Industrial PC Platform

Openness meets Automation Control

Powerful performance – maximize output
Rock-solid build – improve uptime
Real-time OS inside – reliable machine control

OMRON

Industrial PC

Powerful. Tough. Future proof.

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
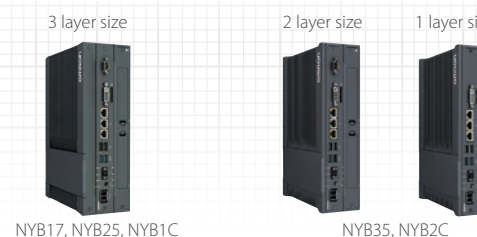- Rock-solid architecture. Die-cast aluminum case

Active cooling and air-flow
isolated from the electronics

Intel® Xeon® Processor

Intel® Core™ i7 Processor

Intel® Core™ i5 Processor

Intel® Celeron® Processor

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 storages 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

Industrial Panel PC: very stylish…

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

A few details…

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

Performance

- Based on Intel® Celeron® 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

Industrial Box PC

3 layer size   2 layer size   1 layer size

NYB17, NYB25, NYB1C   NYB35, NYB2C

*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.

Industrial PC
IPC Machine Controller

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
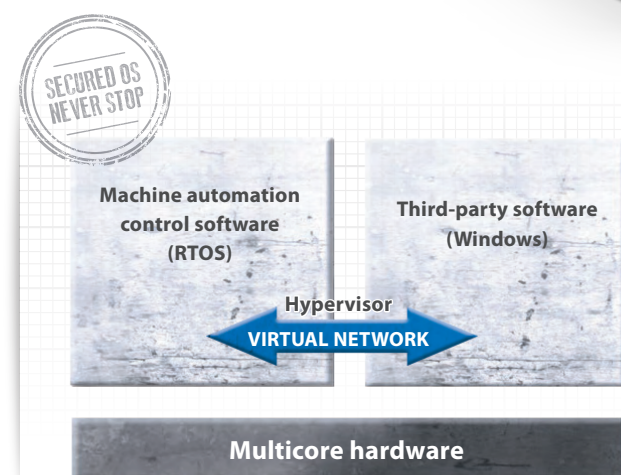
Sysmac Studio

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

reddot award 2016 *1 winner

GOOD DESIGN AWARD 2017 *2

SECURED OS NEVER STOP

Machine automation control software (RTOS)

Third-party software (Windows)

Hypervisor

VIRTUAL NETWORK

Multicore hardware

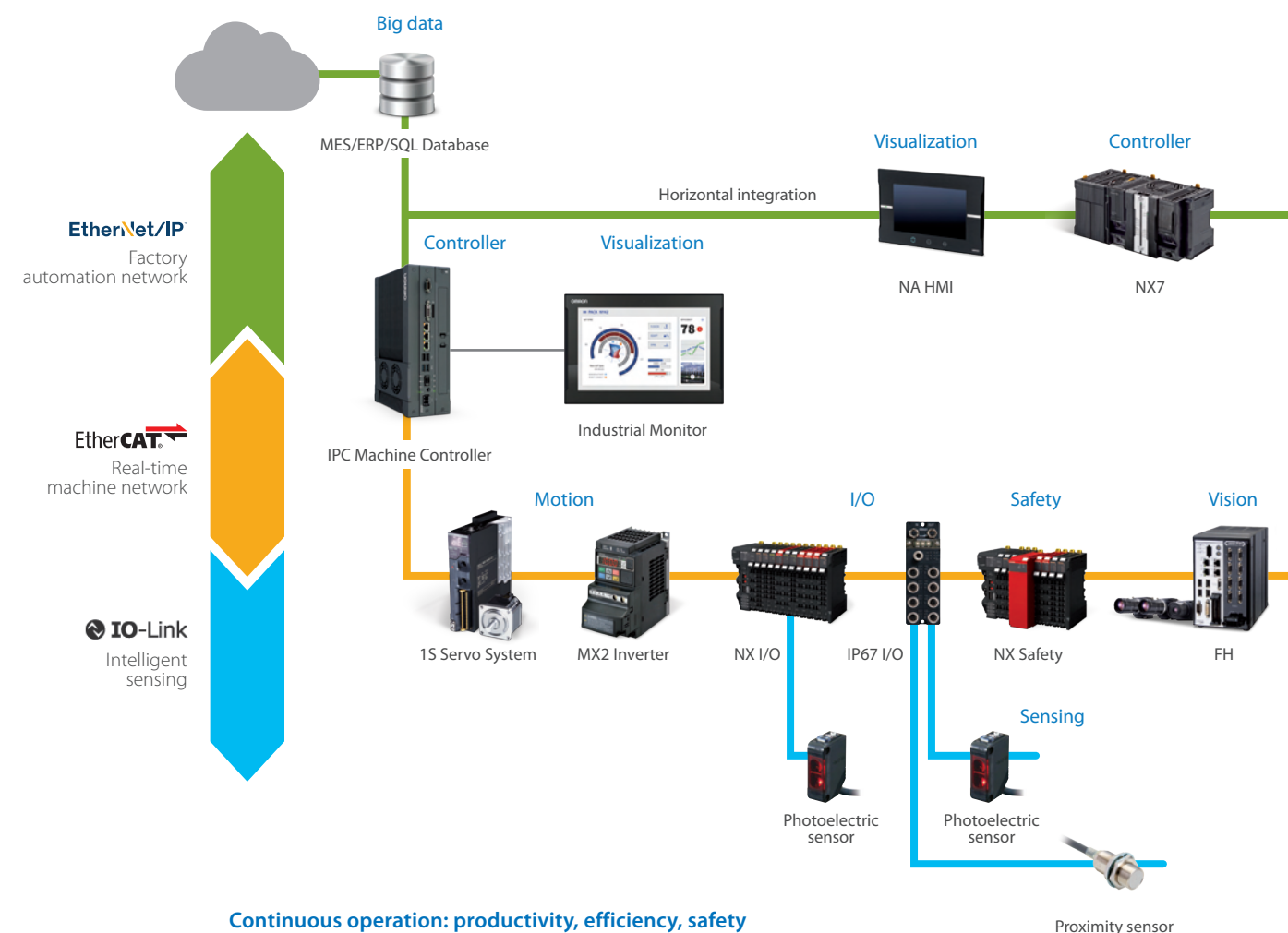## The beating heart of the IPC Machine Controller

