

Industrial PC platform

Powerful performance for automation, control and information



- Future proof Industrial PC - rugged and expandable
- Embedded controller available - dedicated machine control plus open flexibility
- High performance motion control options

The perfect fusion of rugged reliability

Rock-solid Industrial PC design

Our NY series Industrial PC has been designed 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 to maximize uptime while reducing costs. The future will be IT driven: Omron's IPC platform will make you a part of it.

Designed for the real world

Our projected capacitive touchscreens for panel PCs and monitors ensure effective interaction for all users, including those wearing gloves. The controller can detect non-standard actions such as false touches, palm rejection, water and cleaning.



Key details

Features

- 12.1" and 15.4" industrial displays
- Multi-touch, using the latest projected capacitive technology
- False touch detection
- Glove operation

Performance

- Based on fourth-generation Intel® Celeron® to Intel® Core™ i7 processors
- Up to 8 GB DDR3L RAM
- Intel® HD graphics
- Unique heatsink effectiveness
- RoHS Directive (2002/95/EC), EU directives

Simplicity

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

and future proof expandability



Connections

Options: RS-232C or an extra DVI-D for dual monitor

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

2x USB2.0, 2x USB 3.0

Choice of storage devices: HDD or SSD (MLC and long-life SLC types) Second drive option

UPS port for I/O connection

Power supply: 24VDC non-isolated



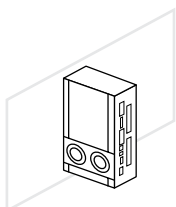
Slim design reduces panel space



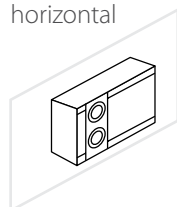
Active cooling and air-flow isolate the electronics from harsh environments

Versatile installation

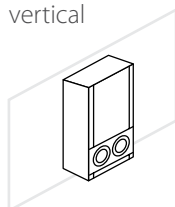
Option 1:
Book-mount



Option 2:
Wall-mount, horizontal



Option 3:
Wall-mount, vertical



Award winning design

Industrial Monitor won the iF Design Award 2016 and Industrial Box PC was awarded the Red Dot Award 2016 in the category of computers. These are some of world's most prestigious recognitions of outstanding design.



reddot award 2016*
winner

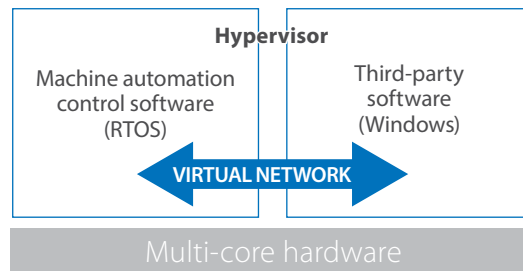
The perfect union of Industrial control and open flexibility



Inside the IPC machine controller

The IPC Machine Controller combines the highly synchronized precision and utility of the Sysmac automation platform with the versatility and range of an open Windows PC. The two platforms operate simultaneously but separately. If Windows fails, the machine keeps working without compromising proven PLC reliability and robustness. The combination empowers engineers to explore manufacturing innovation by leveraging big data, Natural User Interface (NUI) and Industrial Internet of Things (IIoT) initiatives.

Machine control OS never stops: The beating heart of the IPC machine controller



Our challenge was to allow both machine control and Windows operating systems to work independently, and ensure machine control tasks do not get interrupted if Windows crashes. To solve this, we used partitioning instead of full virtualization, and hypervisor software to create a virtual network and appropriately assigning IPC hardware resources (boards, CPU cores, etc.) to the operating system.



Machine Controller

- Sysmac Machine control inside
- 500 μ s 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

