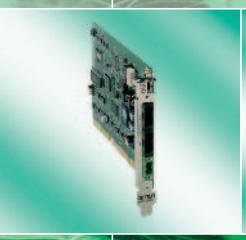
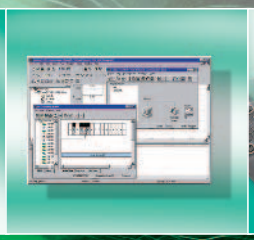
GENERAL CATALOGUE 2004

Automation Systems


- Programmable Controllers
- Wiring Systems
- Industrial Communication
- Remote I/O
- Industrial Information Technology
- Machine Management Tools
- HMI
- Software

Advanced Industrial Automation

Cat. No.Y201-EN2-02 AS

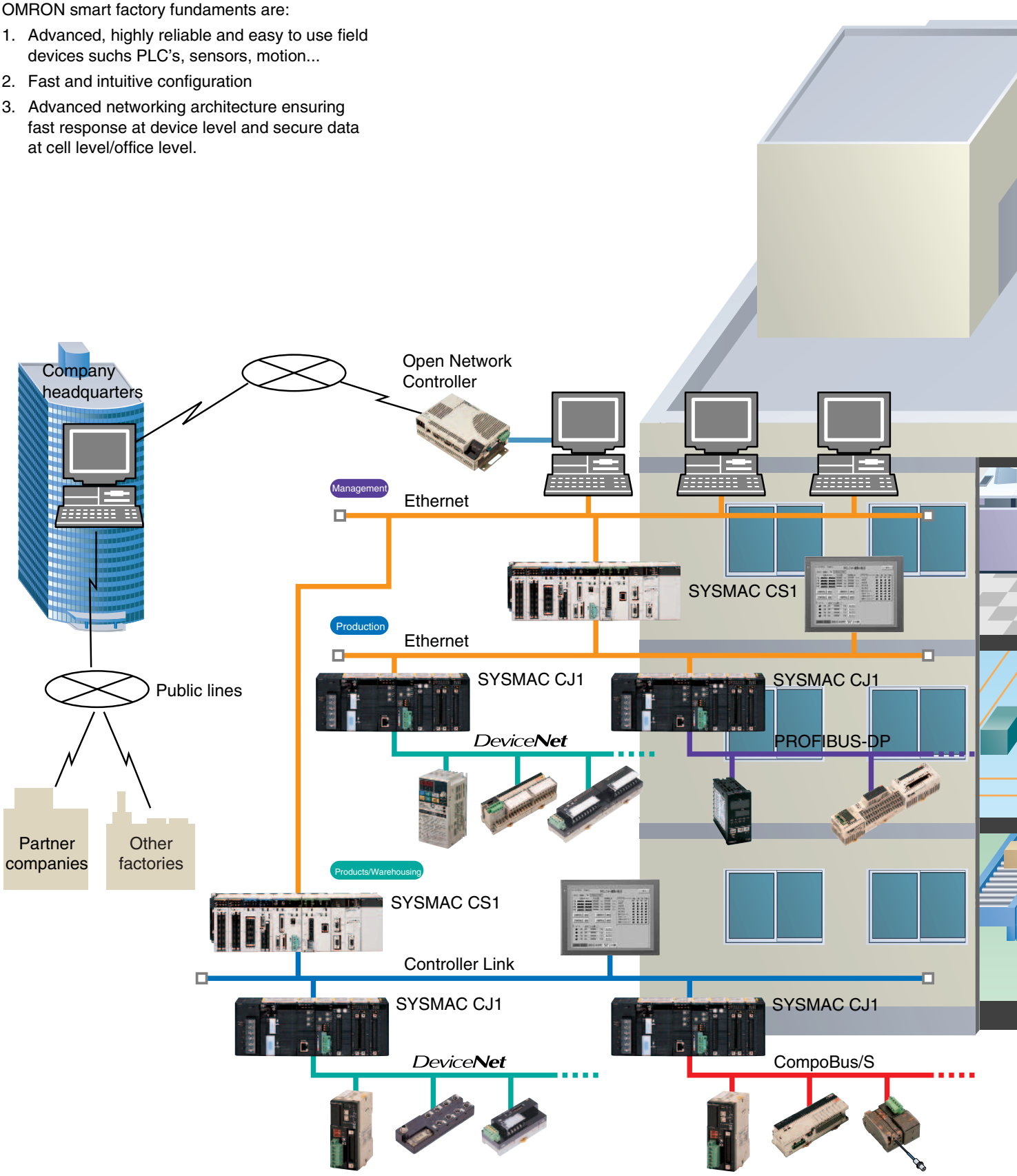
OMRON

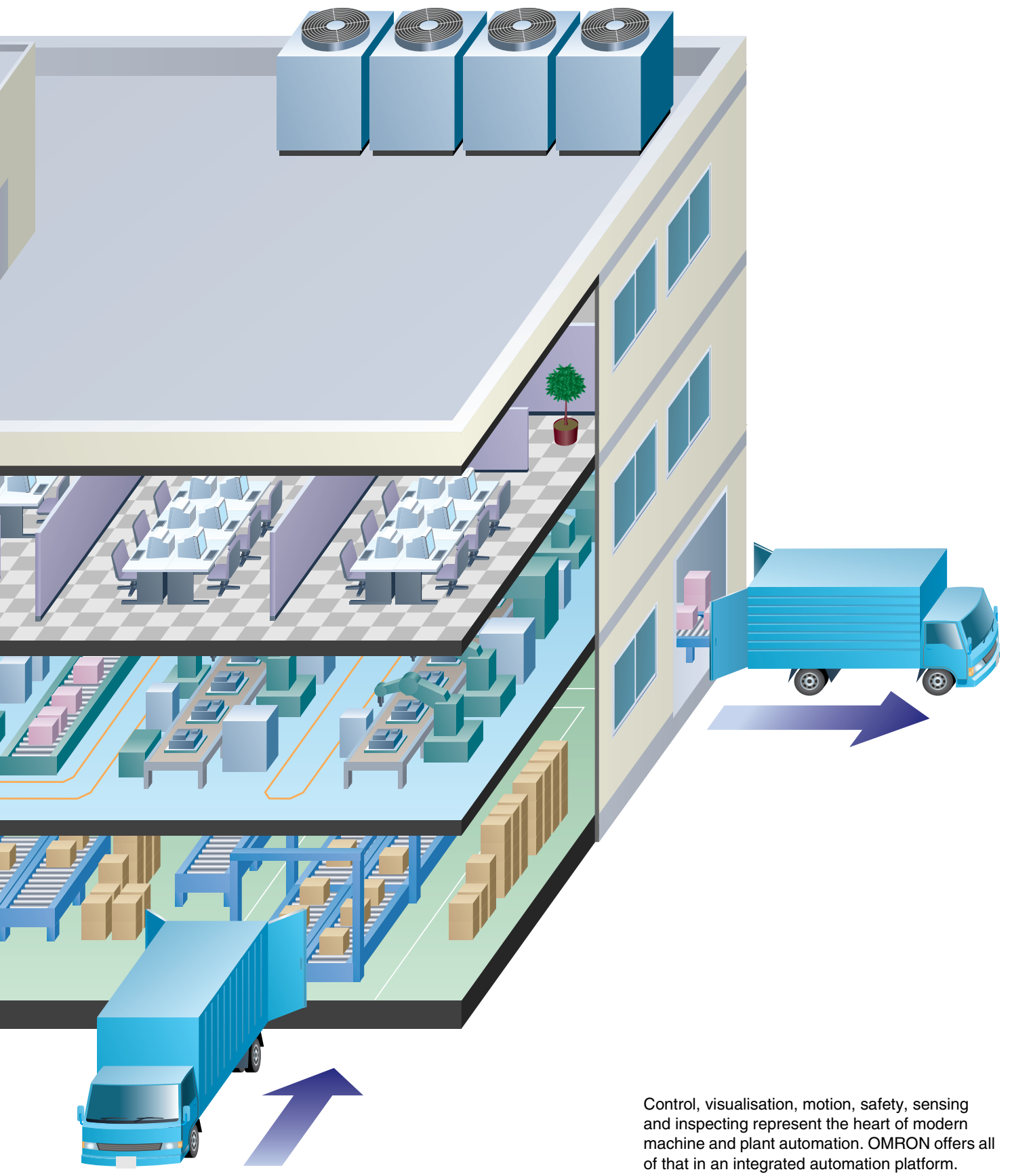
Smart factory at work

Smart & seamless automation from device to office.

OMRON smart factory fundaments are:

1. Advanced, highly reliable and easy to use field devices suchs PLC's, sensors, motion...
2. Fast and intuitive configuration
3. Advanced networking architecture ensuring fast response at device level and secure data at cell level/office level.

