Industrial PC Platform
NY Series

Openness meets Automation Control

Industrial PC

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

Performance

- Based on Intel® Atom® , Celeron®, Core™ i3, Core™ i5, Core™i7, Xeon® processors
- Up to 96 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

Powerful. Tough. Future proof.

Connections

- Options: RS-232C, extra DVI-D or DisplayPort++ *4 for dual monitor, NY Monitor Link or GigE LAN
- PCIe Card Slot Half-length (X1 or X4 depending on CPU)
- SD Memory card slot *4 (2.0 spec and up to 32 GB)
- DVI or DisplayPort++ *4
- 3x RJ45 Gigabit Ethernet ports
- CFast card slot *3
- 2x USB2.0, 2x USB3.0
- Storages devices: SSD (MLC and long-life SLC types) Second drive option Hardware-RAID (RAID1)
- 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

iF DESIGN AWARD 2016 *2

A few details…

- 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

Industrial Box PC

3 layer size	2 layer size	1 layer size (with FAN)	1 layer size (without FAN)
			
NYB27, NYB2E, NYB37, NYB55	NYB35, NYB2C, NYB65, NYB13	NYB27, NYB2E, NYB37, NYB55	NYB35, NYB2C, NYB2A, NYB13, NYB3A

*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.
*4. 11th generation CPU: Equipped with DisplayPort++ instead of DVI, but no SD Memory Card slot.

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

- 7th generation Intel® Core™ i5 Four core/4 threads
- Windows 10 IoT Enterprise 2019 LTSC 64bit
- 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

