

Industrial PC Platform

Powerful Performance for automation, control and information



Powerful performance – maximize output
Rock-solid build – improve uptime
Real-time OS inside – reliable machine control
Full size and compact models

The perfect fusion of rugged reliability and future proof of expandability

Powerful, reliable, scalable - and tough as they come

Our NY Industrial PC has been designed from first principles to be powerful, reliable and scalable, making it ideally suited to visualization, data handling, measuring and controlling. We've simplified the design and build to eliminate faults caused by complexity and, with other unique design features, to maximize uptime and reduce costs. The future will be IT driven: Omron's IPC platform will make you part of it.

Simplicity improves reliability

Unnecessary complexity causes problems, so we've eliminated it totally, to improve reliability, maximize performance.

- No internal cables
- No complex heatpipes
- Structurally uniform mechanics to enable future expansion
- Reduced assembly, maintenance and labor costs
- Rock-solid architecture. Die-cast aluminum case



- Intel® Xeon® Processor
- Intel® Core™ i7 Processor
- Intel® Core™ i5 Processor
- Intel® Celeron® Processor
- Intel® Atom® Processor



Active cooling and air-flow isolated from the electronics

Performance

- Based on Intel® Atom® to Intel® Xeon® processors
- Up to 32 GB ECC(DDR4 SDRAM) supported
- Intel® Iris™ Pro Graphics or Intel® HD Graphics
- Unique heatsink effectiveness
- RoHS Directive (2002/95/EC), EU Directives, KC Registration, RCM, cULus, EAC

Powerful. Tough. Future Proof.



Connections

- Options: RS-232C, extra DVI-D for dual monitor, NY Monitor Link or GigE LAN
- PCIe Card Slot Half-length (X1 or X4 depending on CPU)
- SD Memory card slot (2.0 spec and up to 32 GB)
- DVI
- 3x RJ45 Gigabit Ethernet ports
- CFast card slot *3
- 2x USB2.0, 2x USB3.0
- Choice of storage devices: HDD or SSD (MLC and long-life SLC types) Second drive option
- I/O connection prepared for UPS connection
- Power supply: 24VDC non-isolated

Full size and compact models

Industrial Panel PC:

Our industrial-quality touchscreen panel PC's and monitors enable operator and maintenance engineer to interact more effectively with the machine. The touchscreen controller can detect non-standard actions such as false touches, palm rejection, water and cleaning - even if the user is wearing gloves.*1



Industrial Box PC

3 layer size



NYB1E, NYB17, NYB25, NYB1C

2 layer size



NYB35, NYB2C

1 layer size



NYB35, NYB2C, NYB2A

Industrial Monitor

- 12.1, 15.4 & 18.5 Inch industrial display
- Multi-touch, using the latest projected capacitive technology
- False touch detection
- Glove operation*1
- Easy built-in supportive mounting
- Unique customized logo

*1. When using gloves, ensure to use gloves that are functional with this touchscreen.

*2. Industrial Monitor won the iF Design Award 2016. The iF Product design Award, presented by Hannover-based International Forum Design GmbH, is one of the world's most prestigious design awards.

*3. An optional CFast Card slot is located at the rear side of the base layer.

The perfect union of Industrial control and open flexibility

Perfect fusion: Sysmac machine control and IT technology

Designed specifically for machine usage, making them innovative yet reliable, the IPC Machine Controller combines the precision and utility of the Sysmac platform with the versatility and range of Windows programs.

The two platforms operate simultaneously but separately, so if Windows is down, the machine just keeps on working. As a result, engineers become unstoppable - empowered to explore manufacturing innovation by leveraging big data, NUI (Natural User Interface) and IoT (Internet of Things) initiatives, all without compromising proven PLC reliability and robustness.

