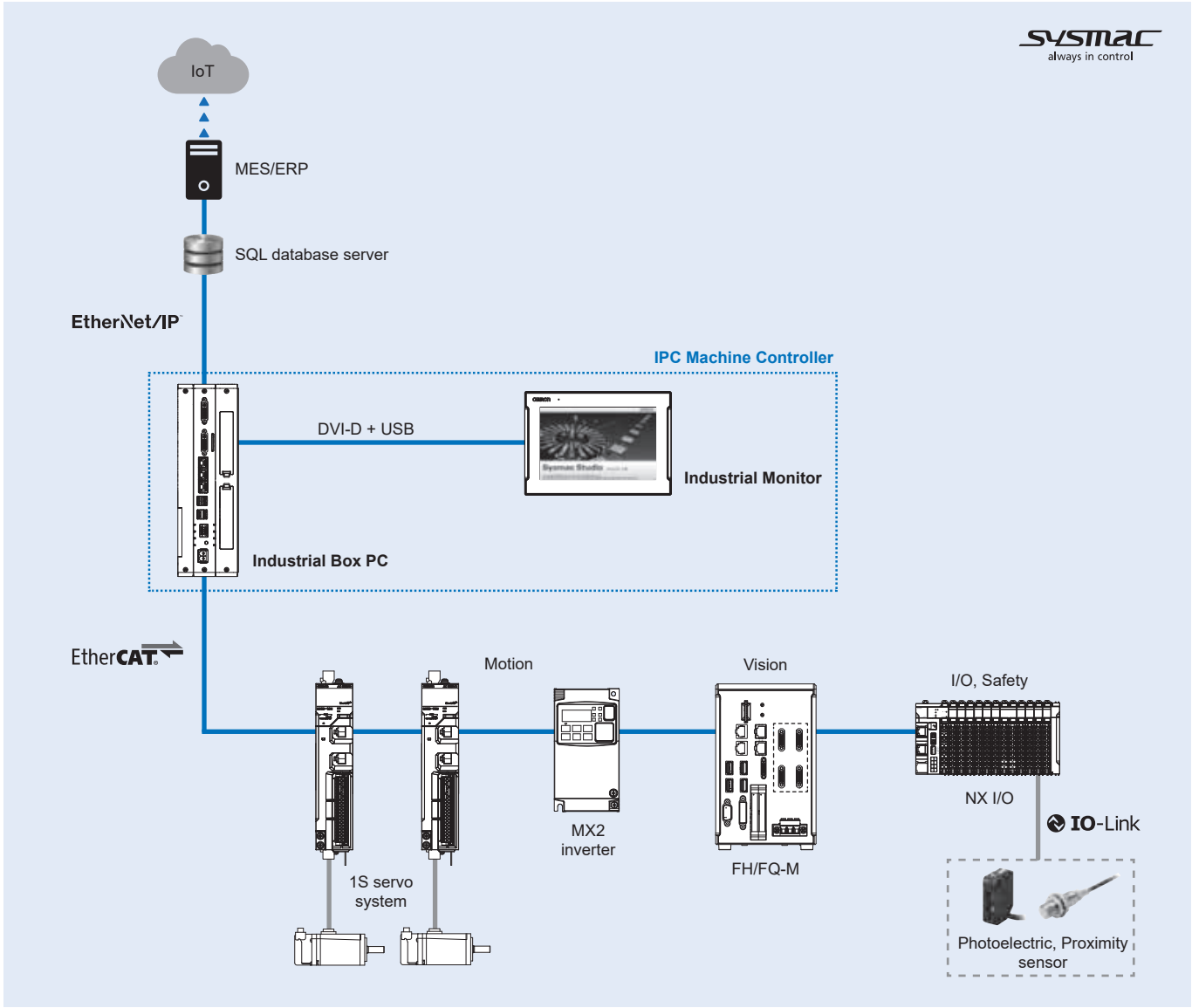
NY5□

IPC Machine Controller

Hybrid controller which combines Sysmac machine control and IT technology

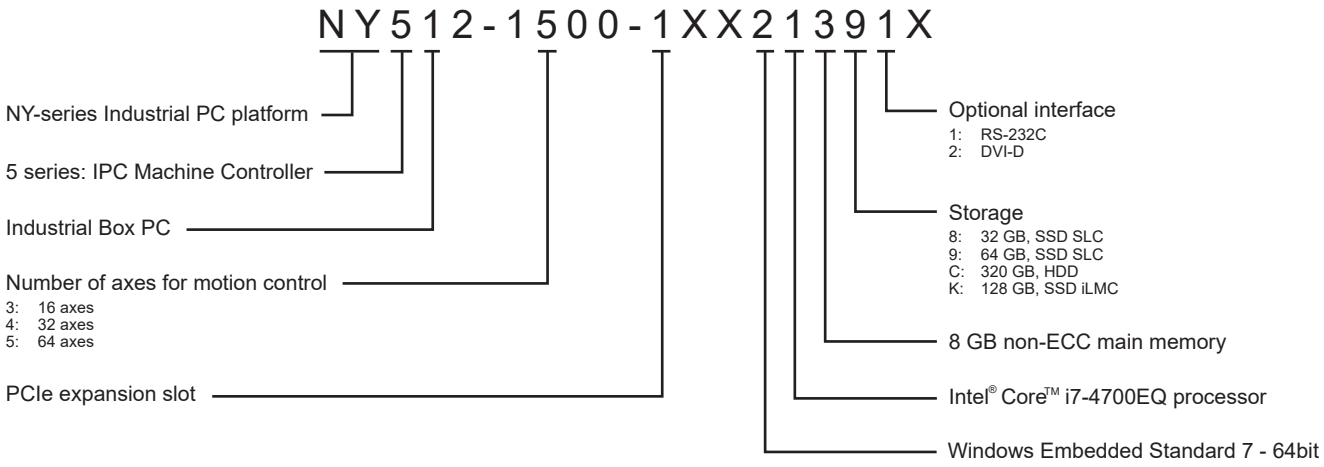
- Intel Core i7 Quad-core processor
- Windows Embedded Standard 7 64-bit
- Open operating system allows running customised software and hardware
- Built-in EtherNet/IP port for your IT systems and machine to machine communication
- Sysmac machine controller inside
- 500 μs system cycle time
- Up to 64 synchronized axes
- Built-in EtherCAT port for up to 192 synchronized slaves