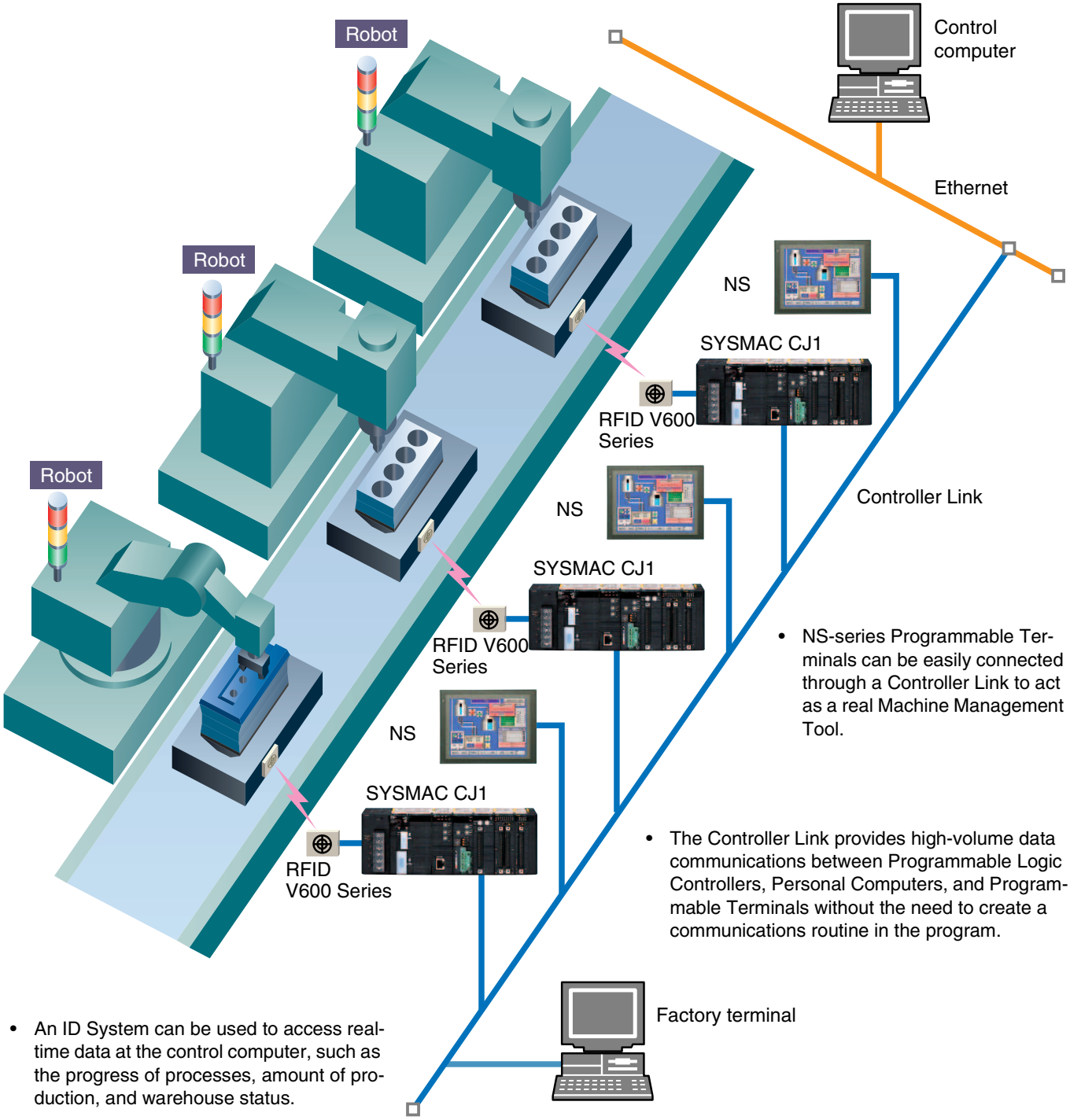




Control, visualisation, motion, safety, sensing and inspecting represent the heart of modern machine and plant automation. OMRON offers all of that in an integrated automation platform.

Smart factory at work: traceability is key for TQM (Total Quality Management)

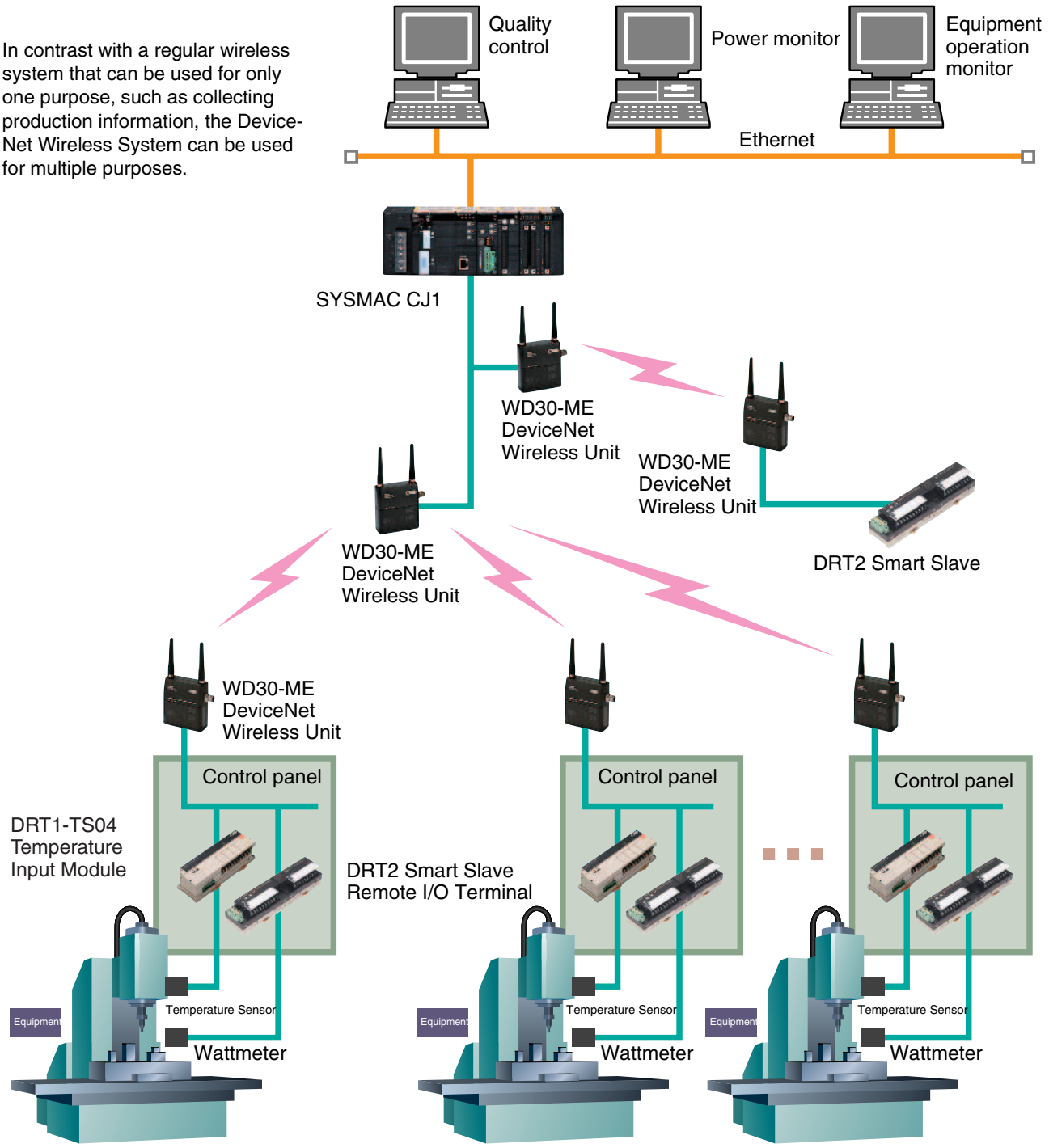
Flexible production by full product traceability using OMRON ID systems.



- NS-series Programmable Terminals can be easily connected through a Controller Link to act as a real Machine Management Tool.
- The Controller Link provides high-volume data communications between Programmable Logic Controllers, Personal Computers, and Programmable Terminals without the need to create a communications routine in the program.
- An ID System can be used to access real-time data at the control computer, such as the progress of processes, amount of production, and warehouse status.

Wireless communication allows lower maintenance, quick production line set-up and space saving.

- In contrast with a regular wireless system that can be used for only one purpose, such as collecting production information, the DeviceNet Wireless System can be used for multiple purposes.

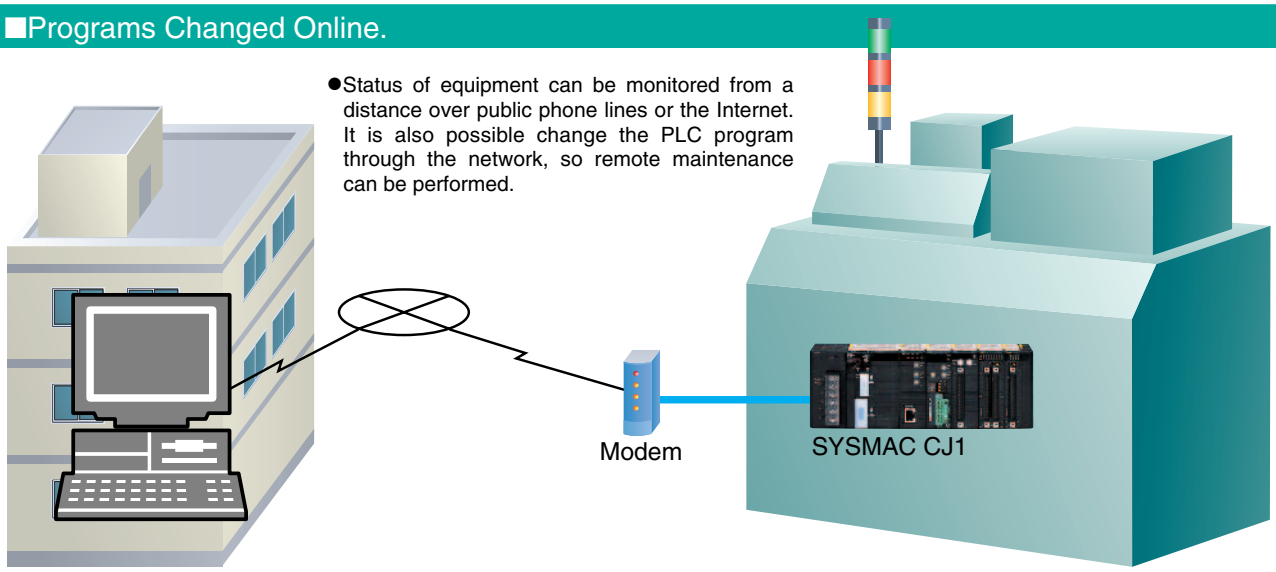


Smart factory at work: you got a call!

Remote diagnosis and program modification can be easily performed through a simple telephone line.

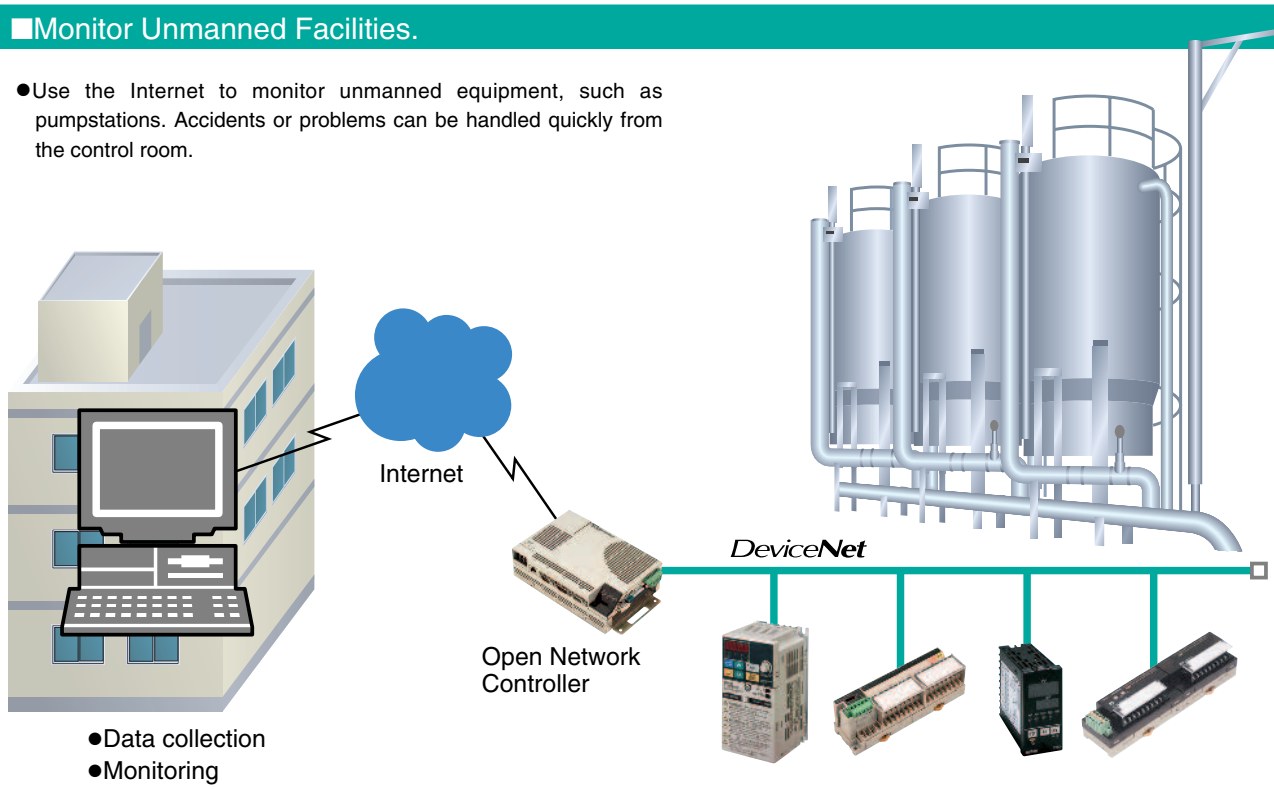
■Programs Changed Online.