Industrial PC

- Fourth-generation Intel® Core™ i7; Four core/8 threads
- Windows Embedded Standard 7
- Open operating system enables use of own software
- Ethernet port for access to your IT systems

Machine Controller

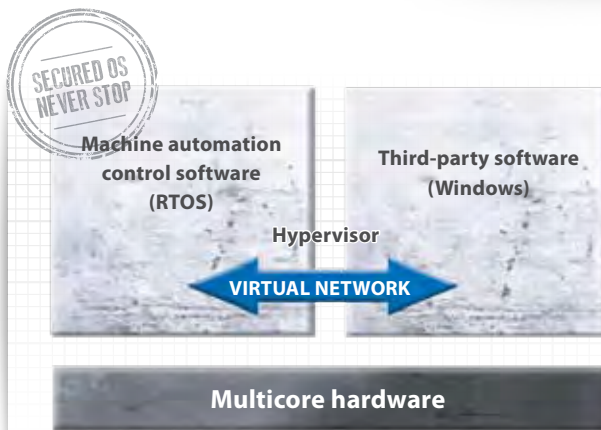
- Sysmac Machine control inside
- 500 µs system cycle time
- 16 to 64 axes of motion control
- EtherNet/IP port for machine-to-machine, HMI communication
- EtherCAT port for up to 192 synchronized slaves
- Safety over EtherCAT - FSoE



Sysmac Studio

Integrated Development Environment

- A single tool for logic sequence, motion, safety, robotics, vision, HMI and Database connection
- Open standard IEC 61131-3
- Sysmac Library to optimize engineering time and machine availability



The beating heart of the IPC Machine Controller

Our challenge was to use Sysmac machine control in combination with an open operating system like Windows. Normally it would be done using full virtualization, but this would influence the machine control, so it wasn't acceptable to us. Instead, we use partitioning, so that both operating systems can work independently: if Windows is down, the machine is not affected.

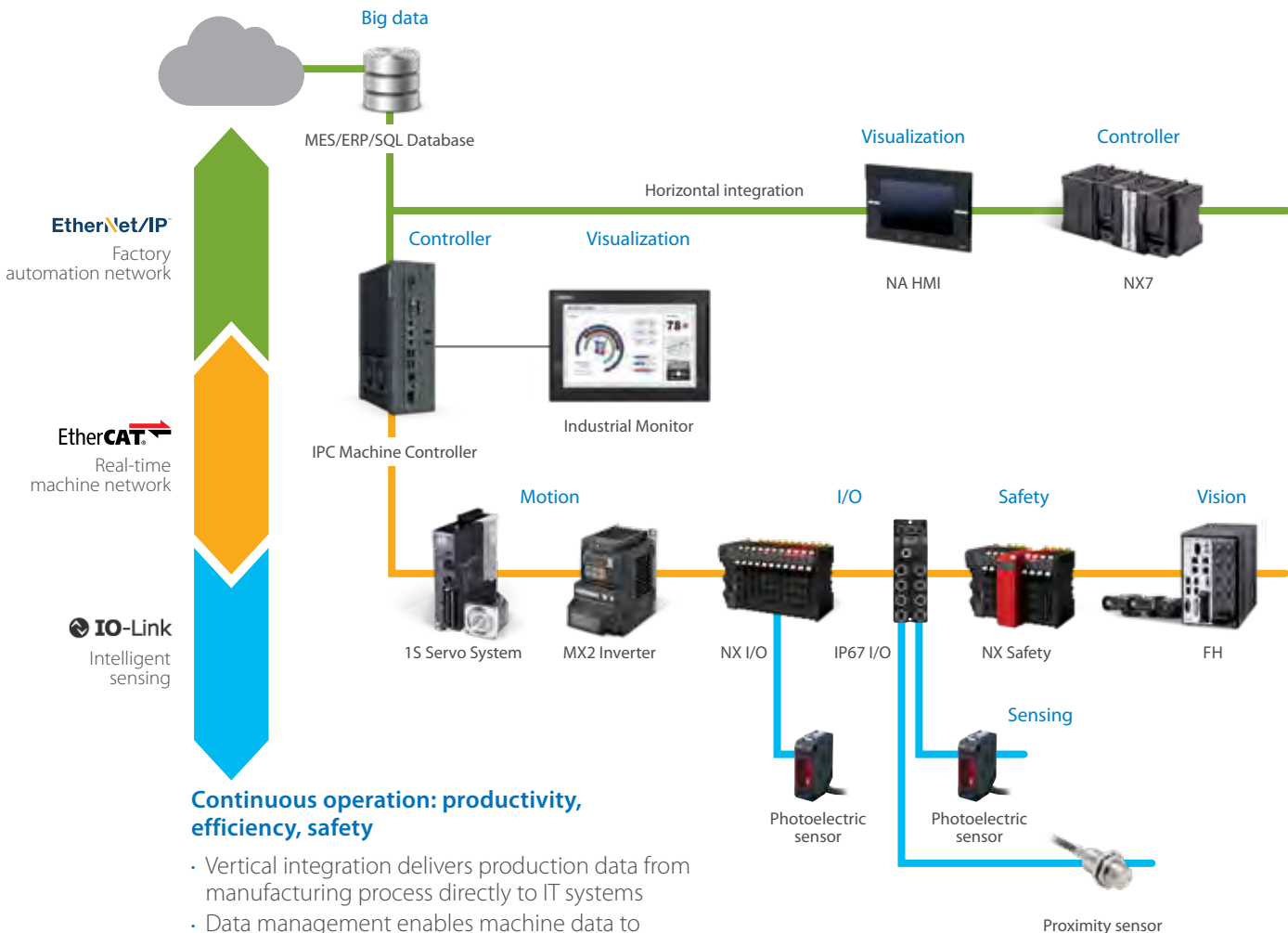
*1. Industrial Box PC was awarded the Red Dot Award 2016 in the category 'computers'. The Red Dot design award has been presented by the Design Zentrum Nordrhein Westfalen since 1955.