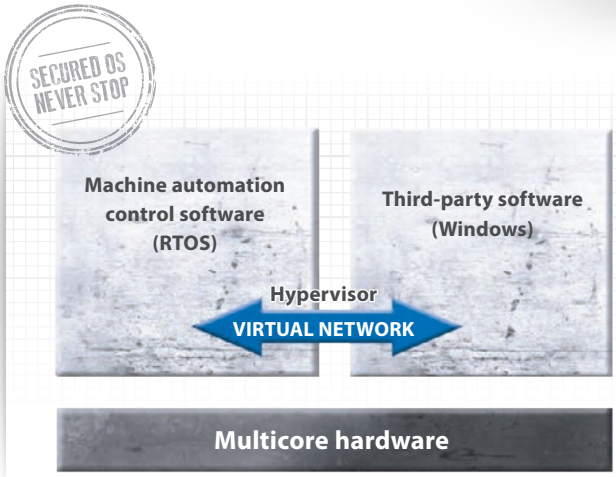
Sysmac Studio

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



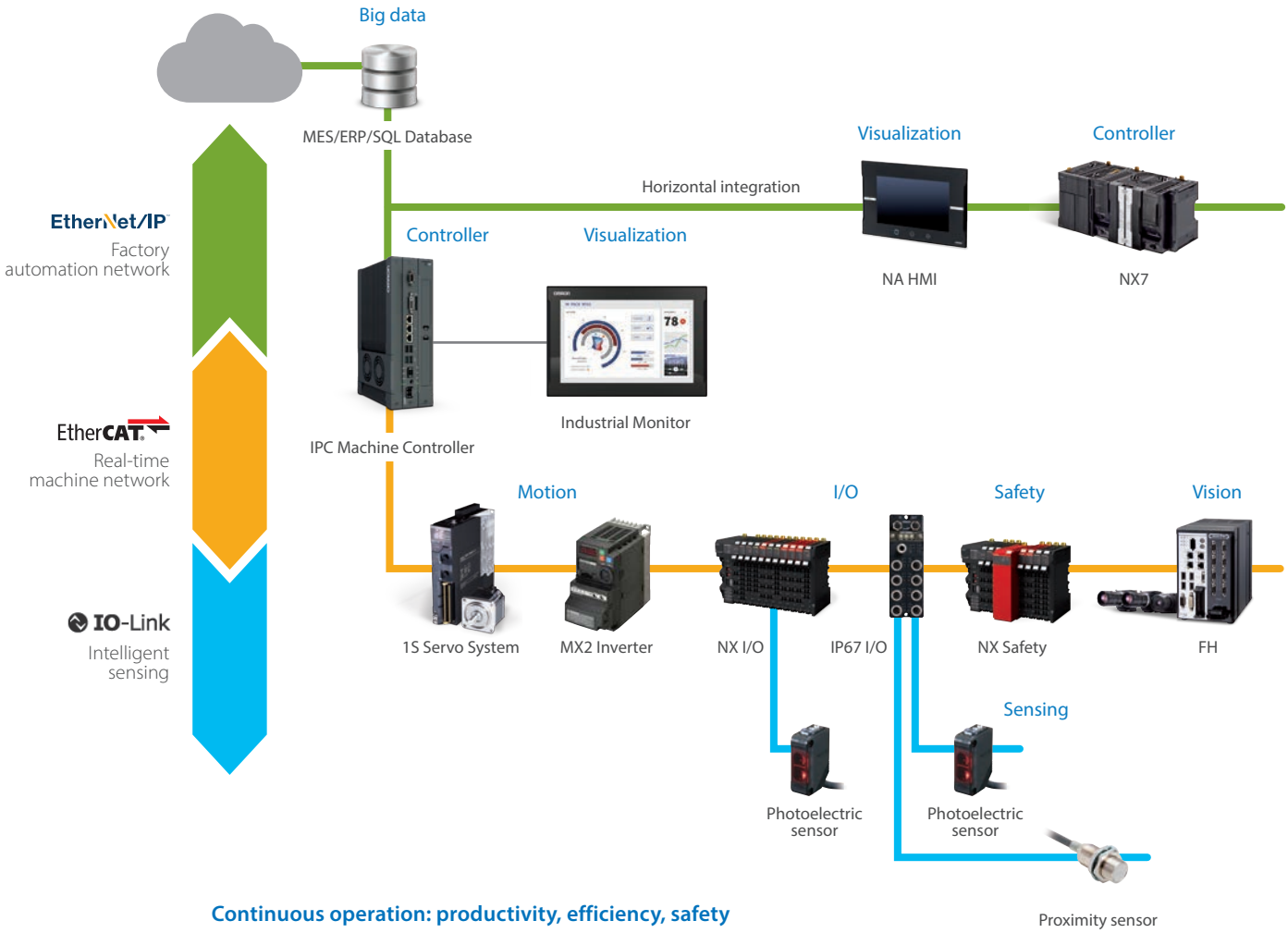
The beating heart of the IPC Machine Controller

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

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 10 IoT Enterprise 2016 LTSB - 64 bit Windows 10 IoT Enterprise 2019 LTSC - 64 bit Windows 10 IoT Enterprise 2021 LTSC - 64 bit		
Function module	—		
Number of axes	—		
CPU type	Intel® Xeon® W-11865MRE 11th generation CPU with Fan Unit for active cooling Intel® Core™ i7-1185GRE 11th generation CPU with Fan Unit for active cooling Intel® Core™ i5-1145GRE 11th generation CPU with Fan Unit for active cooling Intel® Core™ i5-1145GRE 11th generation CPU with fanless cooling Intel® Core™ i3-1115GRE 11th generation CPU with fanless cooling Intel® Core™ i7-7820EQ Processor 7th 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® Atom® Apollo Lake x5-E3940 Processor with fanless cooling Intel® Atom® x6425RE Processor with fanless cooling	Intel® Core™ i7-1185GRE11th generation CPU with Fan Unit for active cooling Intel® Core™ i5-1145GRE11th generation CPU with Fan Unit for active cooling Intel® Core™ i5-1145GRE 11th generation CPU with fanless cooling Intel® Core™ i3-1115GRE 11th generation CPU with fanless cooling Intel® Atom® x6425RE with fanless cooling Intel® Core™ i7-7820EQ Processor 7th 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® Atom® Apollo Lake x5-E3940 Processor with fanless cooling	
RAM memory	8 GB, 16 GB, 32 GB, 64 GB, 96 GB (ECC supported) *1 2 GB, 4 GB, 8 GB, 16 GB, 32 GB, 64 GB, 96 GB (non ECC)	2 GB, 4 GB, 8 GB, 16 GB, 32 GB, 64 GB (non ECC)	
Storage	SSD, CFast, SD memory card *2		
Display size	—	12.1 inches, 15.4 inches, 18.5 inches	
Built-in ports	• Ethernet • DVI • USB 2.0/3.0/3.1 Gen1 • DisplayPort++ *2		
Interface option	RS-232C, DVI-D, NY Monitor Link, GigE LAN, DisplayPort++ *2	RS-232C, DVI-D, NY Monitor Link, DisplayPort++ *2	
Expansion slots	1 PCIe slot		
RAID	Hardware-RAID (RAID1)	—	