System configuration

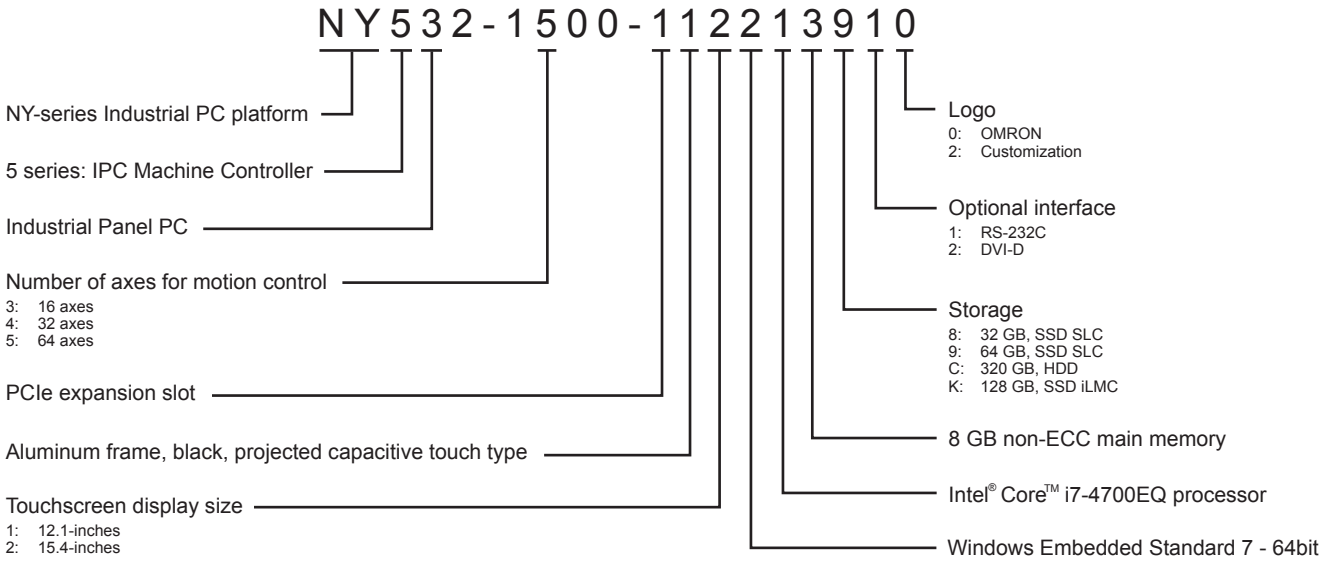


Type designation

Industrial Box PC



Industrial Panel PC (Industrial Box PC + Monitor integrated)



Specifications

General specifications

Model				Industrial Box PC	Industrial Panel PC
Electrical specifications	Rated power supply voltage			24 VDC (20.4 to 28.8 VDC), non-isolated	
	Grounding method			Ground to less than 100 Ω	
	Inrush current			At 24 VDC: 12 A/6 ms max. for cold start at room temperature	
	Overvoltage category			JIS B3502 and IEC 61131-2: Category II	
	EMC immunity level			IEC 61132-2: Zone B	
	RTC accuracy			At ambient temperature of 55ºC: -3.5 to +0.5 min error per month At ambient temperature of 25ºC: -1.5 to +1.5 min error per month At ambient temperature of 0ºC: -3 to +1 min error per month	
	Battery life			5 years at 25ºC (for CJ1W-BAT01 battery)	
	Fan life			8 years continuous operation at 40ºC	
	Power consumption	Max. power consumption including drives and expansions		114 W	132 W
		Industrial PC excluding drives and expansions		81 W	99 W
		Drives	HDD 320 GB	2 W	
			SSD SLC 64 GB	2 W	
			SSD SLC 32 GB	2 W	
			SSD iMLC 128 GB	2 W	
		Expansions	USB	14 W max. ((2 x 500 mA at 5 VDC) + (2 x 900 mA at 5 VDC))	
			PCIe	15 W max.	5 W max.
Environmental specifications	Ambient operating temperature			0 to 55ºC	
	Ambient storage temperature			-20 to 70ºC	
	Ambient operating/storage humidity			10 to 90% with no condensation	
	Operating atmosphere			No corrosive gases	
	Altitude			2,000 m max.	
	Noise immunity			2 kV on power supply line. Conforms to IEC 61000-4-4	
	Vibration resistance (during operation)			Conforms to IEC 60068-2-6: • For a box PC with an SSD: 5 to 8.4 Hz with 3.5 mm single amplitude and 8.4 to 150 Hz with 9.8 m/s^2 for 10 times each in X, Y and Z directions • For a box PC with a HDD the vibration resistance depends on the mounting direction: Book mount 2.5 m/s^2 / Wall mount 4.9 m/s^2	Depends on the storage device: • For a panel PC with only SSD: 5 to 8.4 Hz with 3.5 mm single amplitude and 8.4 to 150 Hz with 9.8 m/s^2 for 10 times each in X, Y and Z directions. Conforms to IEC 60068-2-6 • For a panel PC with one or more HDD the panel PC must be installed in a vibration free environment
	Shock resistance (during operation)			Conforms to IEC 60028-2-27 147 m/s^2, 3 times each in X, Y and Z directions	
	Installation method			Book mount, Wall mount	Mount on panel
	Degree of protection*1			Front of monitor: IP65	
	Pollution degree			2 or less: Conforms to JIS B3502 and IEC 61131-2	
Battery		Life		5 years at 25ºC	
		Model		CJ1W-BAT01	
Fan unit		Life		70,000 hours of continuos operation at 40ºC with 15 to 65% relative humidity	
		Model		NY000-AF00	
LED				PWR, ERR, HDD, RUN	
Applicable standards				EMC Directive (2014/30/EU)	

*1 The Industrial Panel PC may not operate properly in locations subjected to oil splashes for extended periods of time.