●Status of equipment can be monitored from a distance over public phone lines or the Internet. It is also possible change the PLC program through the network, so remote maintenance can be performed.



■Monitor Unmanned Facilities.

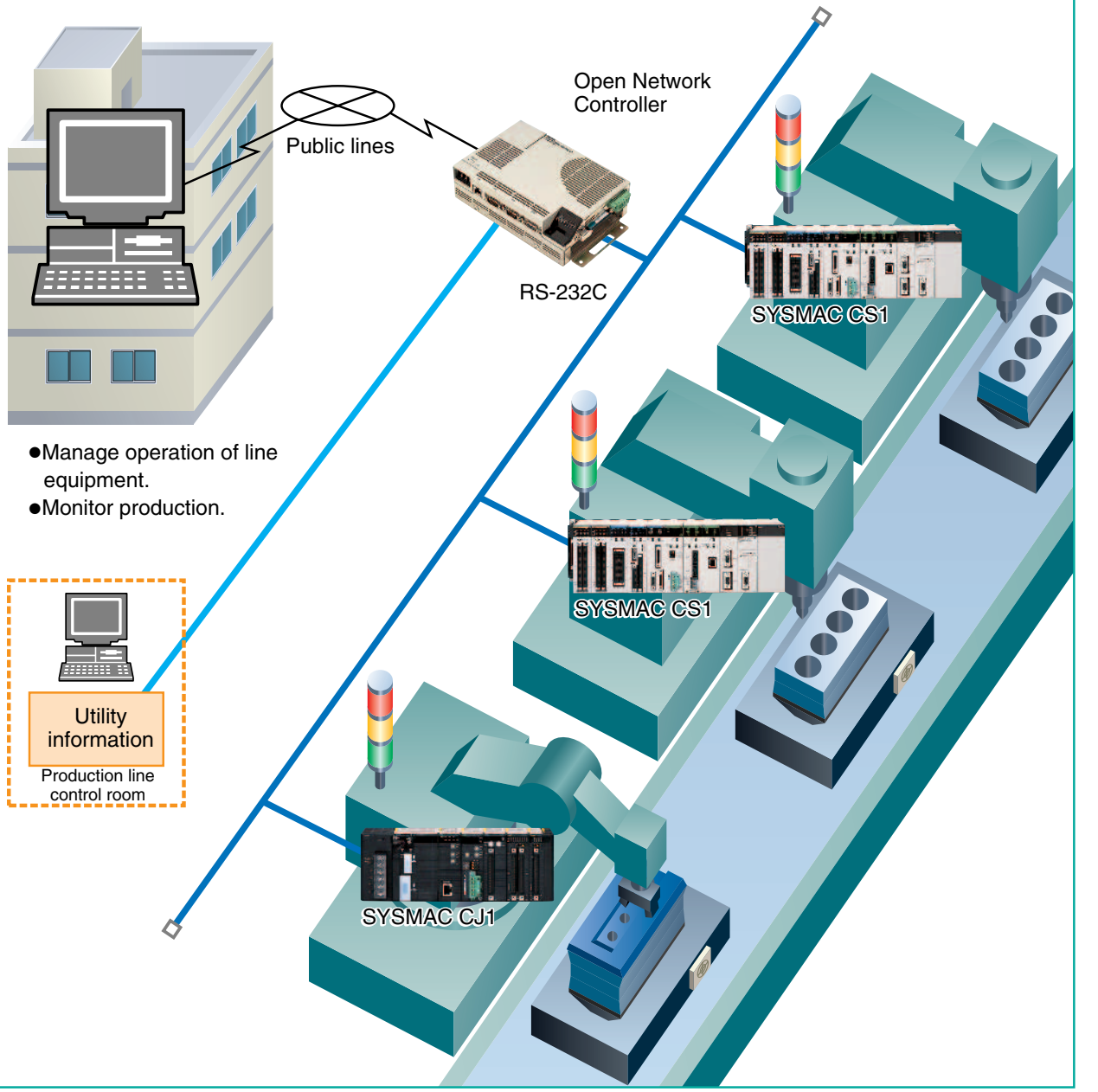
●Use the Internet to monitor unmanned equipment, such as pumpstations. Accidents or problems can be handled quickly from the control room.



●Data collection
●Monitoring

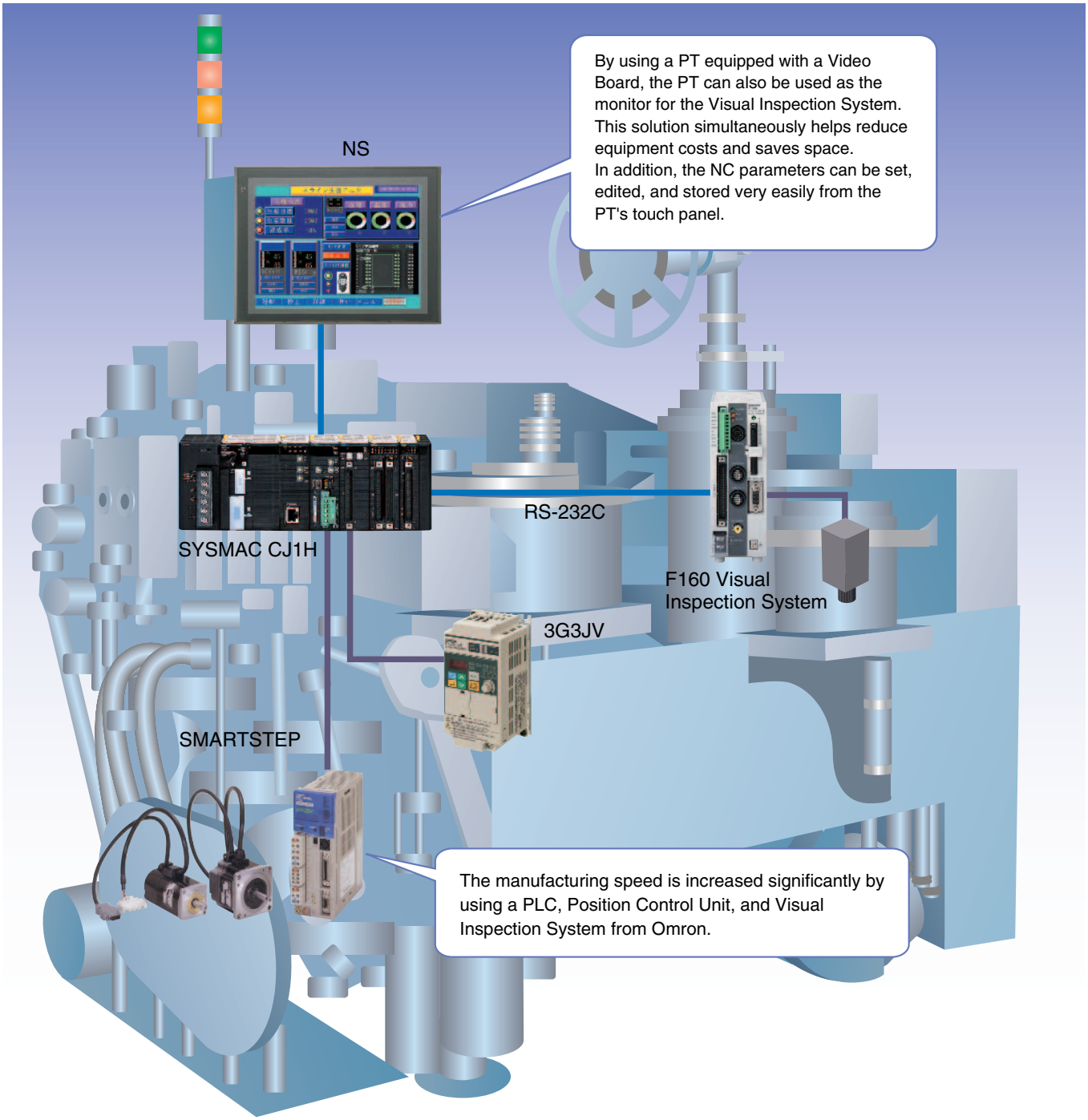
■Smart factory at work: www.<mymachine>.com

●Thanks to OMRON Open Network Controller you can have full access to your machine or plant via Internet. Ease of use is guaranteed!