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

Big data

MES/ERP/SQL Database

EtherNet/IP
Factory automation network

Visualization

Controller

Horizontal integration

Controller | Visualization

NA HMI | NX7

EtherCAT
Real-time machine network

IPC Machine Controller

Industrial Monitor

IO-Link
Intelligent sensing

Motion | I/O | Safety | Vision

1S Servo System | MX2 Inverter | NX I/O | IP67 I/O | NX Safety | FH

Sensing

Photoelectric sensor | Photoelectric sensor

Proximity sensor

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

90%

Industrial PC Platform family

INDUSTRIAL PC PLATFORM

	Industrial Box PC	Industrial Panel PC
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	
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® 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
RAM memory	8 GB, 16 GB, 32 GB (ECC supported) *1 2 GB, 4 GB, 8 GB, 16 GB (non ECC)	
Storage	HDD, SSD, SD memory card	
Display size	—	12.1 inches, 15.4 inches
Built-in ports	• 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	

*1. Only for models with Intel® Xeon® Processor.

INDUSTRIAL PC PLATFORM

	Industrial Box PC	Industrial Panel PC
Product name	**IPC Machine Controller**	
Type	**Industrial Box PC**	**Industrial Panel PC**
Model	**NY51□-1**	**NY53□-1/NY53□-5**
Description	Two operating systems: Windows and Real-Time OS	
Operating system	Windows Embedded Standard 7 - 32 bit *2 Windows Embedded Standard 7 - 64 bit	
Function module	Machine Automation Control Software or Machine Automation Control Software + NC	
Number of axes	16, 32, 64	
CPU type	Intel® Core™ i7-4700EQ Processor 4th generation CPU with Fan Unit for active cooling	
RAM memory	8 GB (non-ECC type)	
Storage	HDD, SSD, SD memory card	
Display size	—	12.1 inches, 15.4 inches
Built-in ports	• Ethernet • EtherNet/IP • EtherCAT • USB 2.0/3.0 • DVI	
Interface option	RS-232C, DVI-D, NY Monitor Link	
Expansion slots	1 PCIe slot	

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

INDUSTRIAL PC PLATFORM

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	• 1 Power Connector　　• 1 DVI-D Connector • 2 USB Type-A 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	
	Backup operation	24VDC±5%	
Backup time (25℃, 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.

OMRON

Would you like to know more?

OMRON EUROPE B.V.

☏ +31 (0) 23 568 13 00

🖥 industrial.omron.eu

Stay in touch

🐦 twitter.com/omroneurope

▶ youtube.com/user/omroneurope

in linkedin.com/company/omron

Austria
Tel: +43 (0) 2236 377 800
industrial.omron.at

Belgium
Tel: +32 (0) 2 466 24 80
industrial.omron.be

Czech Republic
Tel: +420 234 602 602
industrial.omron.cz

Denmark
Tel: +45 43 44 00 11
industrial.omron.dk

Finland
Tel: +358 (0) 207 464 200
industrial.omron.fi

France
Tel: +33 (0) 1 56 63 70 00
industrial.omron.fr

Germany
Tel: +49 (0) 2173 680 00
industrial.omron.de

Hungary
Tel: +36 1 399 30 50
industrial.omron.hu

Italy
Tel: +39 02 326 81
industrial.omron.it

Netherlands
Tel: +31 (0) 23 568 11 00
industrial.omron.nl

Norway
Tel: +47 (0) 22 65 75 00
industrial.omron.no

Poland
Tel: +48 22 458 66 66
industrial.omron.pl

Portugal
Tel: +351 21 942 94 00
industrial.omron.pt

Russia
Tel: +7 495 648 94 50
industrial.omron.ru

South Africa
Tel: +27 (0)11 579 2600
industrial.omron.co.za

Spain
Tel: +34 902 100 221
industrial.omron.es

Sweden
Tel: +46 (0) 8 632 35 00
industrial.omron.se

Switzerland
Tel: +41 (0) 41 748 13 13
industrial.omron.ch

Turkey
Tel: +90 212 467 30 00
industrial.omron.com.tr

United Kingdom
Tel: +44 (0) 1908 258 258
industrial.omron.co.uk

More Omron representatives
industrial.omron.eu