It is one of the best-respected design competitions in the world, along with the iF award (Germany) and IDEA (the United States).

*2. Industrial Box PC was awarded the Good Design Award 2017. The Good Design Award has been a sole comprehensive design evaluation and commendation system in Japan since 1957. Many companies and designers from both inside and outside of Japan participate in this activity to enhance their industry or quality of life through design.



Sysmac Integrated Platform



Continuous operation: productivity, efficiency, safety

- Vertical integration delivers production data from manufacturing process directly to IT systems
- Data management enables machine data to be recorded, stored and analyzed to improve productivity
- EtherCAT connectivity simplifies installation of production modules and safety devices

SYSMAC
always in control

High-speed, high precision Motion controller plus PC - in one box

High-speed, high-precision motion controller plus PC - in one box

The IPC Programmable Multi-Axes Controller offers exceptionally precise motion control, with proven technology from Omron's Delta Tau Data Systems, Inc. It was developed to help manufacturers boost both their productivity and their manufacturing quality, delivering world-beating*¹ output speeds allied to exception precision. It comes equipped with Windows real-time operating systems which, combined with powerful control capability, provides exceptional flexibility. And it's not just superior motion control: it also enables the creation of high-resolution graphics as well as customized applications for high-end production requirements. The system can perform predictable motion control while running intensive data-handling applications and, uniquely, will continue with motion control tasks even if the OS stops working.



Industrial PC

Operating System

- Windows (Embedded Standard 7)

Hypervisor

Enables the multiple operating system environment

Programmable Multi Axis Controller

Proven motion control technology from Delta Tau Data Systems, Inc.



High-speed multi-axis control

- Up to 128 axes of control
- Motion control period: 250 μ s/16 axes*²



Flexibility

- Flexible function development capability (G-Code/ANSI C/original programming language)
- EtherCAT for flexible system configuration