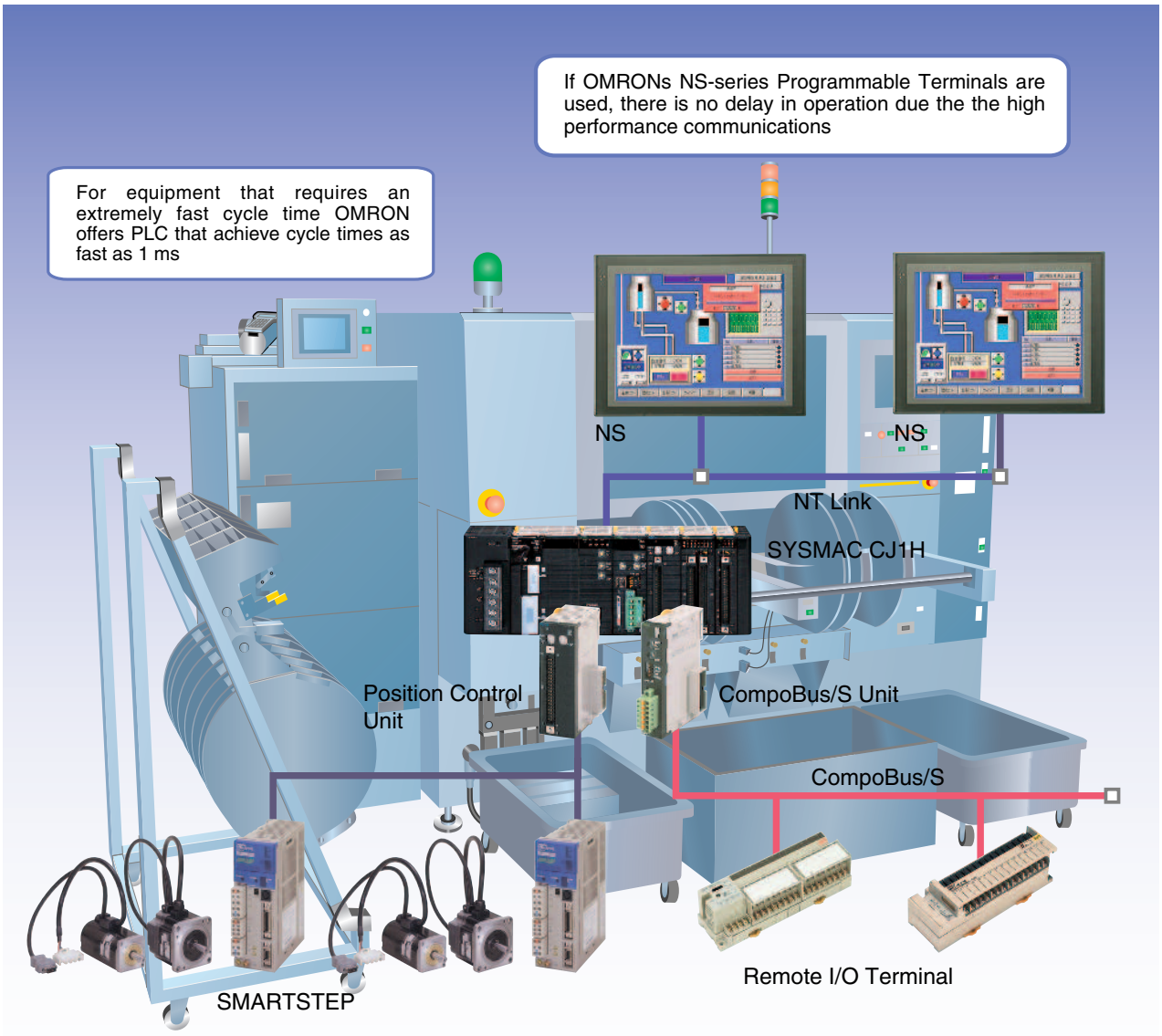
Application examples: vision meets motion in a flexible assembly line

Space, size and development time is cut by 30% by integrating vision and motion.



Application examples: moulding machine

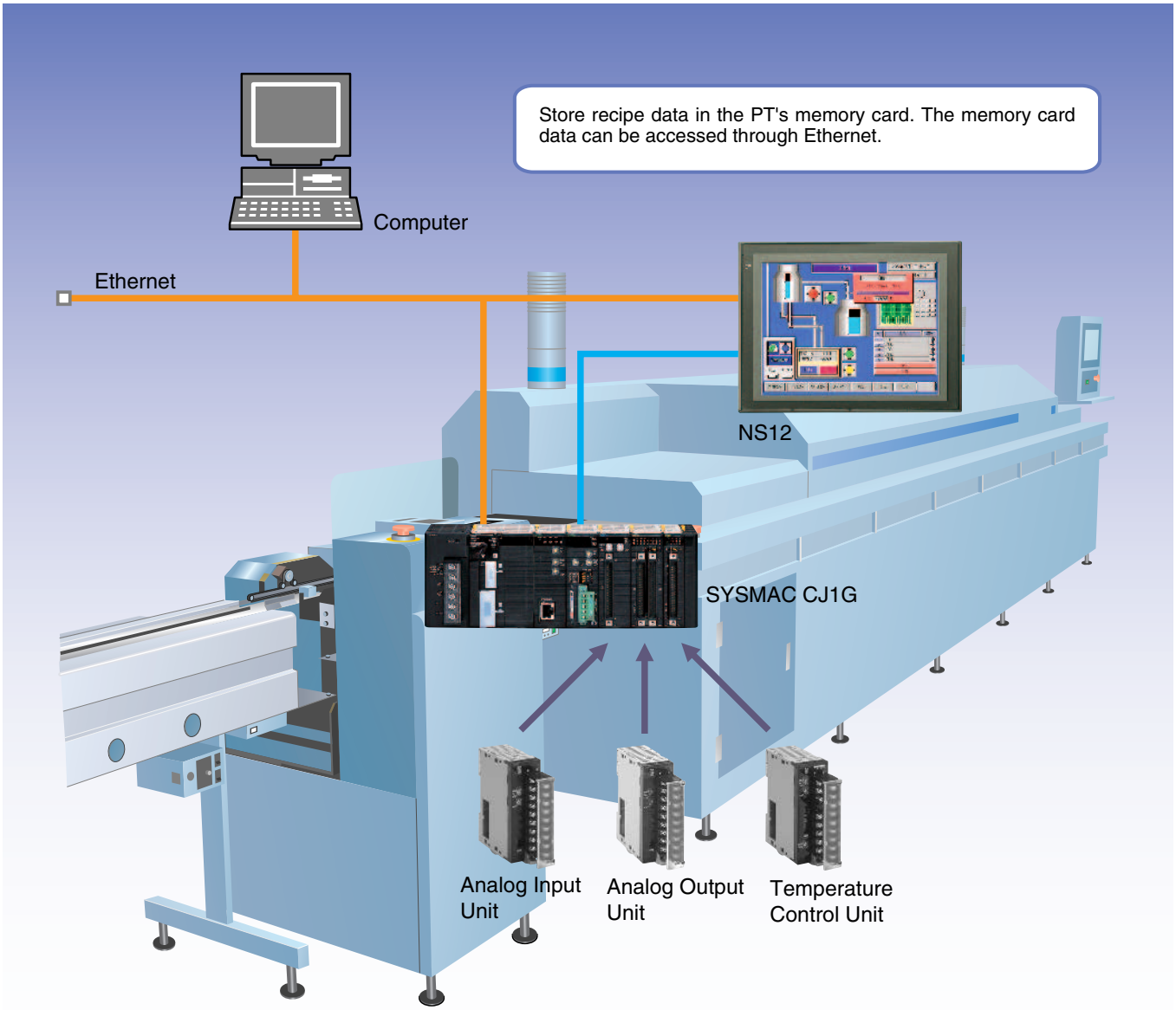
When fast and precise operation is key, a total solution from OMRON offers full satisfaction. Fast operation, accurate positioning, easy connectivity and complete machine management through the NS HMI family.



The high-speed I/O bus Compobus/S has a communication cycle of an astonishingly fast 0.5ms. As a result the same respons times can be achieved as if the I/O units were mounted directly on the PLC. Achieveing true remote I/O.

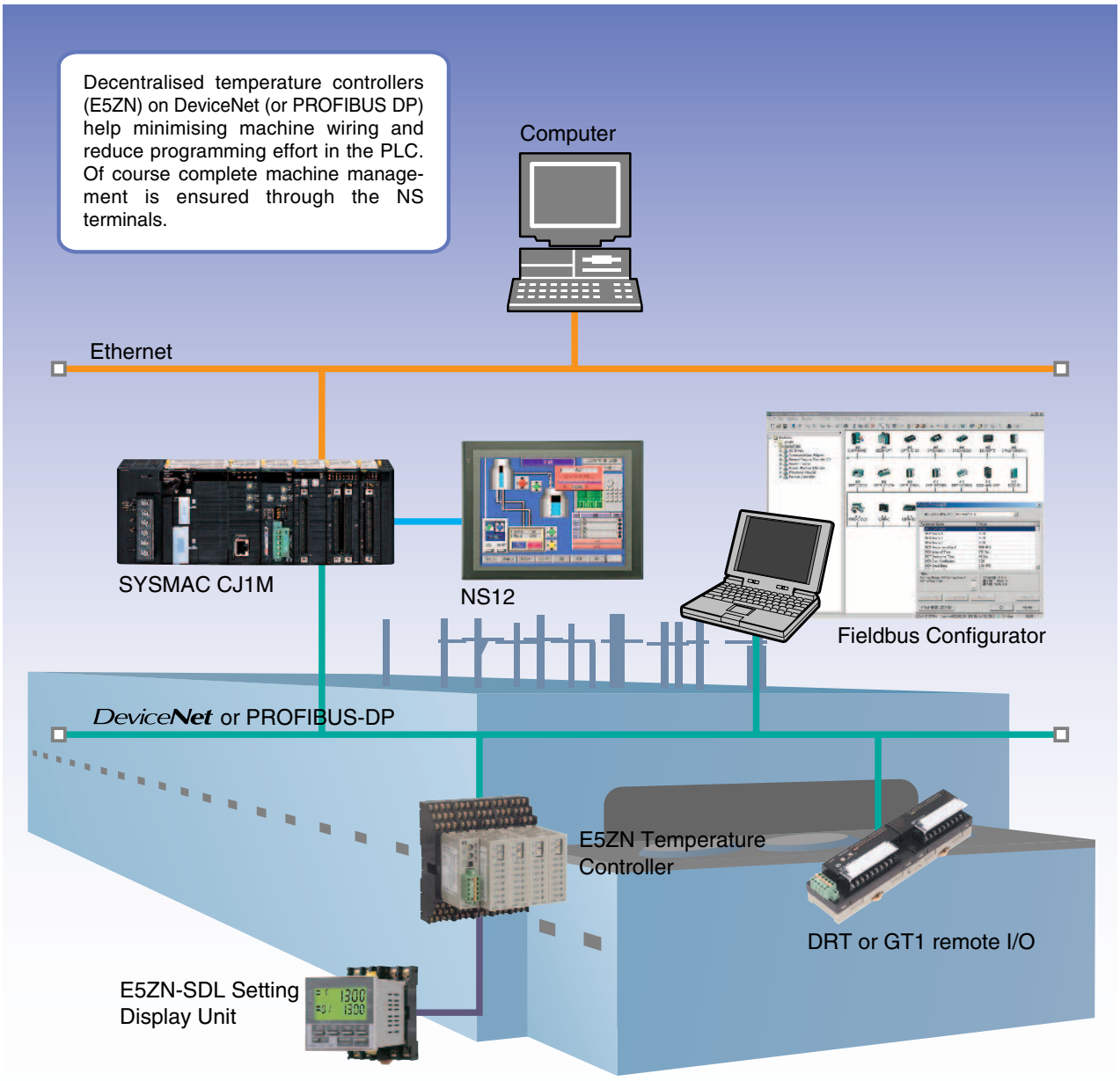
Application examples: total management of solder reflow machine by NS terminals

NS handles recipes via its memory card and communication via Ethernet port.



