Backlight life	75,000 hours minimum		50,000 hours minimum
Multi-Vendor support	Supported for several non-Omron PLCs. Please contact Omron for more information.		
Video board (composite/RGB)	–		
Power consumption	15 W max.		
Ambient operating temperature	0 to 50°C*1 *2 *3		
Storage temperature	-20 to 60°C		
Ambient operating humidity	35% to 85% (0 to 40°C) with no condensation 35% to 60% (40 to 50°C) with no condensation		
Operating environment	No corrosive gases		
Noise immunity	Conforms to IEC61000-4-4, 2 KV (power lines)		
Vibration resistance (during operation)	10 to 57 Hz with 0.075 mm amplitude and 57 to 150 Hz with 9.8 m/s^2 acceleration for 30 min in each of X, Y, and Z directions		
Shock resistance (during operation)	147 m/s^2 3 times in each of X, Y, and Z directions		
Weight	1.0 kg max.		
Enclosure rating	Front panel: Equivalent to IP65F (NEMA4)*4		

*1 The operating temperature is subject to the following restrictions, depending on the mounting angle and whether an Expansion Unit is installed or not.
Without any Expansion Unit Installed: Mounting angle of 0° to 90° less to the horizontal: Operating temperature range of 0 to 50°C

*2 Operate the PT within the temperature and humidity ranges shown in the following diagram.





*3 When a STN LCD display device is used (NS5-SQ-V1/-V2 or NS5-MQ-V2), the display quality will decline (e.g., the contrast ratio will be reduced) if the temperature exceeds 40°C. Also, when the temperature drops, the response speed is lowered due to characteristics of liquid crystals.

*4 May not be applicable in locations with long-term exposure to oil.

NS5 Handheld, suited for use in harsh conditions

The NS series has evolved into a mobile format. Based on the standard 5.7" STN colour version, we can offer a handheld version of the NS series. Offering 10 Function keys for most used functions and with a protection degree of IP65 it is the product to use in harsh environment where freedom of movement is needed.

- 10 Function keys, 4 hardwired for inching
- Emergency switch on front plus enable switch on back of unit
- Well protected against water, IP65
- Compact Flash, Serial and USB interface

Ordering information

Type			Order code
NSH5	STN, 5.7", 320×240 pixels	Black	NSH5-SQR00B-V2

Accessories

Type	Order code
Bracket NS handheld protecting emergency button from accidental activation	NSH5-ATT01
Bracket NS handheld for wall mounting	NSH5-ATT02
Cable NS handheld, RS-422, 10m UL	NSH5-422UL-10M
Cable NS handheld, RS-232, 10m UL	NSH5-232UL-10M
Cable NS handheld, RS-232, 3m UL	NSH5-232UL-3M

Specifications

Display type	STN 5.7 inch colour
Size in mm (HxWxD)	176×223×70.5 (depth excl. emergency button)
Effective display area	117.2×88.4 mm (320×240 pixels)
Display colour	256 colours, Image data: 4,096 colours
Power supply	24 V DC ±15%
Touch panel	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)	80 characters × 30 lines
No. of registered screens	3,999 screens max. (depending on screen contents)
Screen data capacity (standard)	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	–
Backlight life	75,000 hours minimum
Multi-Vendor support	Supported for several non-Omron PLCs. Please contact Omron for more information.
Video board (composite/RGB)	–

Ordering information

Type	Description		Order code
Cable*1	Serial programming cable		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 / PAL, 1 channel RGB	NS-CA002
	Cable to connect NS-CA00_ to Video console unit		F150-VKP (2 m)
			F150-VKP (5 m)
	Controller link interface unit		NS-CLK21
	RS-422A/485 adapter (50 m)		CJ1W-CIF11
	RS-422A adapter (500 m)		NS-AL002
	Anti-reflection sheets (5 sheets)	NS12/10	NS12-KBA04
		NS8	NS7-KBA04
		NS5	NT30-KBA04
	Anti-reflection protective 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.