Reliability

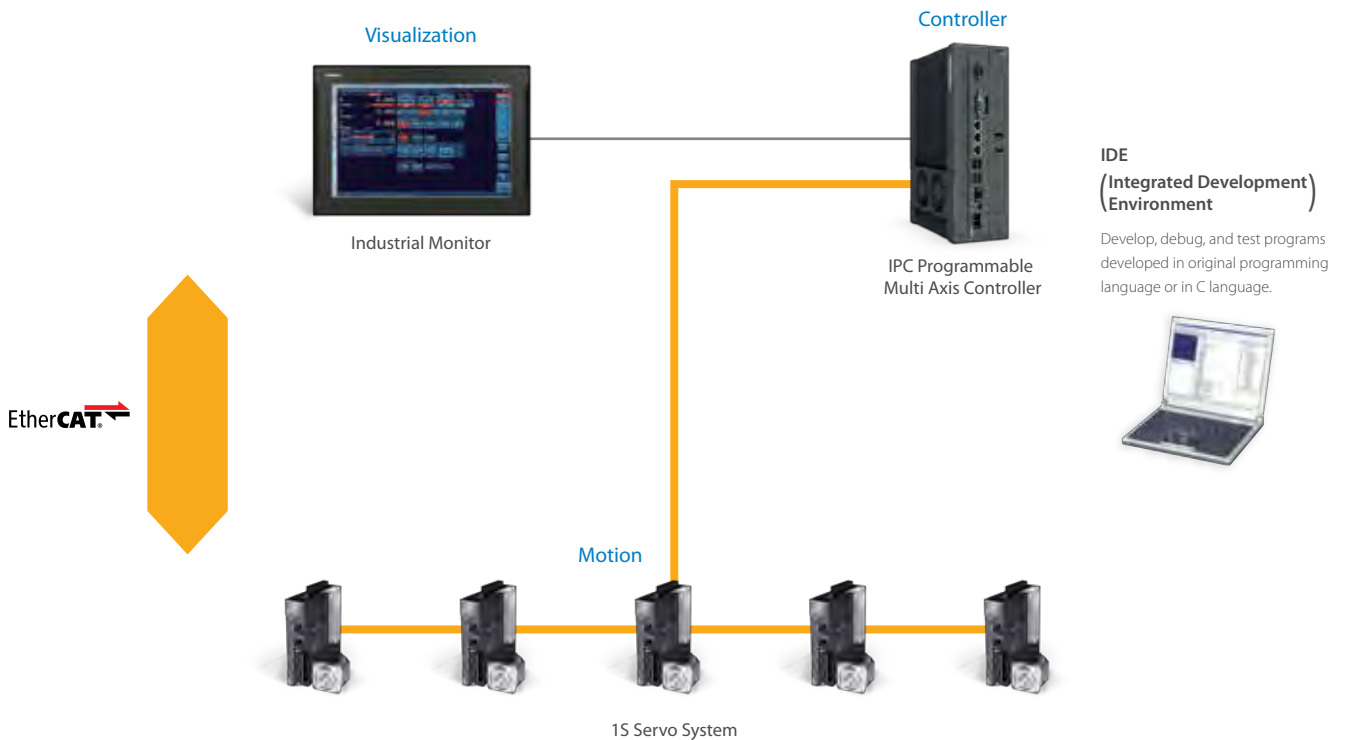
- Multi-tasking of Motion Control and Windows/applications
- Hypervisor*³ software for uninterrupted control even if Windows is down





High-speed and high-precision motion controller and PC in one



The Omron IPC Programmable Multi Axis Controller can be integrated into your existing system, even if it uses products from other manufacturers. Consult your Omron representative.

System Configuration





Industrial PC platform family


INDUSTRIAL PC PLATFORM			
			
Product name	Industrial PC		
Type	Industrial Box PC	Industrial Panel PC	
Model	NYB	NYP	
Description	Compact design that offers flexibility, expandability and easy maintenance for applications in factory automation environments	Combines the functionality of the Industrial Box PC and Industrial Monitor	
Operating system	No operating system Windows Embedded Standard 7 - 32 bit Windows Embedded Standard 7 - 64 bit Windows 10 IoT Enterprise LTSB - 64 bit Windows 10 IoT Enterprise LTSC - 64bit		
Function module	—		
Number of axes	—		
CPU type	Intel® Xeon® E3-1515M v5 Processor 6th generation CPU with Fan Unit for active cooling Intel® Core™ i5-7300U Processor 7th generation CPU with fanless cooling Intel® Celeron® 3965U Processor 7th generation CPU with fanless cooling Intel® Core™ i7-4700EQ Processor 4th generation CPU with Fan Unit for active cooling Intel® Core™ i5-4300U Processor 4th generation CPU with fanless cooling Intel® Celeron® 2980U Processor 4th generation CPU with fanless cooling Intel® Atom® x5-E3940 Apollo Lake	Intel® Core™ i5-7300U Processor 7th generation CPU with fanless cooling Intel® Celeron® 3965U Processor 7th generation CPU with fanless cooling Intel® Core™ i7-4700EQ Processor 4th generation CPU with Fan Unit for active cooling Intel® Core™ i5-4300U Processor 4th generation CPU with fanless cooling Intel® Celeron® 2980U Processor 4th generation CPU with fanless cooling Intel® Atom® x5-E3940 Apollo Lake	
RAM memory	8 GB, 16 GB, 32 GB (ECC supported) *1 2 GB, 4 GB, 8 GB, 16 GB (non ECC)		
Storage	HDD, SSD, CFast, SD memory card		
Display size	—	12.1 inches, 15.4 inches, 18.5 inches	
Built-in ports	<ul style="list-style-type: none"> Ethernet USB 2.0/3.0 DVI 		
Interface option	RS-232C, DVI-D, NY Monitor Link, GigE LAN	RS-232C, DVI-D, NY Monitor Link	
Expansion slots	1 PCIe slot		