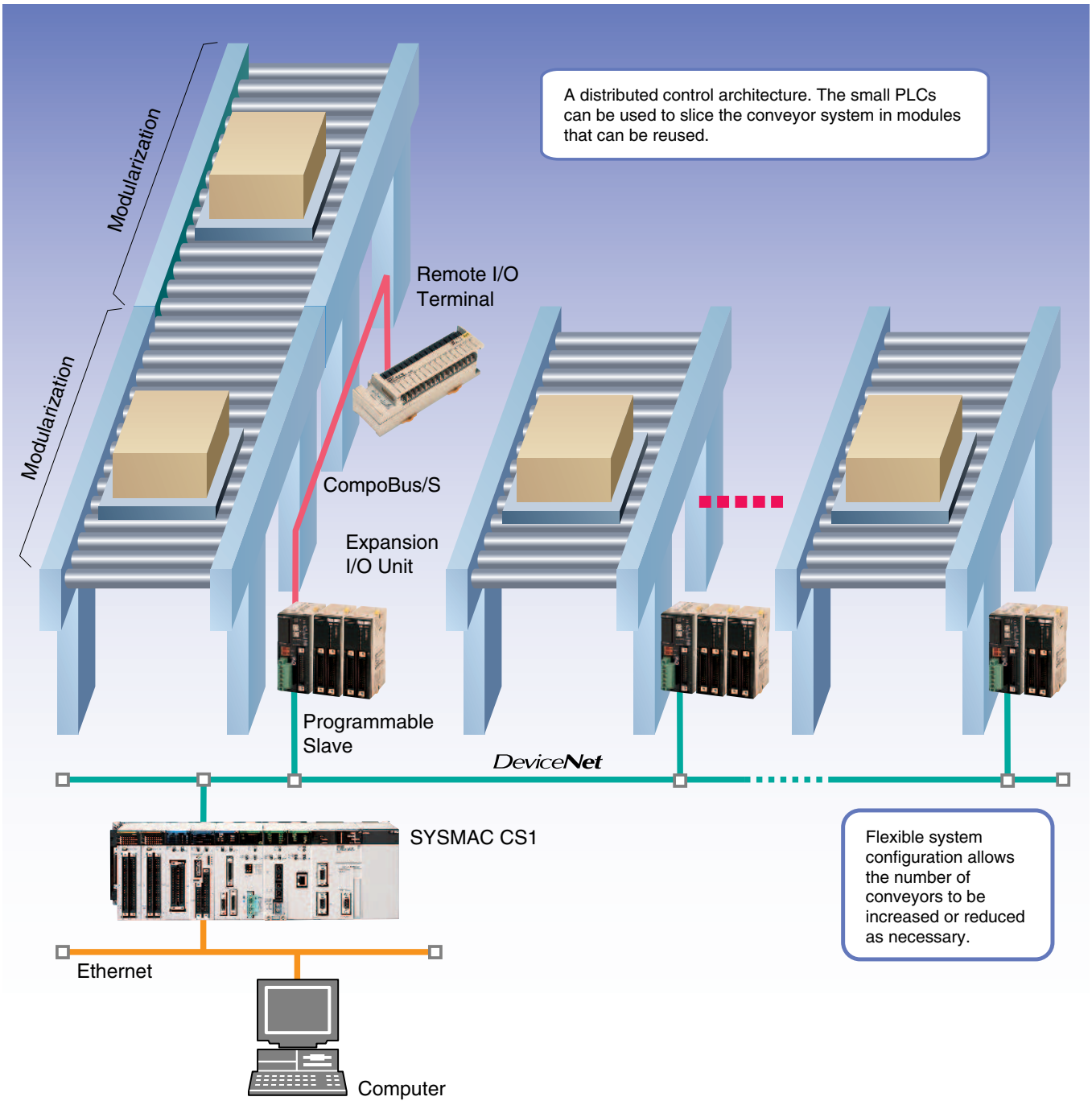
With 4 channels/Unit, the CJ1-series Temperature Control Unit can support multi-point control and save space.

Start-up costs for large-scale temperature control can be substantially reduced with networked temperature controllers

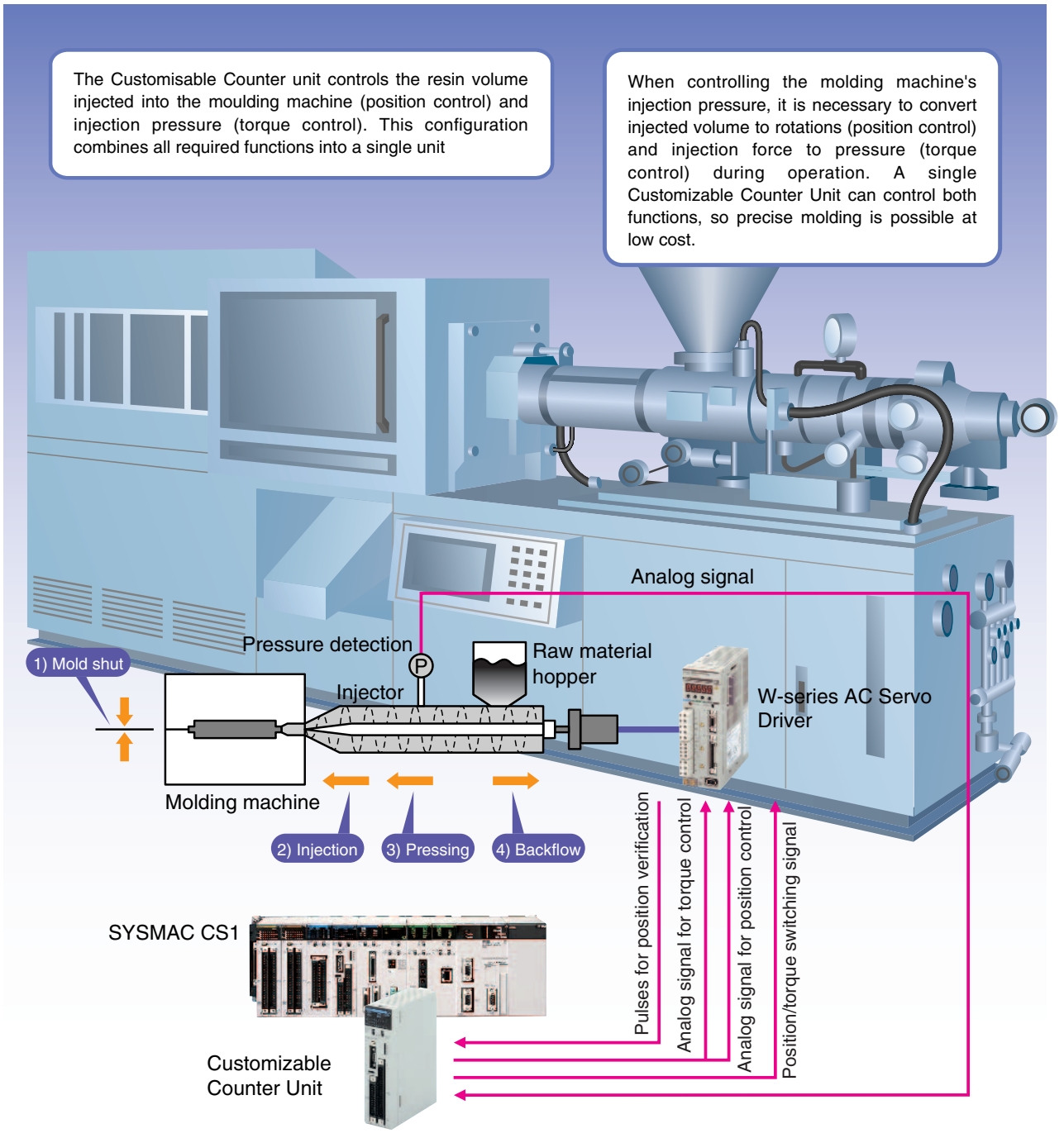


Application examples: modular PLC helps slicing bulky conveyor systems

A compact shape, integrated communication functions and a wide range of functional modules help you create smart modular machines.

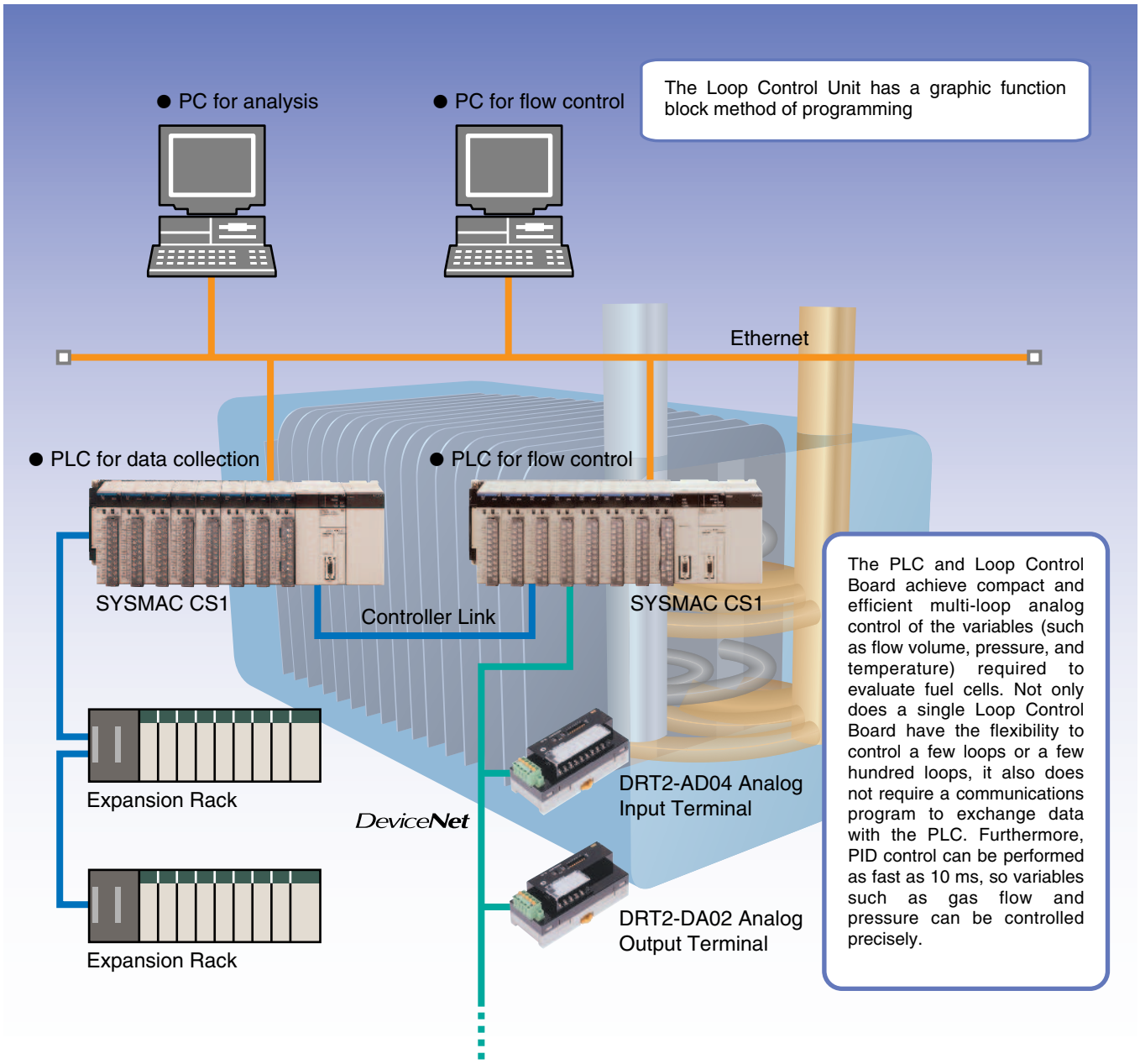


Customisable counter with compact Sigma servo's meet the exact customer needs.