Performance specifications

Model				NY5□□-1500□	NY5□□-1400□	NY5□□-1300□
Processing time	Instruction execution time	LD instruction		0.33 ns		
		Math instructions (for long real data)		1.2 ns or more		
Programming	Program capacity*1	Size		40 MB		
		POU definition		3,000		
		POU instance		24,000		
	Variables capacity	No retain attribute		Size: 64 MB Number: 180,000		
		Retain attribute		Size: 4 MB Number: 40,000		
	Data type	Number		4,000		
Unit configuration	Maximum number of NX unit on the system			4,096 (on NX EtherCAT communication coupler unit)		
Motion control	Number of controlled axes	Number of axes		64	32	16
		Linear interpolation control		4 axes max. per axes group		
		Circular interpolation control		2 axes per axes group		
	Number of axes groups			32 groups max.		
	Position units			Pulses, millimeters, micrometers, nanometers, degrees and inches		
	Override factors			0.00% or 0.01% to 500.00%		
	Motion control period			Same as process data communications period of EtherCAT communications		
	Cams	Number of cam data points		65,535 points max. per cam table / 1,048,560 points max. for all cam tables		
		Number of cam tables		640 tables max.		
Communications	Built-in EtherNet/IP port	Number of ports		1		
		Physical layer		10BASE-T, 100BASE-TX or 1000BASE-T		
		Frame length		1,514 bytes max.		
		Media access method		CSMA/CD		
		Modulation		Baseband		
		Topology		Star		
		Baud rate		1 Gbps (1000BASE-T)		
		Transmission media		STP (shielded, twisted pair) cable of Ethernet category 5, 5e or higher		
		Transmission distance		100 m max. (distance between Ethernet switch and node)		
		Cascade connections number		There are no restrictions if an switching hub is used		
		CIP service: Tag data links (cyclic communications)	Number of connections	128 max.		
			Packet interval*2	1 to 10,000 ms in 1.0-ms increments. Can be set for each connection		
			Permissible communications band*3	20,000 pps (including heartbeat)		
			Number of tag sets	128 max.		
			Tag types	Network variables		
			Number of tags per connections	8 (7 tags if controller status is included in the tag set.)		
			Number of tags	256 max.		
			Link data size per node	184,832 bytes (total size for all tags.)		
			Data size per connection	1,444 bytes max.		
			Number of registrable tag sets	128 max. (1 connection = 1 tag set)		
			Tag set size	1,444 bytes max. (two bytes are used if controller status is included in the tag set.)		
			Multi-cast packet filter*4	Supported		
		CIP message service: Explicit messages	Class 3 (number of connections)	64 total (clients plus server)		
			UCMM (non-connection type)	Number of clients that can communicate at one time: 32 max. Number of servers that can communicate at one time: 32 max.		
		Number of TCP sockets		30 max.		
	Built-in EtherCAT port	Number of ports		1		
		Communications standard		IEC 61158, Type 12		
		EtherCAT master specifications		Class B (feature pack motion control compliant)		
		Physical layer		100BASE-TX		
		Modulation		Baseband		
		Baud rate		100 Mbps (100BASE-TX)		
		Duplex mode		Automatic		
		Topology		Line, daisy chain and branching		
		Transmission media		Twisted-pair cable of category 5 or higher (double-shielded straight cable with aluminum tape and braiding)		

Model				NY5□□-1500□	NY5□□-1400□	NY5□□-1300□
Communications	Built-in EtherCAT port	Transmission distance		Distance between nodes: 100 m max.		
		Number of slaves		192 max.		
		Process data size		Inputs/Outputs: 5,736 bytes max.(the maximum number of process data frames is 4)		
		Process data size per slave		Inputs/Outputs: 1,434 bytes max.		
		Communications cycle		500 μs to 8 ms in 250 μs increments		
		Sync jitter		1 μs max.		
Internal clock				At ambient temperature of 55°C: –3.5 to +0.5 min error per month At ambient temperature of 25°C: –1.5 to +1.5 min error per month At ambient temperature of 0°C: –3 to +1 min error per month		
Main system	CPU	Processor type		Intel® Core™ i7-4700EQ		
		Cores / Threads		4 / 8		
		Processor base frequency		2.4 GHz		
		Max. turbo frequency		3.4 GHz		
		Cache		6 MB		
		Cooling details		Requires active cooling (fan)		
	Memory	Size		8 GB		
		Type		DDR3L (non ECC)		
	Trusted platform module (TPM)			• Ensure the integrity of the platform • Disk encryption • Password protection and other uses of encryption		
	Graphics controller			Intel® HD Graphics. Up to two independent screens. Intel® HD Graphics 4600		
	Watchdog			Yes		
Operating system	Windows OS			Windows Embedded Standard 7 - 64 bit		
Storage devices	Drives	Hard disk drive		• HDD - 320 GB • Serial ATA 3.0		
		Solid state drive	SLC type	• SLC type - long life SSD • 32 and 64 GB models • Serial ATA 3.1		
			MLC type	• MLC type - industrial MLC • 128 GB • Serial ATA 3.1		
	Drive bay			• 2 drive slot • HDD or SSD		
Connectors	Power connector			24 VDC		
	I/O connector			• 2 inputs: Power ON/OFF input, UPS mode input • 1 output: Power status output		
	USB connectors	USB 3.0		• 2 ports • 900 mA max. current • 3 m max. cable length		
		USB 2.0		• 2 ports • 500 mA max. current • 5 m max. cable length		
	Ethernet connectors	Number of ports		3		
		Physical layer		10BASE-T, 100BASE-TX, 1000BASE-T		
	DVI-I connector	Video interface		Digital or analog		
		Resolution		Up to 1,920 x 1,200 pixels at 60 Hz		
	Optional connectors	DVI-D connector	Video interface	Digital		
			Resolution	Up to 1,920 x 1,200 pixels at 60 Hz		
		RS-232C connector		Standard SUBD9 connector (non-isolated)		
PCIe card slot	Configuration			x4 (4 lanes) up to Gen 3		
	Card height			Standard height cards, 4.20" (106.7 mm)*5		
	Card length			Half-length cards, 6.6" (167.65 mm)		