INDUSTRIAL PC PLATFORM			
			
IPC Machine Controller		IPC Programmable Multi Axis Controller	
Industrial Box PC		Industrial Box PC	
NY51"-1		NY51"-A	
Two operating systems: Windows and Real-Time OS		Provides flexibility in the creation of high-resolution graphics and applications and the development of motion control for high-end applications	
Windows Embedded Standard 7 - 32 bit *2 Windows Embedded Standard 7 - 64 bit		Windows Embedded Standard 7 - 32 bit Windows Embedded Standard 7 - 64 bit	
Machine Automation Control Software or Machine Automation Control Software + NC		Programmable Multi Axis Controller	
16, 32, 64		128	
Intel® Core™ i7-4700EQ Processor 4th generation CPU with Fan Unit for active cooling		Intel® Core™ i7-4700EQ 4th generation CPU with Fan module for active cooling	
8 GB (non-ECC type)		8 GB (non-ECC type)	
HDD, SSD, CFast, SD memory card		SSD, SD memory card	
—		12.1 inches, 15.4 inches	
<ul style="list-style-type: none"> • Ethernet • EtherNet/IP • EtherCAT • USB 2.0/3.0 • DVI 		<ul style="list-style-type: none"> • Ethernet • EtherCAT • USB 2.0/3.0 • DVI 	
RS-232C, DVI-D, NY Monitor Link		RS-232C	
1 PCIe slot		1 PCIe slot	

*2. For the 32 bit version, consult your OMRON sales representative.

Industrial PC platform family

INDUSTRIAL PC PLATFORM			
			
Product name	Industrial Monitor		
Model	NYM12	NYM15	NYM19
Description	Display and touch interface for the Industrial PC Platform		
Display device	TFT LCD		
Screen size	12.1 inches	15.4 inches	18.5 inches
Resolution	Up to 1,280 x 800 pixels at 60 Hz		Up to 1920 x 1080 pixels at 60 Hz
Colors	16,770,000 colors		
Connectors	<ul style="list-style-type: none"> • 1 Power Connector • 2 USB Type-A Connector • 1 DVI-D Connector • 1 USB Type-B Connector 		
Built-in options	NY Monitor Link		
Allowable power supply voltage range	19.2 to 28.8 VDC		

UNINTERRUPTIBLE POWER SUPPLY (UPS)			
			
Model	S8BA *		
Capacity	120 W	240 W	
Input voltage	24 VDC		
Output Voltage	Normal operation	Output of input voltage as-is	
	voltage	24VDC±5%	
Backup time (25°C, initial characteristics)	6 min. (120 W)	6 min. (240 W)	
	I/O signal	Yes (RJ45)	
Dimensions (W x D x H mm)	94x100x100	148x100x100	
Weight of unit	Approx. 0.8 kg	Approx. 1.3 kg	

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- Programmable Logic Controllers (PLC) • Temperature Controllers • Remote I/O

Robotics

- Industrial Robots • Mobile Robots

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- Rotary Encoders • Ultrasonic Sensors

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- Safety Light Curtains • Safety Laser Scanners • Programmable Safety Systems
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- Safety Switches & Operator Controls • Safety Monitoring/Force-guided Relays

Control Components

- Power Supplies • Timers • Counters • Programmable Relays
- Digital Panel Meters • Monitoring Products

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- Limit Switches • Pushbutton Switches • Electromechanical Relays
- Solid State Relays

Software

- Programming & Configuration • Runtime