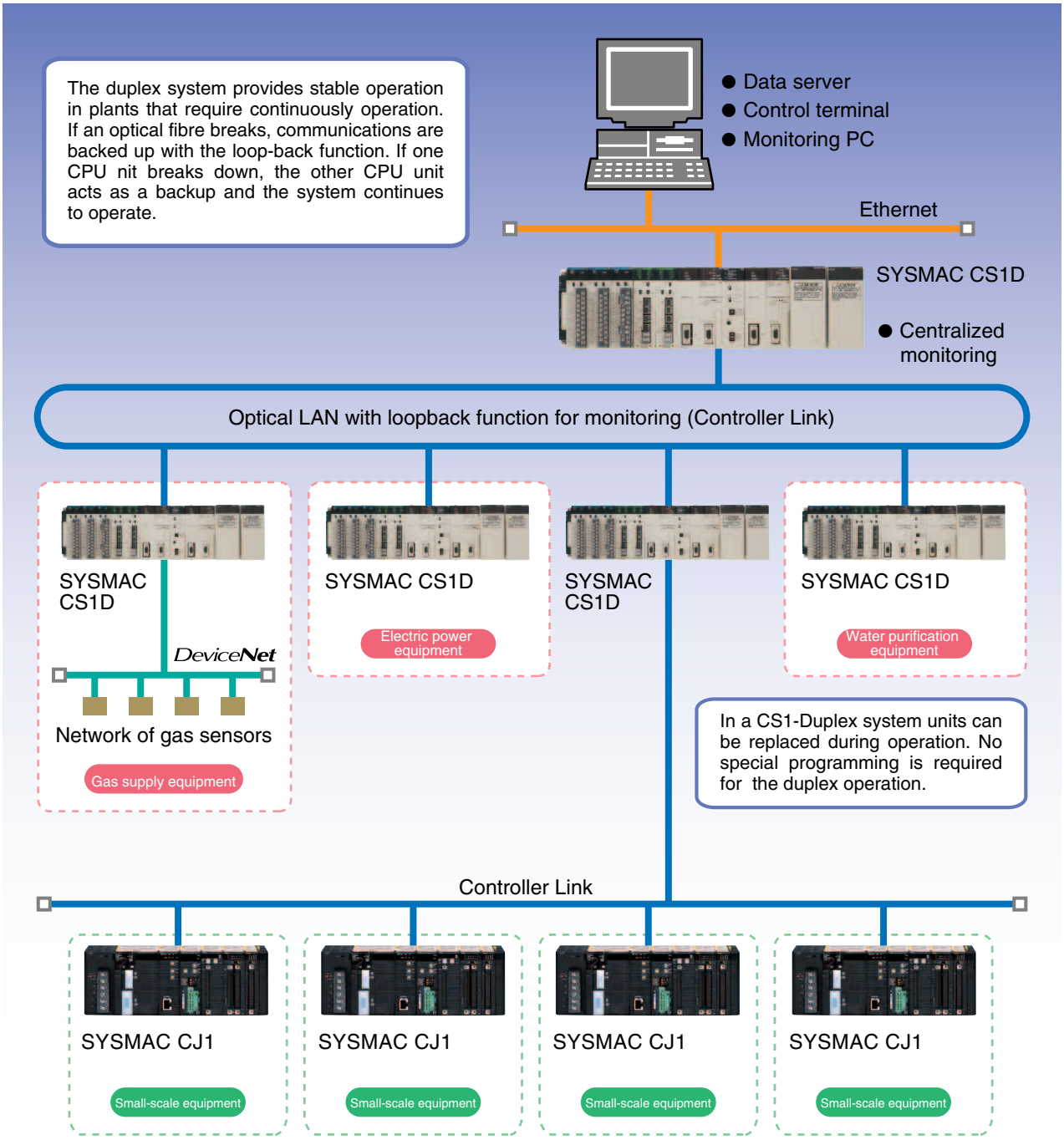


Application examples: Fuel cell evaluation via LCU (loop control unit)

Loop Control Board to provide easy dedicated control of variables such as flow, pressure and temperature.

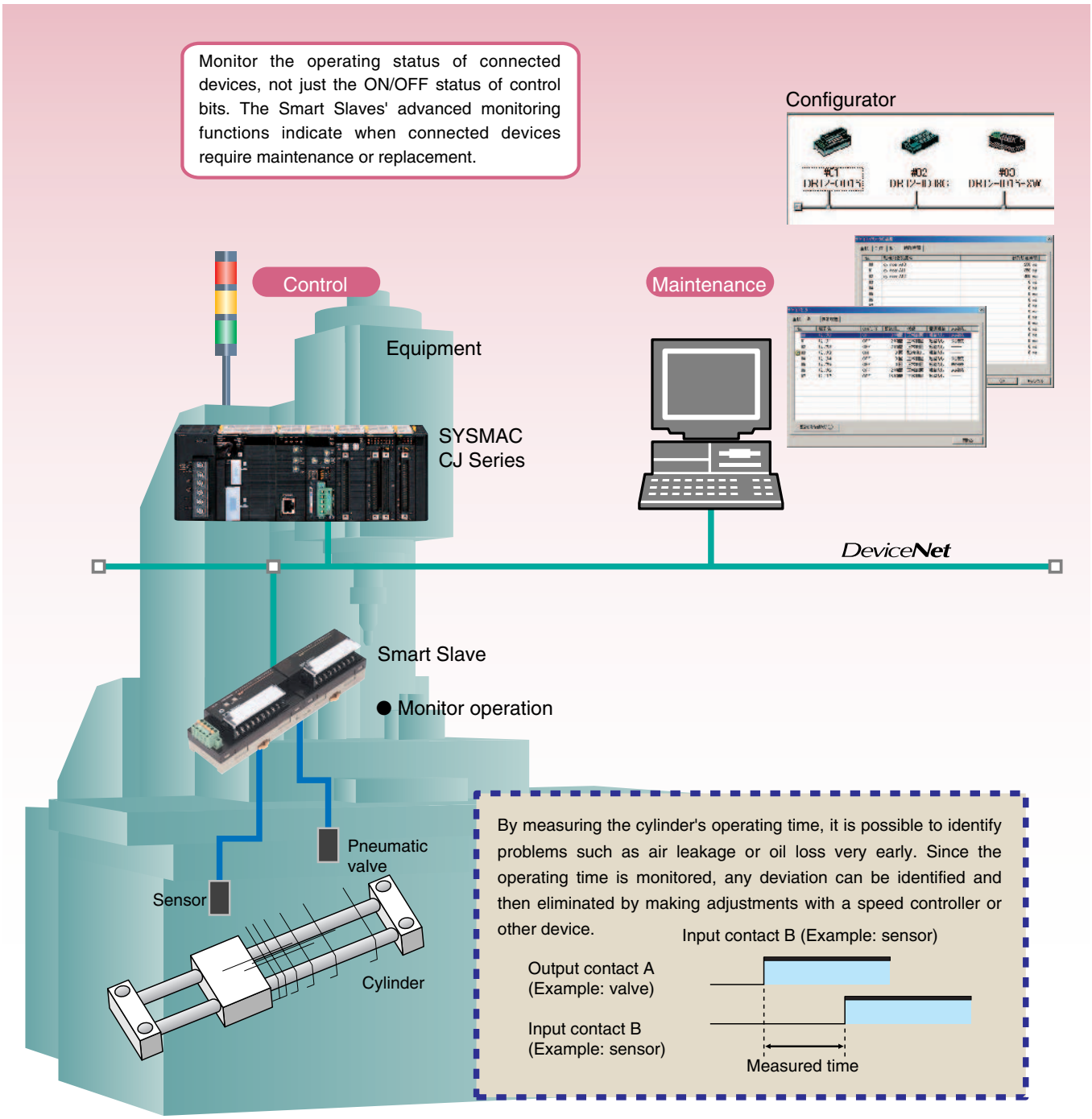


A Duplex PLC system provides highly reliable system redundancy.



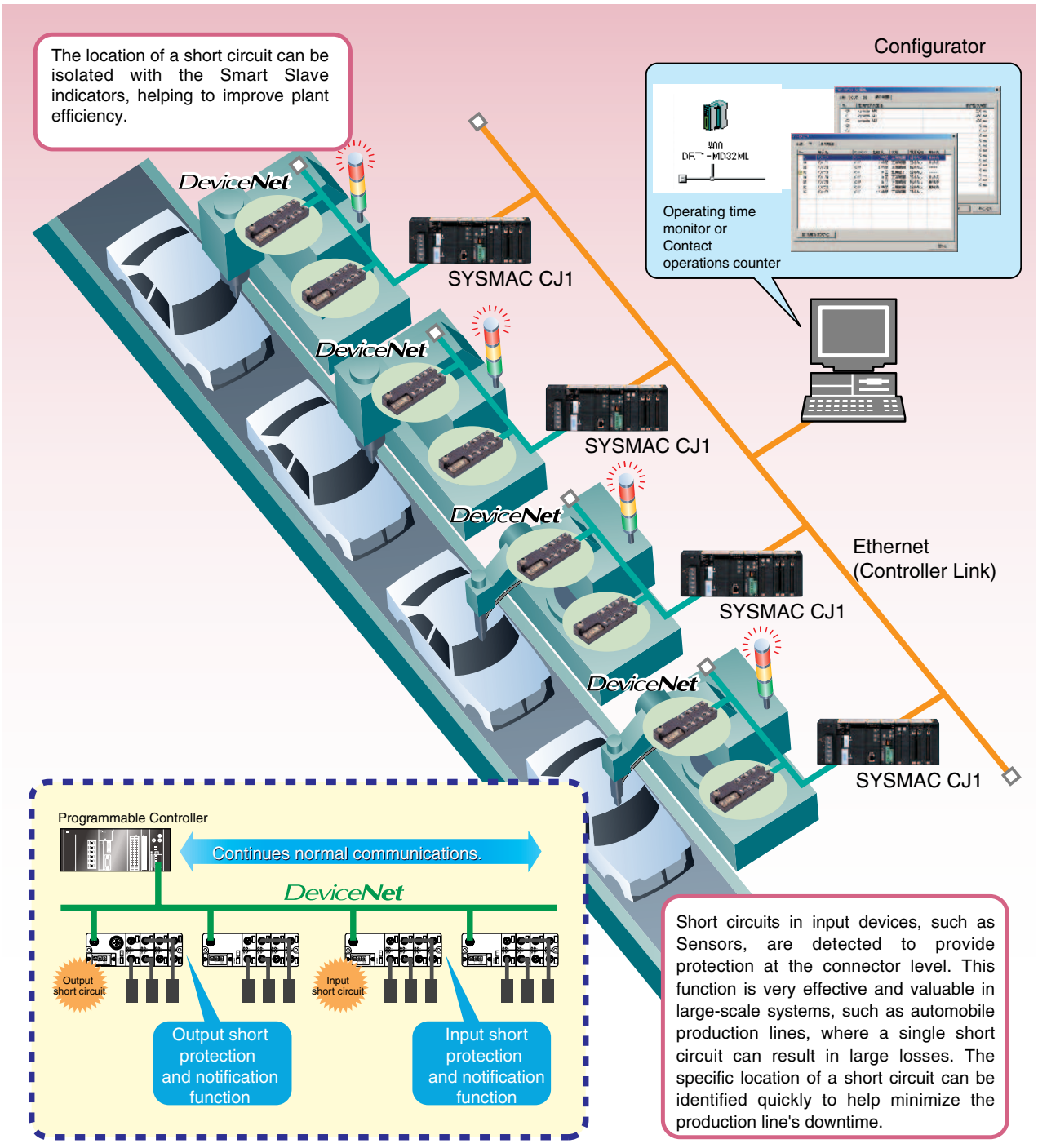
Practical Applications using Smart Slaves

Smart Slaves monitor the status of connected devices and help establish an effective preventive maintenance system.