*1 This is the capacity for the execution objects and variable tags (including variable names).
*2 Data will be refreshed at the set interval, regardless of the number of nodes.
*3 "pps" means packet per second, i.e., the number of communication packets that can be sent or received in one second.
*4 As the EtherNet/IP port implements the IGMP client, unnecessary multi-cast packets can be filtered by using a switching hub that supports IGMP Snooping.
*5 Low profile cards, 2.536" (64.4 mm) are not supported.

Function specifications

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Tasks	Function	Function		I/O refreshing and the user program are executed in units that are called tasks. Tasks are used to specify execution conditions and execution priority.
		Periodically executed tasks		Maximum number of primary periodic tasks: 1 Maximum number of periodic tasks: 3
		Conditionally executed tasks		Maximum number of even tasks: 32 When active even task instruction is executed or when condition expression for variable is met.
Programming	POUs (program organization units)	Programs		POUs that are assigned to tasks.
		Function blocks		POUs that are used to create objects with specific conditions.
		Functions		POUs that are used to create an object that determine unique outputs for the inputs, such as for data processing.
	Programming languages	Types		Ladder diagrams[1] and structured text (ST).
	Namespaces			A concept that is used to group identifiers for POU definitions.
	Variables	External access of variables		Network variables (the function which allows access from the HMI, host computers or other controllers)
	Data types	Basic data types		BOOL, BYTE, WORD, DWORD, LWORD, INT, SINT, DINT, LINT, UINT, USINT, UDINT, ULINT, REAL, LREAL, TIME (durations), DATE, TIME_OF_DAY, DATE_AND_TIME and STRING (text strings)
		Derivative data types		Structures, unions, enumerations
		Structures	Function	A derivative data type that groups together data with different variable types. Number of members: 2,048 max. Nesting levels: 8 max.
			Member data types	Basic data types, structures, unions, enumerations, array variables
			Specifying member offsets	You can use member offsets to place structure members at any memory locations.
		Unions	Function	A derivative data type that groups together data with different variable types. Number of members: 4 max.
			Member data types	BOOL, BYTE, WORD, DWORD and LWORD.
		Enumerations	Function	A derivative data type that uses text strings called enumerators to express variable values.
	Data type attributes	Array specifications	Function	An array is a group of elements with the same data type. You specify the number (subscript) of the element from the first element to specify the element. Number of dimensions: 3 max. Number of elements: 65,535 max.
			Array specifications for FB instances	Supported.
		Range specifications		You can specify a range for a data type in advance. The data type can take only values that are in the specified range.
		Libraries		User libraries.
Motion control	Control modes			Position control, velocity control, torque control
	Axis types			Servo axes, virtual servo axes, encoder axes and virtual encoder axes
	Positions that can be managed			Command positions and actual positions
	Single-axis	Single-axis position contol	Absolute positioning	Positioning is performed for a target position that is specified with an absolute value.
			Relative positioning	Positioning is performed for a specified travel distance from the command current position.
			Interrupt feeding	Positioning is performed for a specified travel distance from the position where an interrupt input was received from an external input.
			Cyclic synchronous absolute positioning	The function which output command positions in every control period in the position control mode.
		Single-axis velocity control	Velocity control	Velocity control is performed in position control mode.
			Cyclic synchronous velocity control	A velocity command is output each control period in the velocity control mode.
		Single-axis torque control	Torque control	The torque of the motor is controlled.
		Single-axis synchronized control	Starting cam operation	A cam motion is performed using the specified cam table.
			Ending cam operation	The cam motion for the axis that is specified with the input parameter is ended.
			Starting gear operation	A gear motion with the specified gear ratio is performed between a master axis and slave axis.
			Positioning gear operation	A gear motion with the specified gear ratio and sync position is performed between a master axis and slave axis.
			Ending gear operation	The specified gear motion or positioning gear motion is ended.
			Synchronous positioning	Positioning is performed in sync with a specified master axis.
			Master axis phase shift	The phase of a master axis in synchronized control is shifted.
			Combining axes	The command positions of two axes are added or subtracted and the result is output as the command position.
		Single-axis manual operation	Powering the servo	The servo in the servo drive is turned ON to enable axis motion.
			Jogging	An axis is jogged at a specified target velocity.