Note:1. Not all combination are possible, please visit the product selector on the global website to make your selection.
*1. Only for models with Intel® Xeon® Processor.
*2. 11th generation CPU: Equipped with DisplayPort (Dual mode: DP++) instead of DVI, but no SD Memory Card slot.

	INDUSTRIAL PC PLATFORM	
		
	IPC Machine Controller	
	Industrial Box PC	**Industrial Panel PC**
	NY51☐-1	**NY53☐-1**
	Two operating systems: Windows and Real-Time OS	
	Windows 10 IoT Enterprise 2019 LTSC - 64 bit	
	Machine Automation Control Software	
	16, 32, 64	
	Intel® Core™ i5-7440EQ Processor 7th generation CPU with Fan Unit for active cooling Intel® Core™ i7-4700EQ Processor 4th generation CPU with Fan Unit for active cooling *3	
	8 GB, 32 GB (non-ECC type)	
	SSD, CFast, SD memory card	
	—	12.1 inches, 15.4 inches
	• Ethernet • EtherNet/IP • EtherCAT • USB 2.0/3.0 • DVI	
	RS-232C, DVI-D, NY Monitor Link	
	1 PCIe slot	
	—	

*3. Not recommended for new projects.

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 (18.5 also available with Nickel Plated front)
Resolution	Up to 1,280 x 800 pixels at 60 Hz		Up to 1,920 x 1,080 pixels at 60 Hz
Colors	16,770,000 colors		
Connectors	• 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	
	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

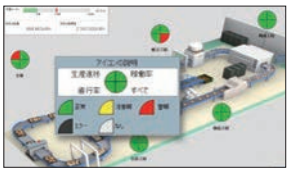
* Revision number 04 or higher.

Several kinds of software combination for solving customer's problem and making new solutions

Supporting customer's new challenges by new visualization and digitization technology

F-Scape **i-BELT** Japan

Easy start of visualization for production line



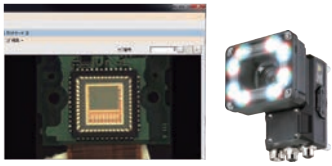
Soft-NA

Visualization and maintenance of machine condition

Comfortable Industrial PC platform powered by smart software

FHV7 Software

Integration of image processing and data collection



Best Match with 3rd party products Japan

New solution created by the combination with 3rd party software

Refer to the Best Match! Pamphlet (Cat No. P139).

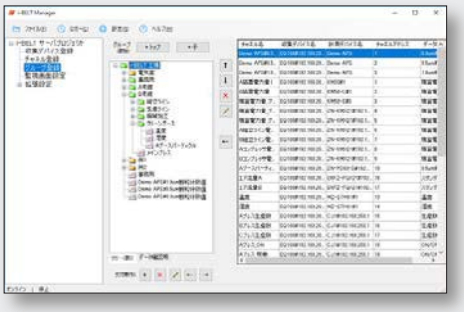
F-Scape

EDGECROSS

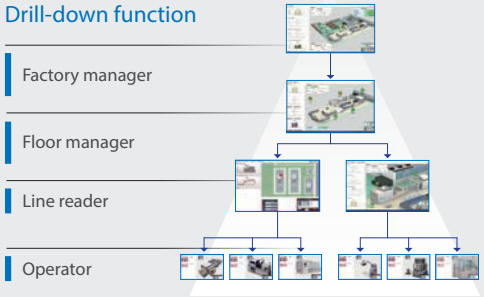
Small start of production data collection and visualization

You can easily utilize data from production sites.
In addition to collecting and visualizing data, this software highlights on-site issues and helps solve problems as an organizational communication tool.