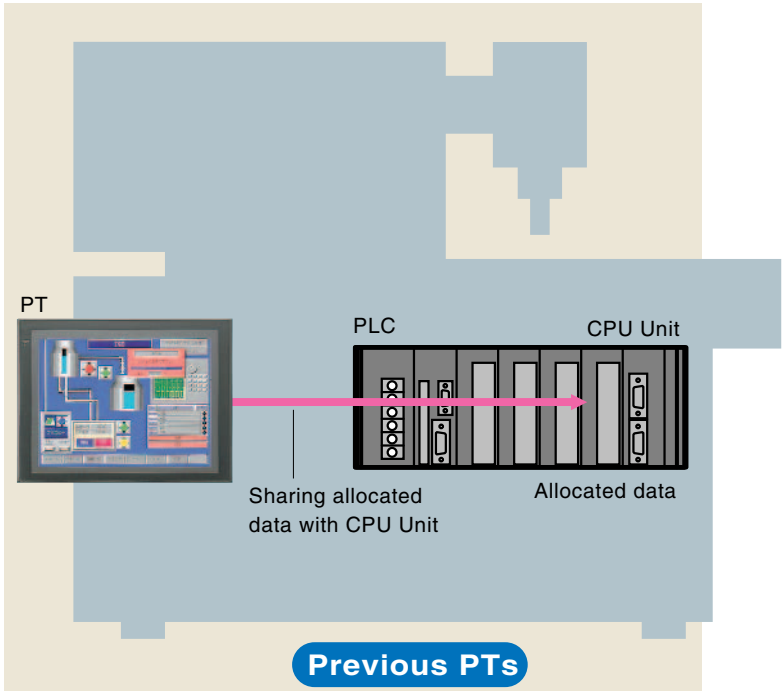
Practical Applications using Smart Slaves

Short-circuits can be isolated quickly to significantly reduce production line downtime.



NS enters a new zone

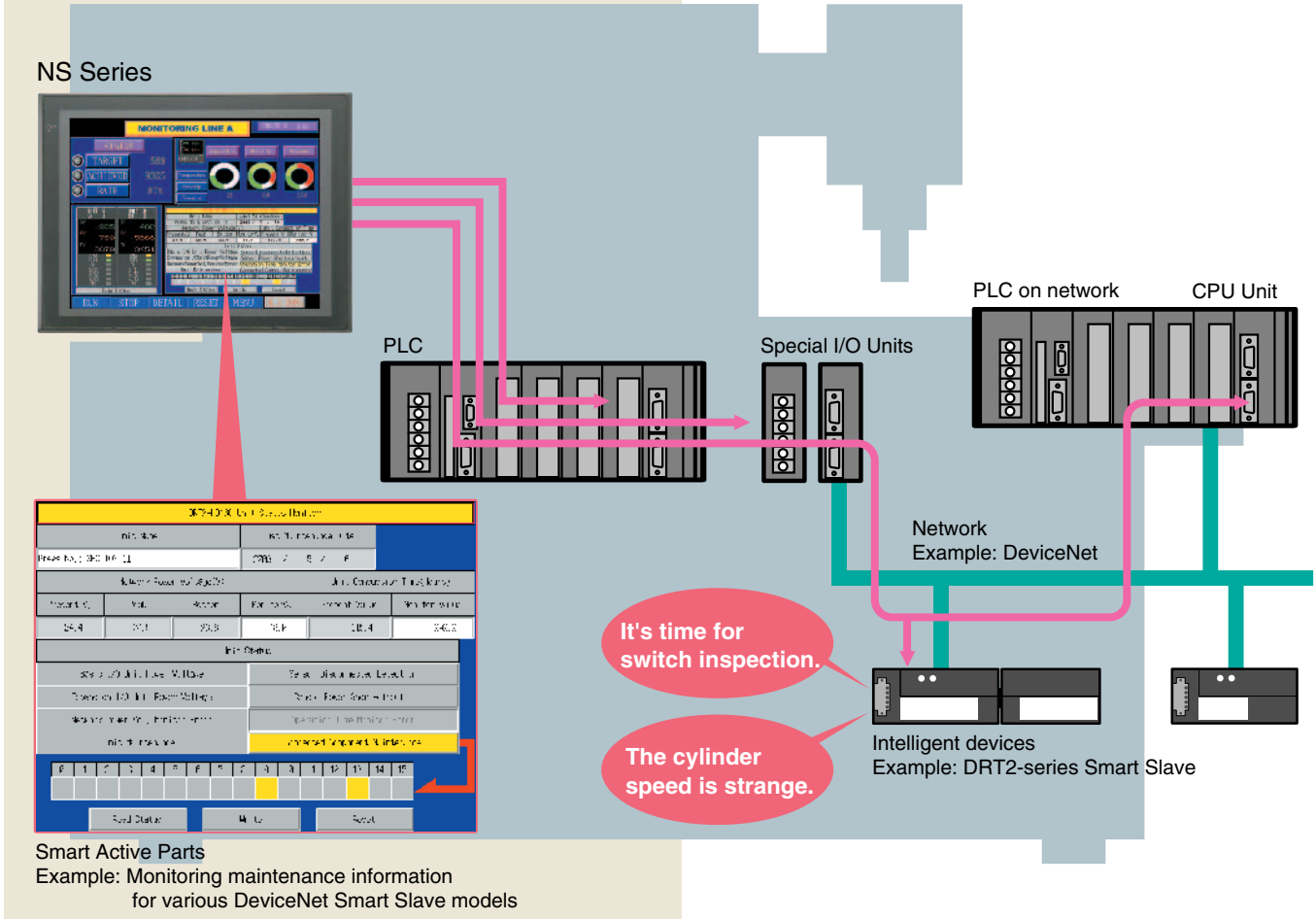
From PLC Memory Allocation to Device Access



Today's PTs are used to assist with device operations, display error locations and countermeasures.

The NS Series achieves flexible data access to a variety of devices. It enables operators to reach the devices on the network including Special I/O Units, intelligent devices, and PLCs.

Previous zone **New zone**

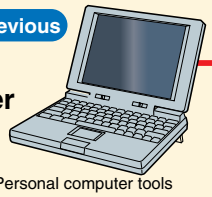


Smart Active Parts
Example: Monitoring maintenance information for various DeviceNet Smart Slave models

Don't you have these problems?

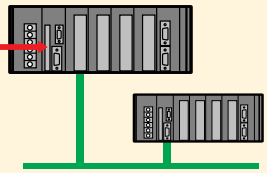
Using all of the device-specific personal computer tools at startup is okay, but using the personal computer tools for troubleshooting during operation is difficult.

Previous



Personal computer tools

Various device-specific tools
- Peripheral Devices for PLC
- Network control
- Temperature settings and monitoring tools
- Setting tool for position control

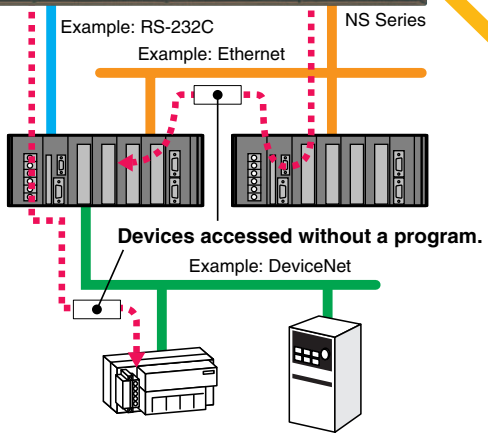


Wouldn't it be simpler to use the PT instead?

OMRON ORIGINAL

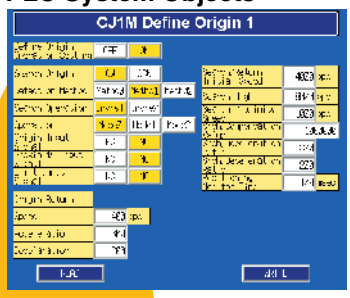
With the NS, just drag and drop the Smart Active Parts (Device Library) to customize the interface for your machine.

Only with NS! The NS Series utilizes Smart Active Parts (Device Library) that make it possible to directly access various devices.



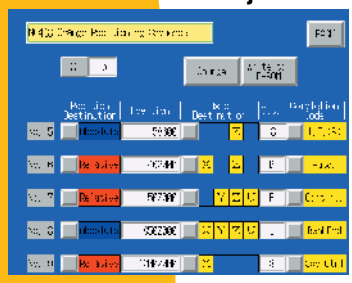
Smart Active Parts (Device Library)

PLC System Objects



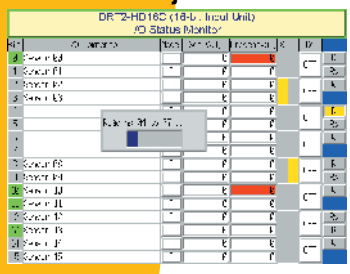
Previously a CX-Programmer was required.

Position Control Objects



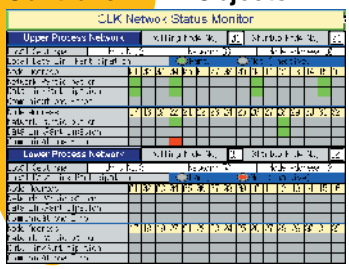
Previously CX-Position was required.

DeviceNet Objects



Previously a DeviceNet Configurator was required.

Controller Link Objects



Previously CX-Net was required.