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Motion control	Single-axis	Auxiliary functions for single-axis control	Resetting axis errors	Axes errors are cleared.
			Homing	A motor is operated and the limit signals, home proximity signal, and home signal are used to define home.
			Homing with parameter	Specifying the parameter, a motor is operated and the limit signals, home proximity signal and home signal are used to define home.
			High-speed homing	Positioning is performed for an absolute target position of 0 to return to home.
			Stopping	An axis is decelerated to a stop at the specified rate.
			Immediately stopping	An axis is stopped immediately.
			Setting override factors	The target velocity of an axis can be changed.
			Changing the current position	The command current position or actual current position of an axis can be changed to any position.
			Enabling external latches	The position of an axis is recorded when a trigger occurs.
			Disabling external latches	The current latch is disabled.
			Zone monitoring	You can monitor the command position or actual position of an axis to see when it is within a specified range (zone).
			Enabling digital cam switches	You can turn a digital output ON and OFF according to the position of an axis.
			Monitoring axis following error	You can monitor whether the difference between the command positions or actual positions of two specified axes exceeds a threshold value.
			Resetting the following error	The error between the command current position and actual current position is set to 0.
			Torque limit	The torque control function of the servo drive can be enabled or disabled and the torque limits can be set to control the output torque.
			Position compensation	The function which compensate the position for the axis in operation.
			Start velocity	You can set the initial velocity when axis motion starts.
	Axes groups	Multi-axes coordinated control	Absolute linear interpolation	Linear interpolation is performed to a specified absolute position.
			Relative linear interpolation	Linear interpolation is performed to a specified relative position.
			Circular 2D interpolation	Circular interpolation is performed for two axes.
			Axes group cyclic synchronous absolute positioning	A positioning command is output each control period in Position control mode.
		Auxiliary functions for multi-axes coordinated control	Resetting axes group errors	Axes group errors and axis errors are cleared.
			Enabling axes groups	Motion of an axes group is enabled.
			Disabling axes groups	Motion of an axes group is disabled.
			Stopping axes groups	All axes in interpolated motion are decelerated to a stop.
			Immediately stopping axes groups	All axes in interpolated motion are stopped immediately.
			Setting axes group override factors	The blended target velocity is changed during interpolated motion.
			Reading axes group positions	The command current positions and actual current positions of an axes group can be read.
			Changing the axes in a group	The composition axes parameter in the axes group parameters can be overwritten temporarily.
	Common items	Cams	Setting cam table properties	The end point index of the cam table that is specified in the input parameter is changed.
			Saving cam tables	The cam table that is specified with the input parameter is saved in non-volatile memory in the CPU unit.
			Generating cam tables	The cam table that is specified with the input parameter is generated from the cam property and cam mode.
		Parameters	Writing MC settings	Some of the axis parameters or axes group parameters are overwritten temporarily.
			Changing axis parameters	You can access and change the axis parameters from the user program.
	Auxiliary functions	Count modes		You can select either linear mode (finite length) or rotary mode (infinite length).
		Unit conversions		You can set the display unit for each axis according to the machine.
		Acceleration/deceleration control	Automatic acceleration/deceleration control	Jerk is set for the acceleration/deceleration curve for an axis motion or axes group motion.
			Changing the acceleration and deceleration rates	You can change the acceleration or deceleration rate even during acceleration or deceleration.
		In-position check		You can set an in-position range and in-position check time to confirm when positioning is completed.
		Stop method		You can set the stop method to the immediate stop input signal or limit input signal.
		Re-execution of motion control instructions		You can change the input variables for a motion control instruction during execution and execute the instruction again to change the target values during operation.

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Motion control	Auxiliary functions	Multi-execution of motion control instructions (buffer mode)		You can specify when to start execution and how to connect the velocities between operations when another motion control instruction is executed during operation.
		Continuous axes group motions (transition mode)		You can specify the transition mode for multi-execution of instructions for axes group operation.
		Monitoring functions	Software limits	Software limits are set for each axis.
			Following error	The error between the command current value and the actual current value is monitored for an axis.
			Velocity, acceleration/deceleration rate, torque, interpolation velocity and interpolation acceleration/deceleration rate	You can set warning values for each axis and each axes group.
		Absolute encoder support		You can use an OMRON 1S servomotor or Accurax-G5 series servomotor with an absolute encoder to eliminate the need to perform homing at startup.
		Input signal logic inversion		You can inverse the logic of immediate stop input signal, positive limit input signal, negative limit input signal or home proximity input signal.
	External interface signals			The servo drive input signals listed below are used. Home signal, home proximity signal, positive limit signal, negative limit signal, immediate stop signal and interrupt input signal.
Unit (I/O) management	EtherCAT slaves	Number of slaves		192 max.
Communications	EtherNet/IP port	Communication protocol		TCP/IP, UDP/IP
		TCP/IP functions	CIDR	The function which performs IP address allocations without using a class (class A to C) of IP address.
			IP forwarding	The function which forward IP packets between interfaces.
			Packet filter*2	Check the IP packet, the function to determine wether to receive the source IP address and TCP port number.
			NAT	Function for transfer by converting the two IP address.
		CIP communications service	Tag data links	Programless cyclic data exchange is performed with the devices on the EtherNet/IP network.
			Message communications	CIP commands are sent to or received from the devices on the EtherNet/IP network.
		TCP/IP applications	Socket services	Data is sent to and received from any node on EtherNet using the UDP or TCP protocol. Socket communications instructions are used.
			FTP client	File can be read from or written to computers to other Ethernet nodes from the CPU unit. FTP client communications instructions are used.
			FTP server	Files can be read from or written to the SD memory card in the CPU unit from computers at other Ethernet nodes.
			SNMP agent	Built-in EtherNet/IP port internal status information is provided to network management software that uses an SNMP manager.
	EtherCAT port	Supported services	Process data communications	Control information is exchanged in cyclic communications between EtherCAT master and slaves. This communications method is defined by CoE.
			SDO communications	A communication method to exchange control information in noncyclic event communications between the EtherCAT master and slaves. This communications method is defined by CoE.
		Network scanning		Information is read from connected slave devices and the slave configuration is automatically generated.
		DC (distributed clock)		Time is synchronized by sharing the EtherCAT system time between all EtherCAT devices (including the master).
		Packet monitoring		The frames that are sent by the master and the frames that are received by the master can be saved. The data that is saved can be viewed with WireShark or other applications.
		Enable/disable settings for slaves		The slaves can be enabled or disabled as communications targets.
		Disconnecting/connecting slaves		Temporary disconnects a slave from the EtherCAT network for maintenance, such as for replacement of the slave and then connects the slave again.
		Supported application protocol	CoE	SDO messages that conform to the CANopen standard can be sent to slaves via EtherCAT.
	Communications instructions			The following instructions are supported: CIP communications instructions, socket communications instructions, SDO message instructions, FTP client instructions and Modbus RTU protocol instructions.
System management	Event logs	Function		Events are recorded in the logs.
		Number of events per event log		• System event log: 2,048 max. • Access event log: 1,024 max. • User-defined event log: 1,024 max.
Debugging	Online editing			Programs, function blocks, functions and global variables can be changed online. Different operators can change different POUs across a network.
	Forced refreshing	Forced refreshing		The user can force specific variables to TRUE or FALSE.
		Number of forced variables	For EtherCAT slaves	64 max.
	MC test Run			Motor operation and wiring can be checked from the Sysmac Studio.
	Synchronization			The project file in the Sysmac Studio and the data in the CPU unit can be made the same when online.
	Differentiation monitoring	Differentiation monitoring		Rising/falling edge of contacts can be monitored.
		Number of contacts		8 max.