Category	Basic HMI			
Model	**NT21**	**NT3S**		
Type of Display	5.2 inch STN Monochrome (with blue mode)	4.1 inch STN Monochrome		
Resolution	260×140 pixels	196×64 pixels		
Number of characters	32 characters x 17 lines	32 characters x 8 lines		
Memory	512 KB screen memory	120 KB screen-, 1K-Words data-, 1K-Words retentative-, 64 Words system memory		
Number of screens	3999 max.	65,000 max. (limited by memory)		
Size in mm (HxWxD)	110×190×53.5	77x140x35		
Page	62	63		

Category	Function-key HMI			
Model	**NT11**	**NT2S**		
Type of Display	LED backlight LCD	LED backlight LCD		
Number of F-keys	22	6 or 20 depending on model		
Number of characters	20×4 lines	16×2 lines		
Printer connection	Yes	Depending on model		
Number of screens	250	65,000 (limited by memory)		
Size in mm (HxWxD)	113×218×38.2	6 F-keys 60×109×43 20 F-keys 107×107×43		
Page	64	65		

Proven technology with outstanding reliability

The NT21 is a cost effective product that offers features like two serial ports and blue mode for the LCD.

- Large screen capacity (max. 3999)
- Two serial ports, connect two devices at the same time
- Screen emulation of the PLC programming console
- Alarm/recipe function
- Import of I/O points from CX-Programmer

Ordering information

Type		Order code
STN monochrome	Ivory	NT21-ST121-E
	Black	NT21-ST121B-E

Accessories

Type	Description			Order code
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-MF261
	RS-232C/422A Adapter			NS-AL002
	Connector Kit			XM2S-0911-S003

Software

Type	Order code
NTST Version 4.7	NTZJCAT1EV4
Upgrade NTST Version 4.7	NTZJCAT1EV4S

Specifications

Size in mm (HxWxD)	110×190×58
Effective display area	117×63 mm (260×140 dots)
Type with ethernet	24 VDC +10%/-15%
Function keys	–
Touch panel	7 vertical x 13 horizontal
Obtained standards	UL, CSA, EC Directives,NEMA equivalent
Display graphices	Straight lines, rectangles, polygons, circles, ovals, sector, bitmaps
No. of display characters (standard characters)	16 characters × 8 lines
No. of registered screens	3,999 screens max. (depending on screen contents)
Screen data capacity (standard)	512 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.
Ladder monitor	–
Programming Console function	Supported
Device monitor	–
Barcode reader connection	Supported
Printer connection	–
Multi-Vendor support	Supported for several non-Omron PLCs. *1
Backlight life	50,000 hours average

*1 Please contact Omron for a list of available drivers.

The cost effective face lift

The NT3S is a very affordable touch screen that helps you upgrade your machine to a modern human machine interface. The small NT3S offers features such as multi-language and two serial ports with multi-protocol functionality.

- RS422/485 port available, no need for a converter
- Multi language, use up to 9 languages in a project
- Alarm/Recipe function
- Connect to most third party PLCs and inverters
- Easy and free programming software

Ordering information

Type			Order code
STN monochrome	Programmable	2 x RS-232/CMOS, No RTC, No RS-485	NT3S-ST126B-E
		RS-232/CMOS/485/422 on one port, RS232/CMOS on second port, No RTC	NT3S-ST124B-E
		RS-232/CMOS/485/422 on one port, RS232/CMOS on second port, with RTC	NT3S-ST123B-E
		RS-232/CMOS/485/422 on both ports with RTC	NT3S-ST121B-E

Accessories

Type	Description	Order code
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-SF121/125 and NT3S	mini-peripheral port CJ1/CS1 and CPM2C series, 2 m	NT2S-CN223-V2
NT2S-SF121/125 and NT3S	serial port C-series PLC, 2 m	NT2S-CN232-V1
NT2S-SF121/125 and NT3S	serial port C-series PLC, 5 m	NT2S-CN235-V1
All NT2S and NT3S models	serial programming cable, 2 m	NT2S-CN002

Software

Type	Order code
This software is provided free of charge and features Windows fonts, a Multi language import/export utility, a character map to design your own characters and can be used to place bitmaps in your application.	NTXS