Smart Active Parts

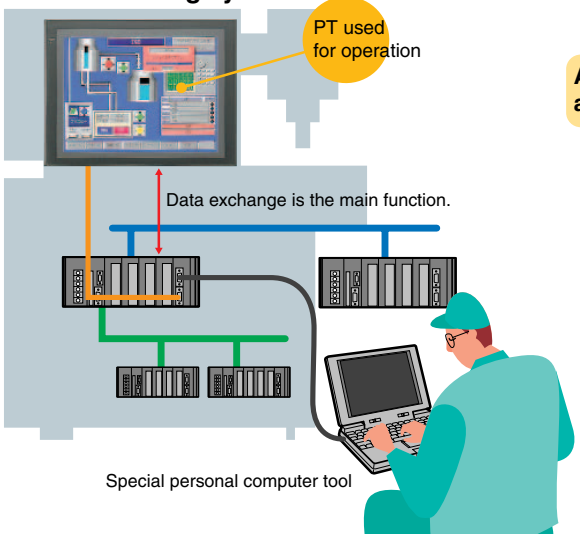
Smart Active Parts include communications functions, so it is possible to communicate with a remote device simply by dropping Smart Active Parts to the screen and setting the path to the remote device.

Note: Contact your OMRON representative for more information on Smart Active Parts including sales and customization services.

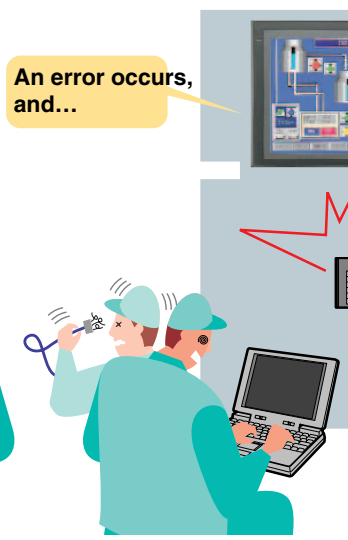
Machine Management

Previous

■ On an running system



■ When an Error Occurs during Operation

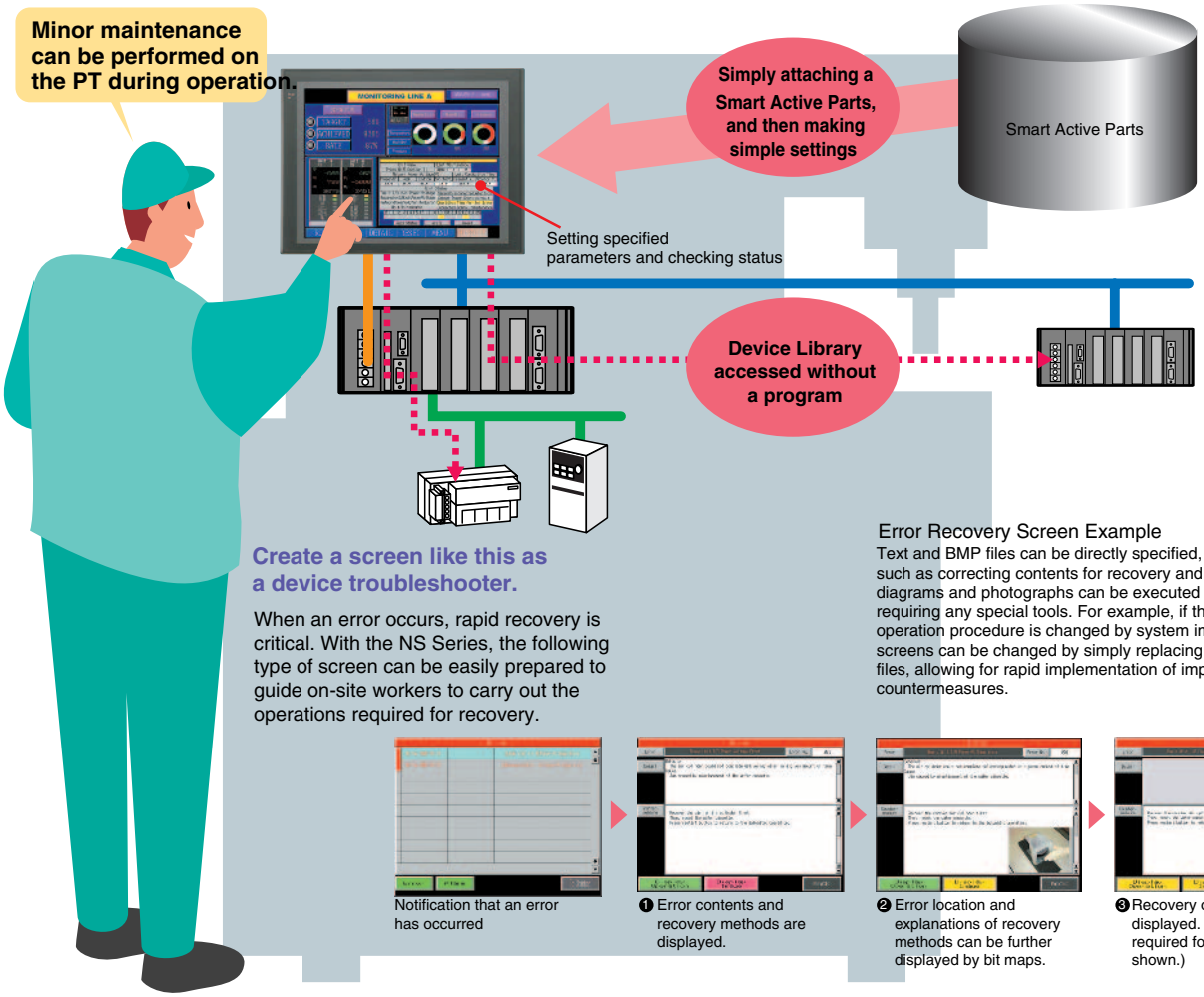


- Use a dedicated computer, and you have to wade through functionality that is not being used .
  Recovery can only be performed by a
- specialist (i.e., an engineer).

Only with NS!

With Smart Active Parts…

The PT can be customized according to the specifications of the device manufacturer to optimize operation as a tool. This enables equipment maintenance by operators other than service engineers.

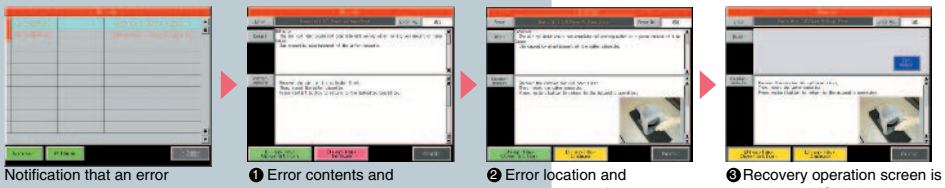


Create a screen like this as a device troubleshooter.

When an error occurs, rapid recovery is critical. With the NS Series, the following type of screen can be easily prepared to guide on-site workers to carry out the operations required for recovery.

Error Recovery Screen Example

Text and BMP files can be directly specified, so operations such as correcting contents for recovery and replacing diagrams and photographs can be executed without requiring any special tools. For example, if the recovery operation procedure is changed by system improvements, screens can be changed by simply replacing text and BMP files, allowing for rapid implementation of improvements and countermeasures.



Notification that an error has occurred

❶ Error contents and recovery methods are displayed.

❷ Error location and explanations of recovery methods can be further displayed by bit maps.

❸ Recovery operation screen is displayed. (Only the buttons required for operations are shown.)

Machine Localization with PTs

A Multi-language Input Environment Using Excel

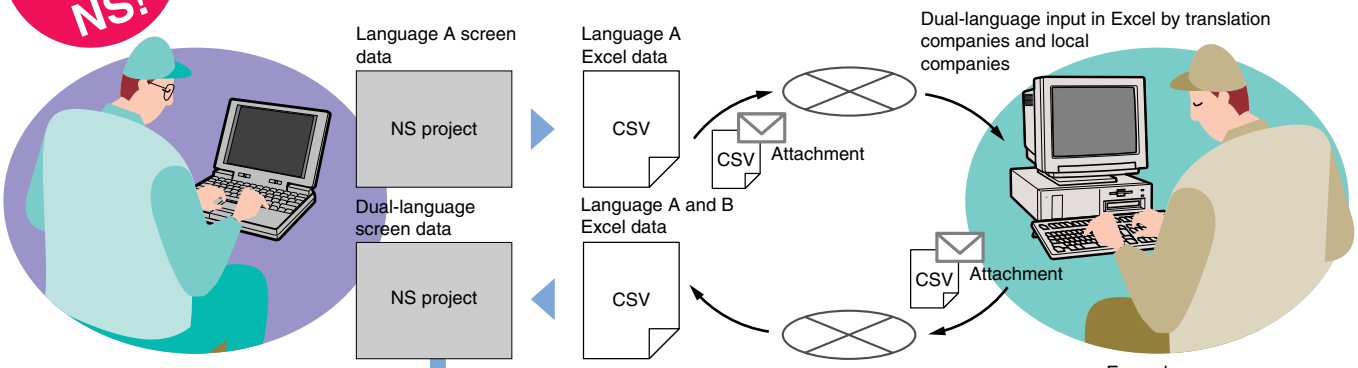
- No special PT tools are required for translation operations.
- Translations can be requested using e-mail attachments.

Label Switching Function for Up to 16 Languages

- Devices can be started with local-language screens, and then operated with screens in other languages.
- The languages can be switch to the one preferred by the device operators.

Only with NS!

You can get multi-language support in Excel. Switching to as many as 16 languages is as easy as switching labels.



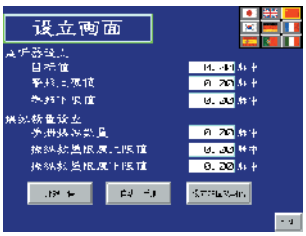
Note: Windows 2000 or XP is required for multi-language support.

16 languages max.

Label 0

Label 1

Label 15

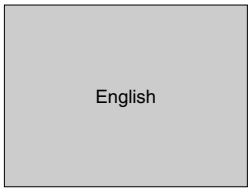


NS Series

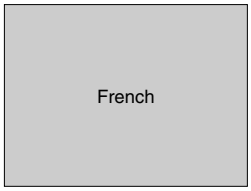
Only with NS!

- **Support for 17 languages**
- **Switching to as many as 16 languages by simply switching the labels**

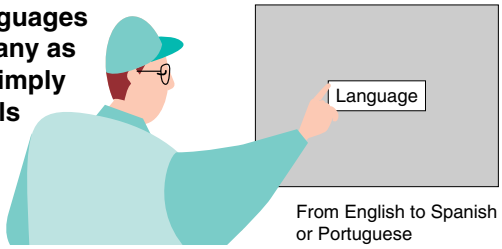
Example:
When device is started



During device operation



Example:
Switching the operator to the operator's language with one touch



From English to Spanish or Portuguese