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Debugging	**Data tracing**	**Types**	**Single triggered trace**	When the trigger condition is met, the specified number of samples are taken and then tracing stops automatically.
			Continuous trace	Data tracing is executed continuously and the trace data is collected by the Sysmac Studio.
		Number of simultaneous data trace		4 max.
		Number of records		10,000 max.
		Sampling	**Number of sampled variables**	192 variables max.
		Timing of sampling		Sampling is performed for the specified task period, at the specified time or when a sampling instruction is executed.
		Triggered traces	**Triggered traces**	Trigger conditions are set to record data before and after an event.
			Trigger conditions	When BOOL variable changes to TRUE or FALSE. Comparison of non-BOOL variable with a constant. Comparison method: Equals (=), greater than (>), greater than or equals (≥), less than (<), less than or equals (≤), not equal (≠).
			Delay	Trigger position setting: A slider is used to set the percentage of sampling before and after the trigger condition is met.
	Simulation			The operation of the CPU unit is emulated in the Sysmac Studio.
Reliability	**Self-diagnosis**	**Controller error levels**		Major fault, partial fault, minor fault, observation and information.
		User-defined errors	**User-defined errors**	User-defined errors are registered in advance and then records are created by executing instructions.
			Levels	8 levels
Security	**Protecting software assets and preventing operating mistakes**	**CPU unit names and serial IDs**		When going online to a CPU Unit from the Sysmac Studio, the CPU Unit name in the project is compared to the name of the CPU Unit being connected to.
		Protection	**User program transfer with no restoration information**	You can prevent reading data in the CPU unit from the Sysmac Studio.
			CPU unit write protection	You can prevent writing data to the CPU unit from the Sysmac Studio or SD memory card.
			Overall project file protection	You can use passwords to protect .smc files from unauthorized opening on the Sysmac Studio.
			Data protection	You can use passwords to protect POUs on the Sysmac Studio.
		Verification of operation authority	**Verification of operation authority**	Online operations can be restricted by operation rights to prevent damage to equipment or injuries that may be caused by operating mistakes.
			Number of groups	5
		Verification of user program execution ID		The user program cannot be executed without entering a user program execution ID from the Sysmac Studio for the specific hardware (CPU unit).
Memory card	**Location to store**			Shared folder: The folder that exist on the HDD/SDD that Windows is running.
	Application	**Memory card operation instructions**		You can access memory cards from instructions in the user program.
		File operations from the Sysmac Studio		You can perform file operations for Controller files in the memory card and read/write standard document files on the computer.
		File operations from FTP client/ server		You can store and read files by the FTP client function and FTP server function.
Backup	**SD memory card backup functions**	**Operation**	**Using system defined variables**	You can use system-defined variables to backup or compare data.
			Memory card operations dialog box	Backup and verification operations can be performed from the SD memory card operations dialog box on the Sysmac Studio.
			Using instruction	Backup operation can be performed by using instruction.
		Protection	**Backing up data to the SD card**	Prohibit SD memory card backup functions.
	Sysmac Studio controller backup functions			Backup, restore and verification operations for units can be performed from the Sysmac Studio.

*1 Inline ST is supported (Inline ST is ST that is written as an element in a ladder diagram).
*2 Internal port only.

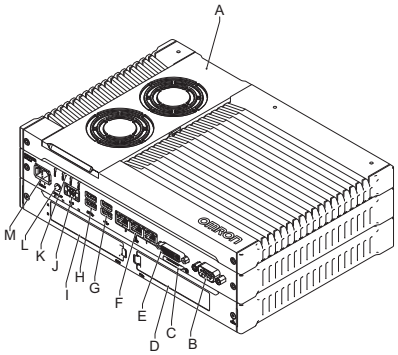
Display specifications

Model			15.4-inch	12.1-inch
Display	Display panel[*1]	Display device	TFT LCD	
		Screen size	15.4-inches	12.1-inches
		Resolution	1,280 x 800 pixels (horizontal x vertical) at 60 Hz	
		Colors	16,770,000 colors	
		Effective display area	331 x 207 mm (horizontal x vertical)	261 x 163 mm (horizontal x vertical)
		View angles	Left/Right/Top/Bottom: 60º	
		Life	50,000,000 operations min.	
		EMC	Correct touchscreen operation is possible within allowable EMC immunity conditions	
	Backlight	Life	50,000 hours min.[*2]	
		Brightness adjustment[*3]	200 levels	
Touch screen	Technology	Type	Projected capacitive	
		Multitouch	Up to 5 simultaneous touches	
		Touch resolution	Touch accuracy 1.5% (4-5 mm)	
		Surface treatment	Anti glare treatment	
		Surface hardness	Mohs scale 5-6	
	Features		• Water detection[*4] • Hand palm rejection[*5] • Gloves[*6]	

