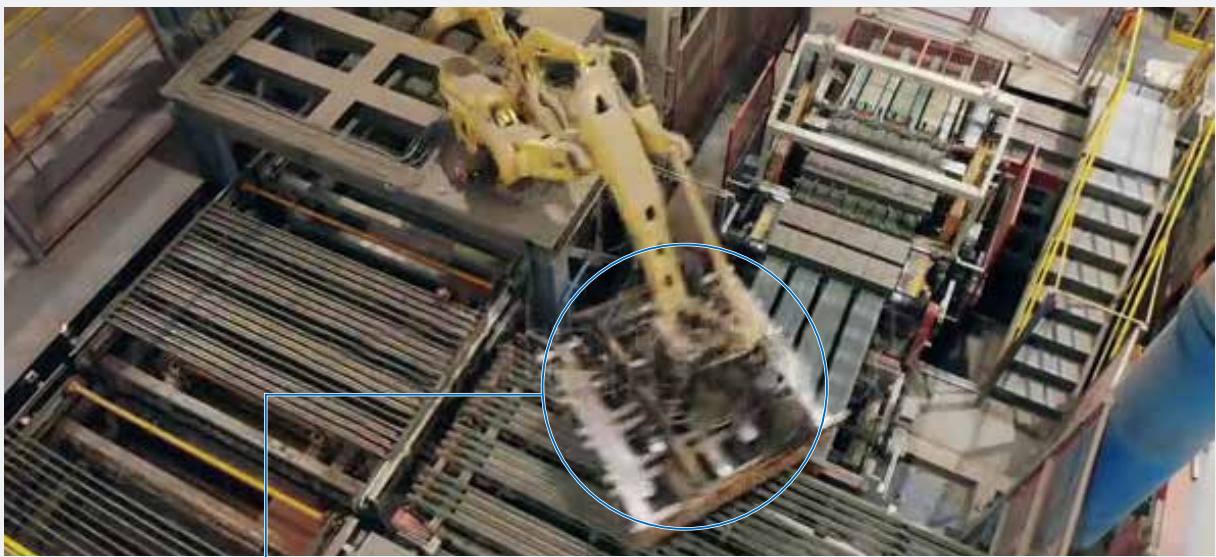**OMRON**

Record the Moment

Efficiently identify root causes with video

Example: Breakage of objects at robot-operated factory

Video shows unexpected behavior of robot arms

If products are scratched at an unmanned site, identifying the root cause is difficult because no employees were present when the damage occurred.
Recording robot behavior on each command enables you to understand the situation and to quickly determine the cause.
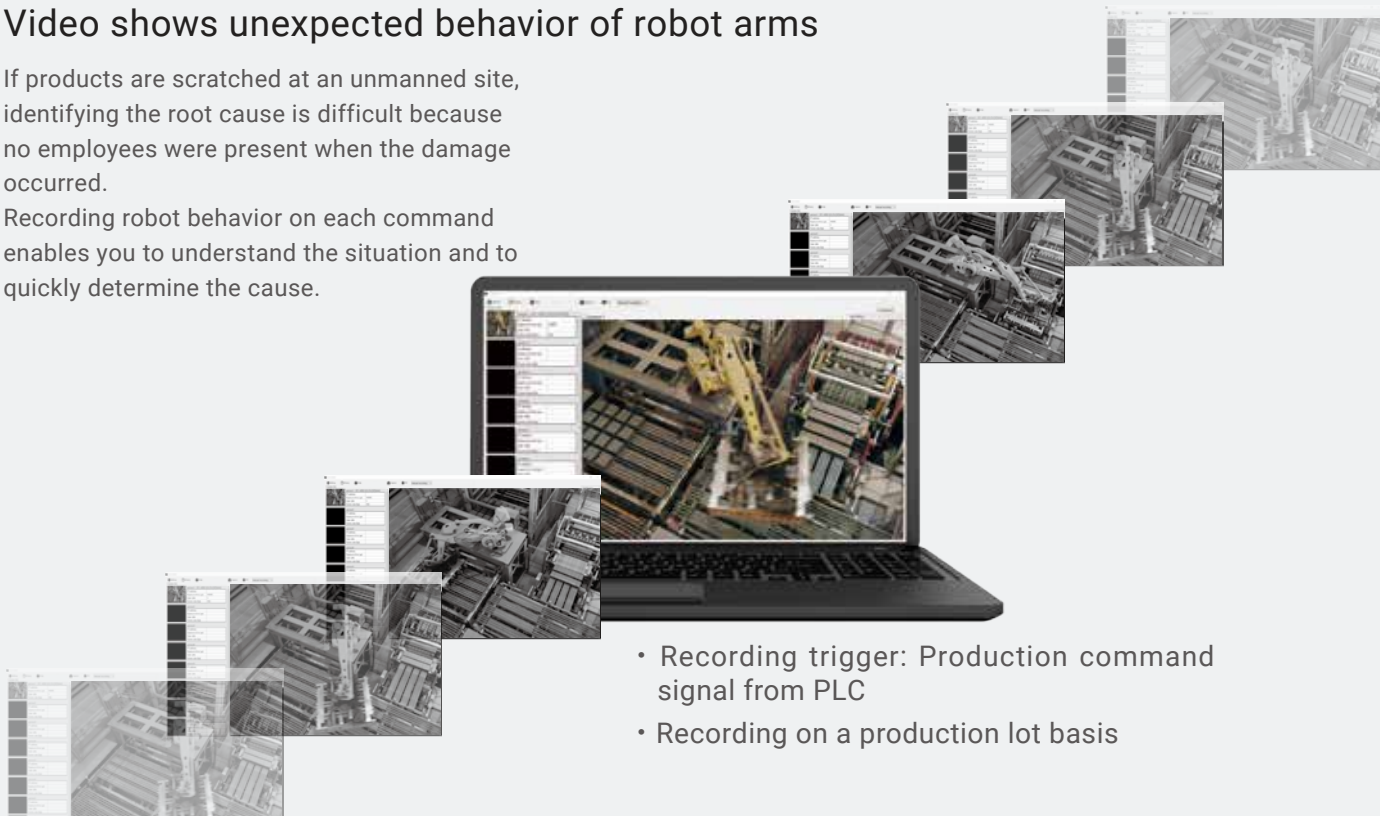
- Recording trigger: Production command signal from PLC
- Recording on a production lot basis