Specifications

Size in mm (HxWxD)	77x140x35
Effective display area	98x35 mm (192 x 64 pixels, 4.1 inch)
Type with ethernet	24 VDC ±15%
Function keys	–
Touch panel	Analog Resistive
Obtained standards	CE, cULus
Display graphices	Rectangle, rounded rectangle, circle, oval, line, bitmaps
No. of display characters (standard characters)	32 characters x 8 lines
No. of registered screens	65,000 max. (limited by memory capacity)
Screen data capacity (standard)	120 KB
Expansion memory	–
Memory card interface	–
Expansion interface	–
Ethernet	–
Internal memory	1 kWords data, 1 kWords retentative, 64 words system memory
Ladder monitor	–
Programming Console function	–
Device monitor	–
Barcode reader connection	–
Printer connection	Supported
Multi-Vendor support	Supported for several non-Omron PLCs *1
Backlight life	LED, min. 50,000 hours

*1 Please contact Omron for a list of available drivers.

HMI with four text lines and 22 F-keys

The NT11 is a Function key HMI with four text lines that can each hold up to 20 characters. It has a parallel printer connection next to a serial port for connection to a PLC. It has a LED backlight that has a life expectancy of at least 50.000 hours.

- Easy programming software.
- Small size and installation depth.
- Customisable F-Keys
- Printer connection.
- Cost effective solution.

Ordering information

Type			Order code
STN monochrome	Ten-key type	Ivory	NT11-SF121-EV1
		Black	NT11-SF121B-EV1

Accessories

Type	Description			Order code
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	Replacement for ivory type (10 sheets)		NT11-SF121-EV1
		Replacement for black type (10 sheets)		NT11-SF121B-EV1

Software

Type	Order code
NTST Version 4.7	NTZJCAT1EV4
Upgrade NTST Version 4.7	NTZJCAT1EV4S

Specifications

Size in mm (HxWxD)	113×218×38.2
Effective display area	100×40mm (160×64 pixels)
Type with ethernet	24 VDC ±15%
Function keys	22 keys
Touch panel	–
Obtained standards	CE, cULus
No. of display characters (standard characters)	20 characters × 4 lines
No. of registered screens	250
Screen data capacity (standard)	32 KB
Expansion memory	–
Memory card interface	–
Expansion interface	–
Ethernet	–
Internal memory	–
Ladder monitor	–
Programming Console function	–
Device monitor	–
Barcode reader connection	–
Printer connection	Supported
Multi-Vendor support	–
Backlight life	50,000 hours average

HMI with two text lines, 6 or 20 F-keys and up to two serial ports

The NT2S is the smallest HMI that we can offer you. It is based on a 16 × 2 lines LCD display with 6 or 20 Function keys. It offers IP65 protection, an optional RTC and printer connection.

- Easy and free programming software.
- Small size and installation depth.
- Real Time Clock (depending on model).
- Printer connection (depending on model).
- Cost effective solution.

Ordering information

Type			Order code
STN monochrome	Programmable	6-key type, Black	NT2S-SF121B-EV2
			NT2S-SF122B-EV2
	PLC controlled		NT2S-SF123B-EV2
	Programmable	20-key type, Black	NT2S-SF125B-E
	PLC controlled		NT2S-SF126B-E
			NT2S-SF127B-E

Accessories

Type	Description	Order code
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
All NT2S and NT3S models	serial programming cable, 2 m	NT2S-CN002

Software

Type	Order code
This software is provided free of charge and features Windows fonts, a Multi language import/export utility, a character map to design your own characters and can be used to place bitmaps in your application.	NTXS

Specifications

Size in mm (H×W×D)	60×109×43 (6 F-keys), 107×107×43 (20 F-keys)
Effective display area	56×11 mm
Type with ethernet	24 VDC ±10% (when applicable)
22 keys	–
Touch panel	–
Obtained standards	CE, cULus
No. of display characters (standard characters)	16 characters x 2 lines
No. of registered screens	65,000 max.
Screen data capacity (standard)	24 KB in Programmable models
Expansion memory	–
Memory card interface	–
Expansion interface	–
Ethernet	–
Internal memory	1 kWords data, 1 kWords retentative memory
Ladder monitor	–
Programming Console function	–
Device monitor	–
Barcode reader connection	–
Printer connection	Supported
Multi-Vendor support	Supported for several non-Omron PLCs. *1
Backlight life	LED, min. 50,000 hours

*1 Please contact Omron for a list of available drivers.