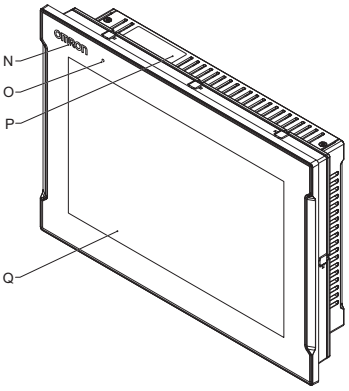
[*1] There may be some defective pixels in the display. This is not a fault as long as the numbers of defective light and dark pixels fall within the following standard range: light and dark pixels 10 or less. (There must not be 3 adjacent light/dark pixels.)
[*2] This is the estimated time before brightness is reduced by half at room temperature. The life expectancy is drastically shortened if used at high temperatures.
[*3] If the brightness is set to very dark, it causes flickering or the screen will be too dark to use.
[*4] If water is detected the touch functionality will not be available.
[*5] If a palm is detected that specific area is neglected.
[*6] The touchscreen can be operated when wearing gloves. Check correct usage of the gloves before using them.

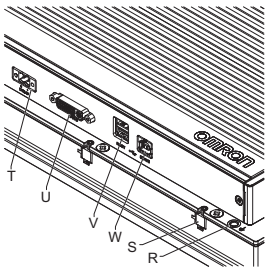
Nomenclature

Industrial Box PC

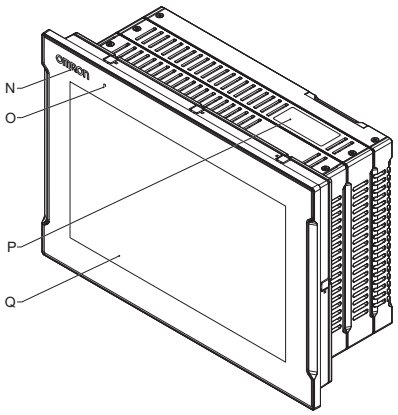


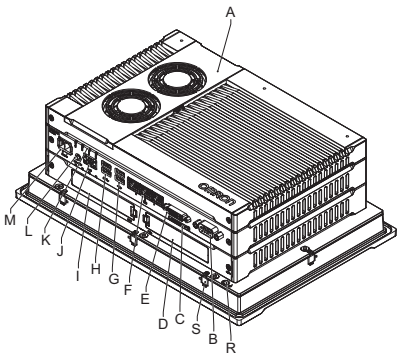
Industrial Monitor





Industrial Panel PC
(Industrial Box PC + Monitor integrated)

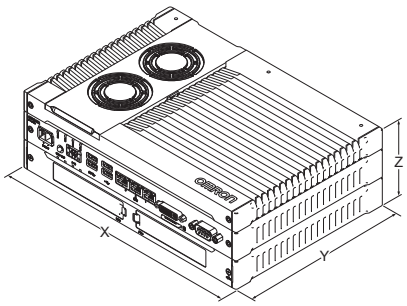




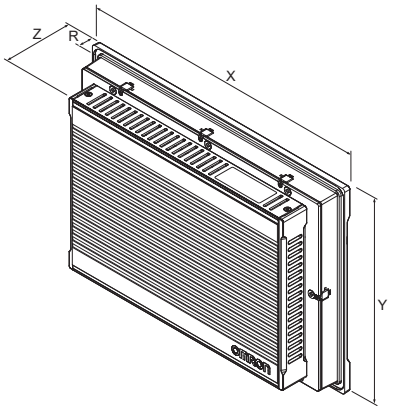
Symbol	Name	Description
A	Cover	Provides access to the battery and to the fans for units that have active cooling
B	Option port	Interface connection options: RS-232C interface port (default) or DVI-D interface port for additional monitor connection
C	SD card slot	Slot to insert the SD card
D	PCIe bay	PCI Express mounting slot
E	DVI interface port	DVI digital visual interface connector
F	10BASE-T/100BASE-T/1000BASE-T Ethernet interface ports	3 x RJ45 Gb Ethernet interface connectors
G	USB 2.0 interface connectors	2 USB 2.0 interface connectors
H	USB 3.0 interface connectors	2 USB 3.0 interface connectors
I	Drive bay	Two 2.5-inch drive bays for HDD/SSD storage devices: Slot A: Pre-installed Windows OS and main storage. Slot A is the slot at the side of the connectors Slot B: Optional drive for additional storage. Slot B is the slot at the outside of the unit
J	I/O connector	2 inputs (power ON/OFF input and UPS mode input) and 1 output (power status output)
K	LED indicators	Visual indicators for the operating state of the unit
L	Power button	Pushbutton to manually power ON/OFF the unit
M	Power connector	Lockable power connector
N	Logo LED indicator	Backlit Omron LED logo with adjustable brightness
O	Status LED indicator	LED to indicate power and connection status with adjustable brightness
P	ID information label	Label containing Model ID, Lot No. and other unit specific information
Q	Touch screen LCD	Multi-touch LCD display
R	Frame grounding	Connection for frame grounding
S	Mounting brackets	8 retractable mounting brackets to secure the unit on a mounting surface
T	Power supply connector	24 VDC power supply connector
U	DVI-D video connector	DVI-D dual link connector for host video connection
V	USB Type-A connectors	2 USB connectors for external device connection
W	USB Type-B connector	USB connector for connection with the host PC

Dimensions

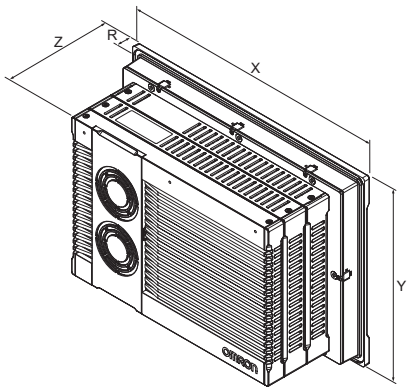
Industrial Box PC



Industrial Monitor



Industrial Panel PC
(Industrial Box PC + Monitor integrated)

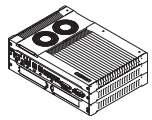


Item		X	Y	Z	R	Weight (kg)
Industrial Box PC		282	195*1	88.75	-	3.8
Industrial Monitor	12.1-inch display size	332	234	66	8	3.3
	15.4-inch display size	401	277			4.3
Industrial Panel PC	12.1-inch display size	332	234	121		6.1
	15.4-inch display size	401	277			7.2

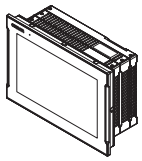
*1 200 mm including the DVI connectors.