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

Sysmac Studio

Integrated development environment

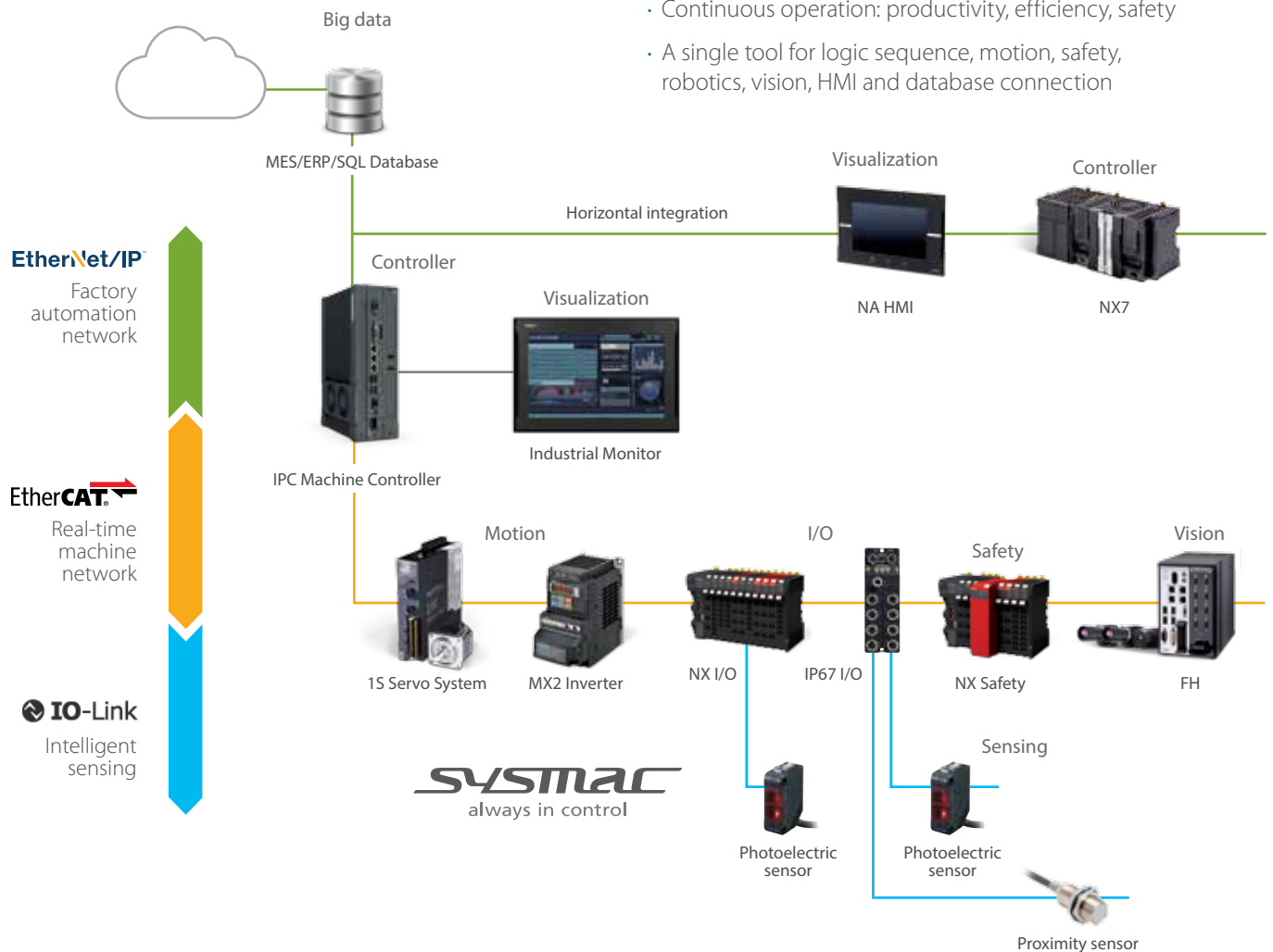
- A single tool for logic sequence, motion, safety, robotics, vision, HMI and database connection
- Open standard IEC 61131-3
- Sysmac Library application-specific functions and function blocks optimize engineering time and machine availability
- Programs are fully portable between IPC and Sysmac Nj/NX machine automation controllers



The power of integration

Sysmac integrated platform

- Vertical integration delivers production data from the 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
- Continuous operation: productivity, efficiency, safety
- A single tool for logic sequence, motion, safety, robotics, vision, HMI and database connection



High-speed, high-precision

Motion controller plus PC - in one box

IPC programmable multi-axis controller

The IPC Programmable Multi-Axis Controller offers exceptionally precise motion control with proven technology from Omron's Delta Tau Data Systems. It was developed to help manufacturers boost both their productivity and manufacturing quality, delivering world-beating output speeds along with 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.



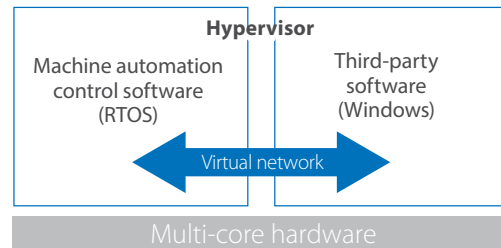
Industrial PC

Operating system

- Windows (Embedded Standard 7)

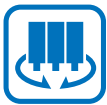
Hypervisor

Enables the multiple operating system environment



Programmable multi-axis controller

Proven motion control technology from Omron's Delta Tau Data Systems.



High-speed multi-axis control

- Up to 128 axes of control
- Motion control period:
250 microseconds/16 axes
16.6 microseconds/1 axis or
50 microseconds/8 axes
(Reference values July 2016).