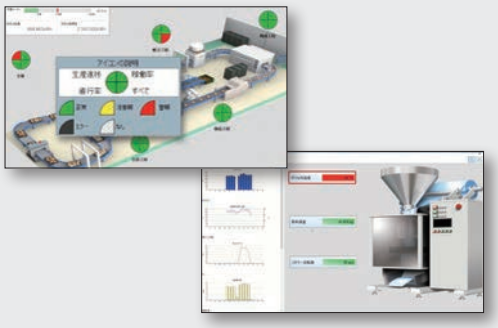
POINT 1 Easy to install



POINT 2 Hierarchical display according to purpose



POINT 3 Errors at a glance



POINT 4 Easy data comparison

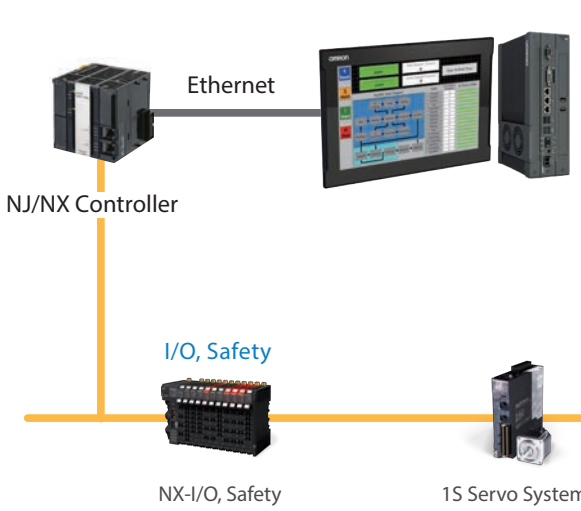
* Now available only in Japan.

Soft-NA

Visualization and improving maintenance

Windows HMI software connecting with NJ/NX Controller seamlessly.
Realizing visualization or better maintenance.

System configuration

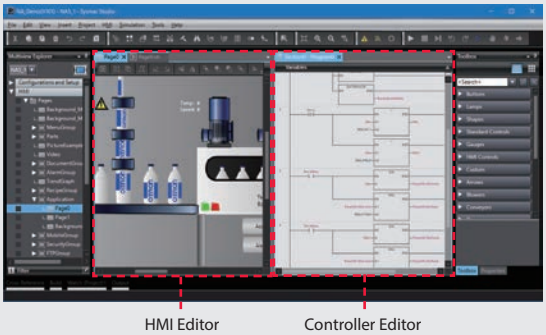


- Installing integrated development environment of HMI
- Additional application software available together
- Wide selection of screen size or CPU selectable from IPC product portfolio

Easy development and operation of control application

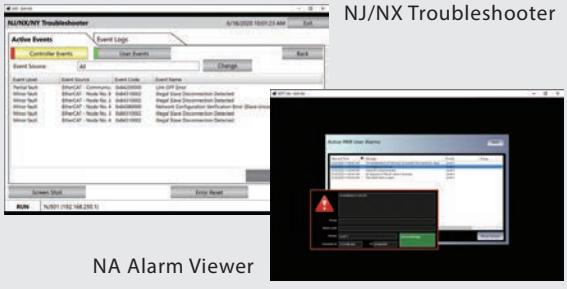
One Software, Sysmac Studio, manages all program assets

Seamless connection with NJ/NX Controller is available by sharing PLC data with integrated development environment or simulator.



Controller troubleshooting

Trouble shooting feature is embedded in.
Quick action for every trouble can be possible by a special video screen to solve the problem.