Installation is easy thanks
to simple configuration

Industrial camera   Factory Drive Recorder
   software

Example: Quality defects at production site with strictly controlled environment

Video shows operator working with sterile machine door opened

When a defect occurs at a production site where sterile machines are used, it is difficult to identify the cause when contributing circumstances are unknown.
In this example, the camera records a video showing the machine state before and after the particle volume abnormality.
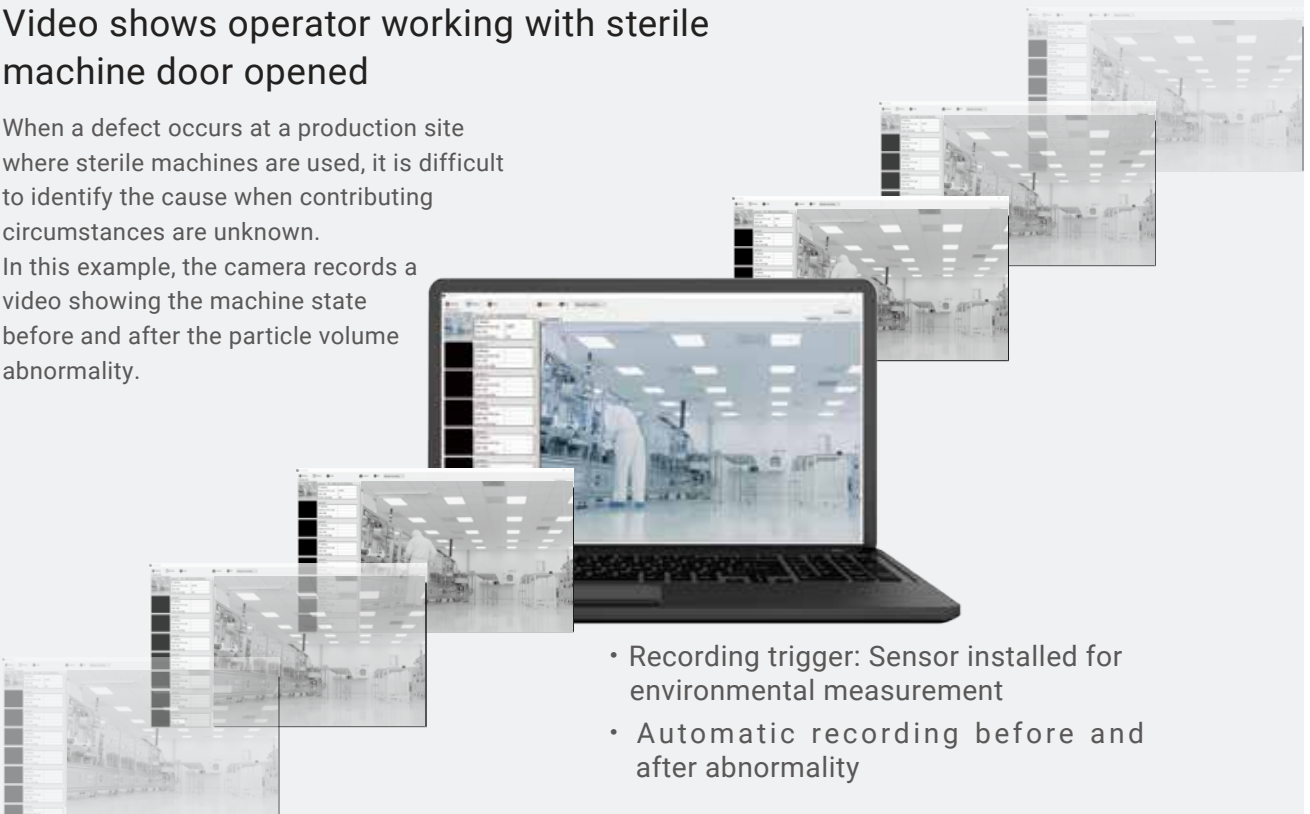
· Recording trigger: Sensor installed for environmental measurement
· Automatic recording before and after abnormality

Images for illustration purpose only.

Record the exact moment of state change

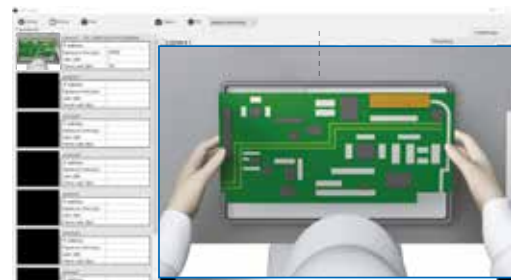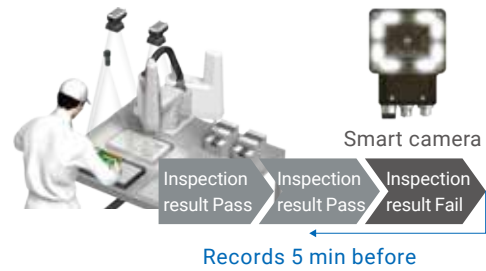## Automatic recording of events by trigger input

When triggered either by external input from the sensor or PLC or by TCP command input, the camera will record a video showing machine state for five minutes before or after the problem occurs. By replaying the video, you can understand what happened.

Case Recording triggered by particle volume abnormality

Abnormal

Normal

Particle volume

Records 5 min before and after

Particle sensor
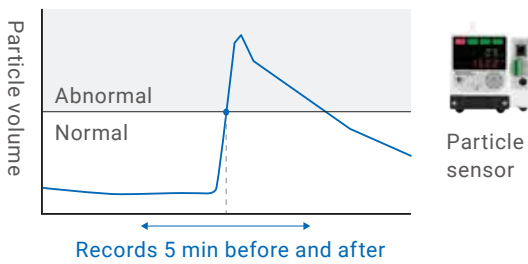
Shows that the operator opened the machine door

Case Recording of work process triggered by inspection fail

Smart camera

Inspection result Pass | Inspection result Pass | Inspection result Fail

Records 5 min before

Shows that the operator made a mistake

Factory-specific recording functions for various applications

This software provides seven types of recording: Trigger Recording that includes Time Trigger, Motion Detection, and Master Image Comparison as well as external trigger input, Continuous Recording that records a video for up to one year, and Manual Recording for 60 minutes. It can be used for continuous remote monitoring of machine status, review of production problems, work process tracing for recall purposes, and many other industrial applications.