Flexibility

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



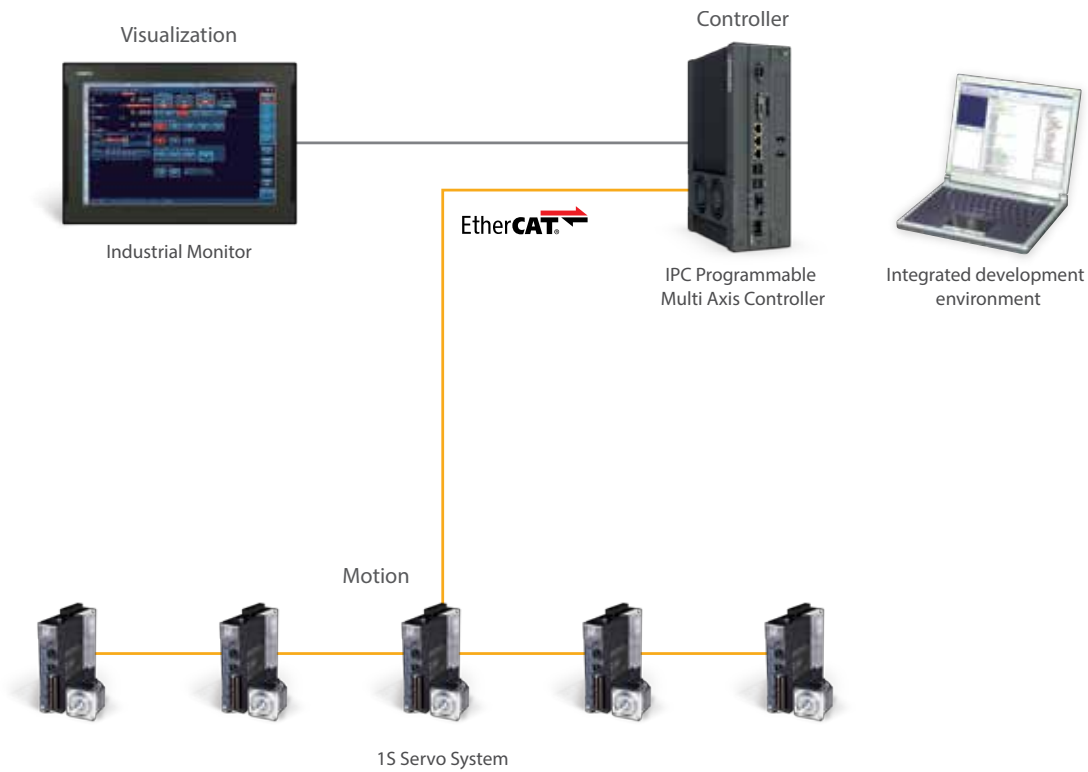
Reliability

- Multi-tasking of motion control and Windows/applications
- Hypervisor software for uninterrupted control even if Windows is down







Easily integrate high-speed, high-precision motion control

Develop, debug, and test programs developed in original programming language or in C language. The Omron IPC programmable multi-axis controller can be integrated into your existing system, even if it uses products from other manufacturers.



Industrial PC platform family

Machine Controller 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	
Operating system	Windows Embedded Standard 7 - 32 bit Windows Embedded Standard 7 - 64 bit	
Function module	---	
Number of axes	---	
CPU type	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	
RAM memory (non-ECC type)	2 GB, 4 GB, 8 GB	
Storage	HDD, SSD, SD memory card	
Display size	---	12.1 inches, 15.4 inches
Built-in ports	<ul style="list-style-type: none"> • Ethernet • USB 2.0/3.0 • DVI 	
Interface option	RS-232C, DVI-D	
Expansion slots	1 PCIe slot	

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

Motion Control Industrial PC Platform



IPC Machine Controller		IPC Programmable Multi Axis Controller	
Industrial Box PC		Industrial Box PC	
NY51□-1		NY53□-1	
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 - 64 bit *		Windows Embedded Standard 7 - 32 bit Windows Embedded Standard 7 - 64 bit	
Machine Automation Control Software		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		8 GB	
HDD, SSD, 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		RS-232C	
1 PCIe slot		1 PCIe slot	

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

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	
	Backup operation	24VDC±5%	
Backup time (25°C, initial characteristics)		6 min. (120 W)	6 min. (240 W)
I/O signal		Yes (RJ45)	
Dimensions (W × D × H mm)		94×100×100	148×100×100
Weight of unit		Approx. 0.8 kg	Approx. 1.3 kg

* Revision number 04 or higher.

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