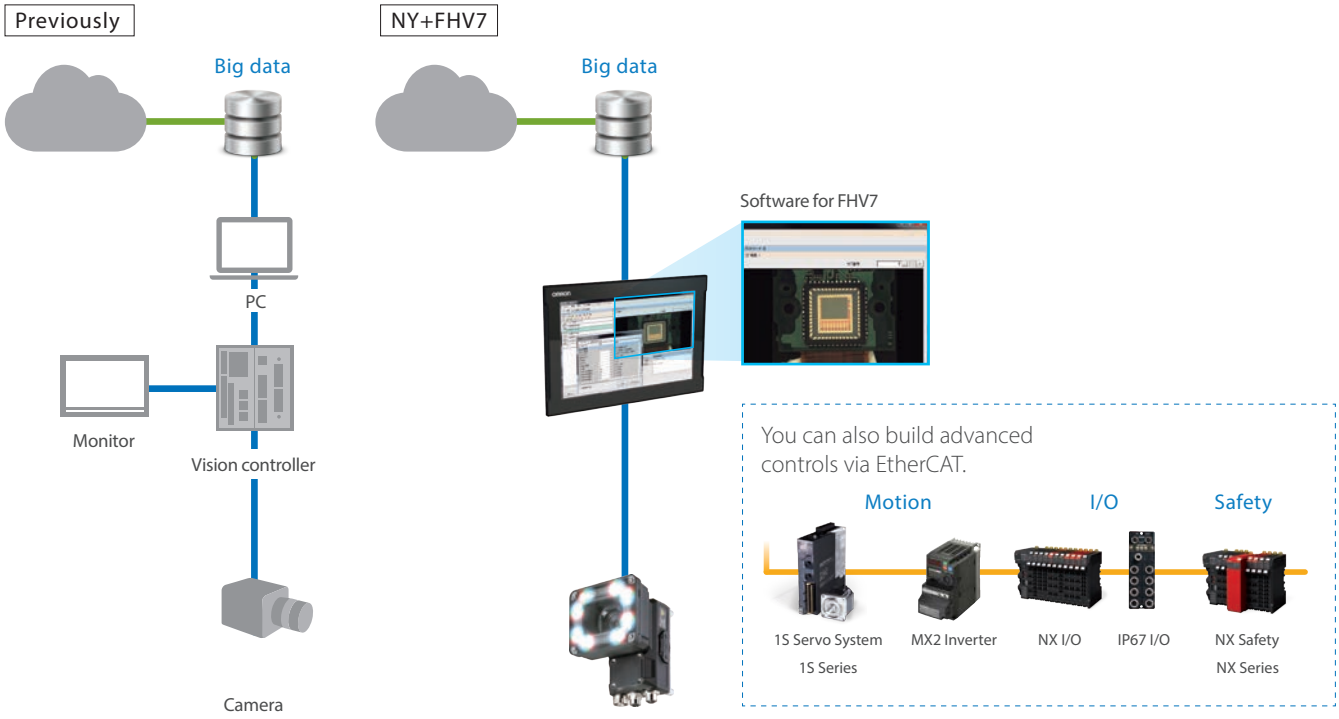
Start the Sysmac Studio and troubleshoot on the site

Software for FHV7

Combine image processing application with data gathering

By tow Items of NY and FHV7: You can build sophisticated image inspection and data collection.

System configuration



* A separate unit is required to connect the FHV7 to EtherCAT.

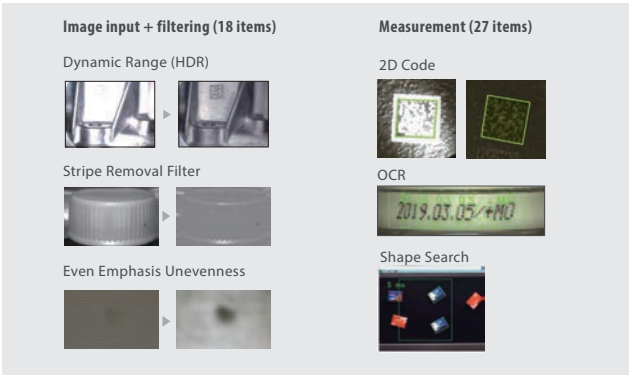
Features of FHV7

Flexibly accommodates object changes

The camera lineup includes the best-in-class resolution* 12 Mpix camera. Its multi-color light and autofocus lens accommodate object variations. *Omron survey as of October 2018.

Advanced image processing functions

Most frequently used processing items come standard, according to customer usage of the high-spec FH Vision System, enabling advanced image processing.



MEMO

MEMO

Note: Do not use this document to operate the Unit.

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