Automatic recording by detecting change in image

Events immediately preceding and immediately following a problem can be recoded by Motion Detection that uses the difference from the preceding image under specified conditions (see below), and Master Image Comparison.
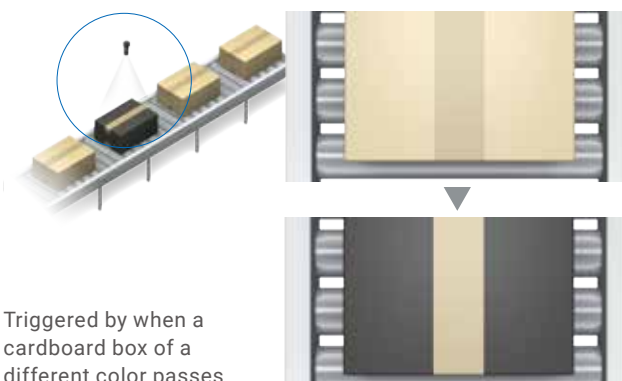
Triggered by when a cardboard box of a different color passes

Remote status monitoring + continuous recording

You can remotely monitor the site status in real time without recording or continuously record for up to one year*1.

Remote monitoring

*1. Recording time varies depending on the storage capacity of your PC or HDD.

4

Multiple camera options for high-accuracy recording

Omron offers a wide selection of more than 100 camera models to meet your needs.

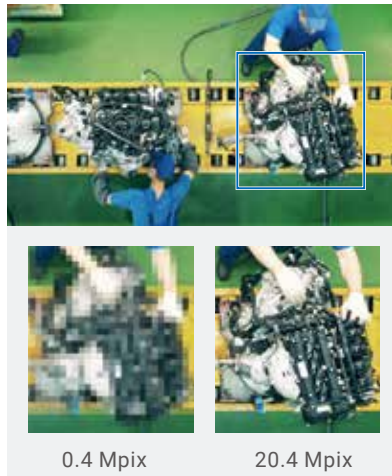## If you need a camera that...

Fits in narrow spaces

The 19 mm square ultra-compact remote head camera can be installed in narrow spaces.

19 mm

Records subtle changes

The 20.4 Mpix high-resolution camera can clearly record changes in machine state.
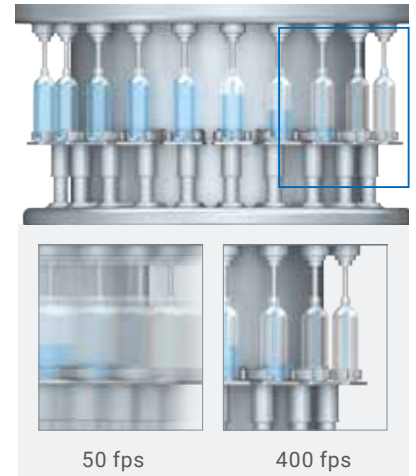
| 0.4 Mpix | 20.4 Mpix |

Check for incorrect mounting of fittings

Records high-speed lines

A 0.4 Mpix camera can record high-speed production lines as fast as 400 fps.

| 50 fps | 400 fps |

Check for insufficient liquid volume due to bottle position deviation

Record wide and narrow areas simultaneously

Omron's broad camera portfolio, which includes a camera with a long cable suitable for wide-area recording of the entire manufacturing site, can be freely combined with lenses for different fields of view. These combinations allow for capturing wide and narrow areas at the same time.