Ordering information

Industrial Box PC

Appearance	Specifications	Number of axes	Storage device	Optional port	Model
	i7-4700EQ processor 8 GB DRAM (non-ECC) WES7 (64-bit) operating system PCIe slot	64	SSD 128 GB (iMLC)	RS-232C	NY512-1500-1XX213K1X
			SSD 64 GB (SLC)		NY512-1500-1XX21391X
		32	SSD 128 GB (iMLC)		NY512-1400-1XX213K1X
			SSD 64 GB (SLC)		NY512-1400-1XX21391X
		16	SSD 128 GB (iMLC)		NY512-1300-1XX213K1X
			SSD 64 GB (SLC)		NY512-1300-1XX21391X

Industrial Panel PC (Industrial Box PC + Monitor integrated)

Appearance	Specifications	Screen size	Number of axes	Storage device	Optional port	Model
	i7-4700EQ processor 8 GB DRAM (non-ECC) WES7 (64-bit) operating system PCIe slot Widescreen with capacitive touchscreen	15.4-inches	64	SSD 128 GB (iMLC)	RS-232C	NY532-1500-112213K10
				SSD 64 GB (SLC)		NY532-1500-112213910
			32	SSD 128 GB (iMLC)		NY532-1400-112213K10
				SSD 64 GB (SLC)		NY532-1400-112213910
			16	SSD 128 GB (iMLC)		NY532-1300-112213K10
				SSD 64 GB (SLC)		NY532-1300-112213910
		12.1-inches	64	SSD 128 GB (iMLC)		NY532-1500-111213K10
				SSD 64 GB (SLC)		NY532-1500-111213910
			32	SSD 128 GB (iMLC)		NY532-1400-111213K10
				SSD 64 GB (SLC)		NY532-1400-111213910
			16	SSD 128 GB (iMLC)		NY532-1300-111213K10
				SSD 64 GB (SLC)		NY532-1300-111213910

Industrial Monitor

Appearance	Specifications	Model
	15.4-inches display with capacitive touchscreen	NYM15W-C1000
	12.1-inches display with capacitive touchscreen	NYM12W-C1000

Accessories

Type	Specifications	Model
Mounting brackets*1	Book mount	NY000-AB00
	Wall mount	NY000-AB01
SD memory card	2 GB	HMC-SD291
	4 GB	HMC-SD491
USB memory	2 GB	FZ-MEM2G
	8 GB	FZ-MEM8G
Storage devices	HDD 320 GB	NY000-AH00
	SSD 32 GB (SLC)	NY000-AS00
	SSD 64 GB (SLC)	NY000-AS01
	SSD 128 GB (iMLC)	NY000-AS02
DVI cable	Length: 2 m	NY000-AC00 2M
	Length: 5 m	NY000-AC00 5M
USB A to USB B cable	Length: 2 m	FH-VUAB 2M
	Length: 5 m	FH-VUAB 5M
Power supply	Output voltage: 24 VDC	S8VK-G
UPS	Output voltage during backup operation: 24 VDC ±5%	S8BA*2
UPS communication cable	Signals for signal output (BL, TR, BU, WB), remote ON/OFF input, UPS stop signal input (BS) Length: 2 m	S8BW-C02

*1 Only applicable to Industrial Box PC.
*2 Revision number 04 or higher is required.

Spare parts (included with the Industrial Box PC and Industrial Panel PC)

Type	Specifications	Model
Battery	Service life: 5 years at 25ºC	CJ1W-BAT01
Fan unit	Service life: 70,000 hours of continuous operation at 40ºC with 15 to 65% relative humidity	NY000-AF00
Accessory kit	Power connector, I/O connector, drive bracket and 4 mounting screws for drive installation, PCIe card support and clip for PCIe card installation	NY000-AK00

Recommended EtherCAT and EtherNet/IP communication cables

Refer to “Recommended EtherCAT and EtherNet/IP communication cables” in the NJ-series machine controller datasheet Cat. No. I180E-EN (www.industrial.omron.eu/en/products/downloads) for the recommended cables.

Computer software

Specifications	Model
Sysmac Studio version 1.17 or higher	SYSMAC-SE2□□□

Included support software (pre-installed on the Industrial Box PC and the Industrial Panel PC)

Item	Description
Industrial PC Support Utility	The Industrial PC Support Utility is a software utility to assist in diagnosing and resolving problems of the Industrial PC.
Industrial PC Tray Utility	The Industrial PC Tray Utility is a software utility that provides information about the current state of the Industrial PC, its related devices and associated software.
Industrial PC System API	The Industrial PC System API allows programmers to create programs that can retrieve information or set an indicator status of the Industrial PC. The API makes use of the included IPC System Service to manage the hardware.
Industrial Monitor Utility	The Industrial Monitor Utility provides a user interface to control settings and display details of connected Industrial Monitors.
Industrial Monitor Brightness Utility	The Industrial Monitor Brightness Utility is a small software utility that allows you to control the brightness of the screen backlight and LEDs of all connected Industrial Monitors.
Industrial Monitor API	The Industrial Monitor API allows programmers to create applications that can control the hardware features and retrieve information from connected Industrial Monitors.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. SysCat_I190E-EN-01 In the interest of product improvement, specifications are subject to change without notice.