Records the entire area

Records the small area

Simultaneous recording of up to 8 cameras

Cable length up to 100 m
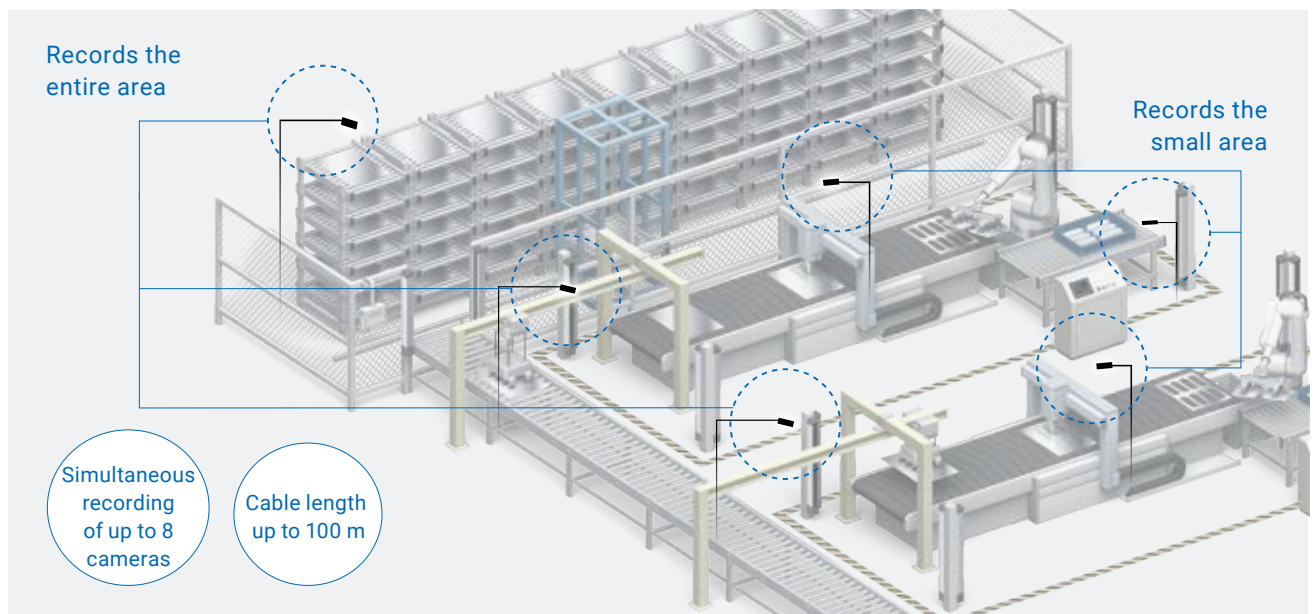
Configure the system in three easy steps

STEP1 Prepare devices

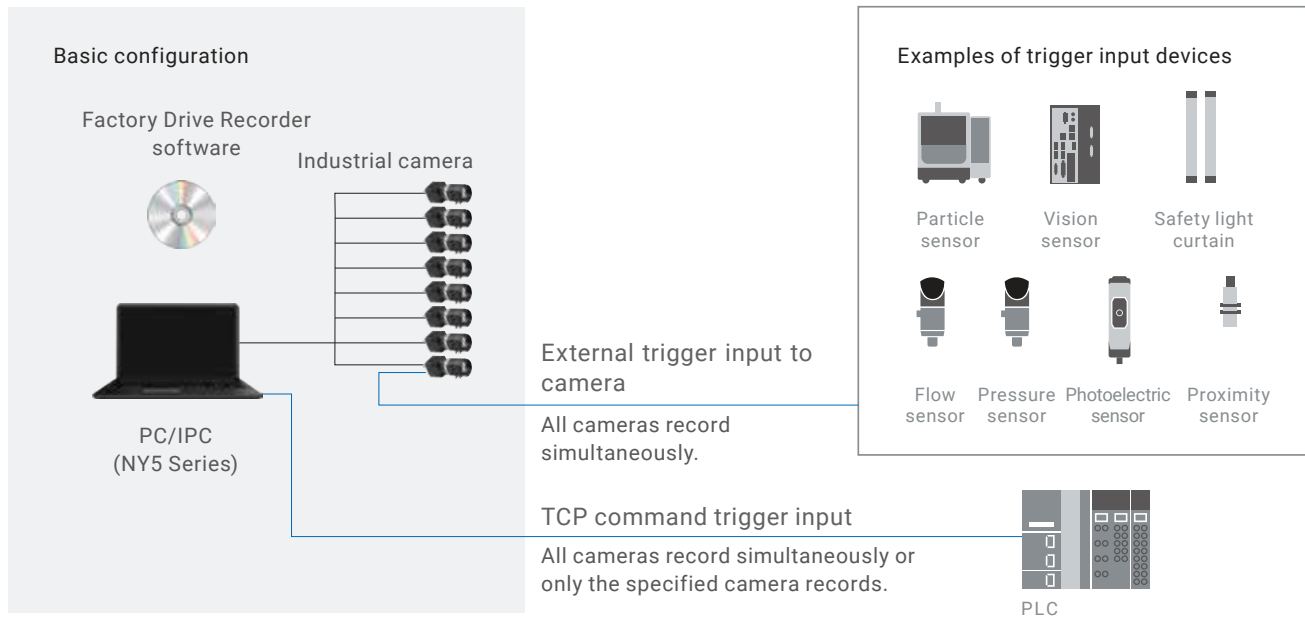The camera and software bundle is ready for immediate use without the need for the sort of verification and programming typically required when combining general cameras with vision software. Recording can be started immediately by using input from the sensor or PLC installed at the production site as trigger.

Basic configuration

Factory Drive Recorder software

Industrial camera

PC/IPC
(NY5 Series)

External trigger input to camera

All cameras record simultaneously.

TCP command trigger input

All cameras record simultaneously or only the specified camera records.

PLC

Examples of trigger input devices

Particle sensor

Vision sensor

Safety light curtain

Flow sensor

Pressure sensor

Photoelectric sensor

Proximity sensor

Note: Up to eight cameras can simultaneously record. A hub is required to connect cameras depending on the PC specifications and the number of connected cameras.

STEP2 Install

Install the Factory Drive Recorder software and camera driver (SentechSDK)*1 on your PC or IPC.

*1. Install the latest version of the camera driver (SentechSDK) downloaded from the Omron Sentech's website.

STEP3 Set recording conditions

Configure camera settings, recording settings, and settings for saving recorded videos.

Ordering Information

Software

Item	Max. no. of connectable cameras	Model
Factory Drive Recorder	8 per PC	STC-FDR-SW01

Cameras

Item		Max. resolution	High-speed*1	Ultra-compact	Cable extension (100 m)	Model
GigE Vision Camera	STC-M Series	20.4 Mpix			✓	Refer to the *Industrial Camera Catalog* (Cat. No. Q259).
USB3 Vision Camera	STC-M Series	20.4 Mpix	✓			
USB3 Vision Camera Compact Remote Head Model	STC-R Series	1.6 Mpix	✓	✓		
GigE Vision Board	B-Series	0.4 to 20 Mpix		✓	✓	
UVC Cameras	CMOS	1.3 Mpix		✓		

*1. The maximum frame rate depends on your PC performance, the number of connected cameras, and the camera type. Test the products before actual use.

Ratings and Specifications

Specifications

Item		Description
Components		Installation CD (Factory Drive Recorder installer, SentechSDK installer, manual), license ID
System requirements	CPU	Core-i5 2 GHz or faster (Core-i7 3 GHz or faster recommended)
	RAM	8 GB min. (16 GB min. recommended)
	Storage	At least 1 GB of available space is required for installation. Allocate sufficient space to save recorded images.
	OS	Windows 10 (64-bit)
Video	Frame rate	Depends on the number of connected cameras, image resolution, and performance of the PC
	Save format	AVI format (MotionJPEG)

Functions

Item	Function	Description
Display	Live Display	Displays a live image from the connected camera
	Video Display	Displays recorded video
Recording	Continuous Recording	Records as configured (days and time)
	Manual Recording	Starts and stops recording manually
	Trigger Recording	Records when triggered
Recording setting	Camera Settings	Exposure time, gain, frame rate
	Trigger Settings	Time Trigger, Motion Detection, Master Image Comparison, Trigger Signal (external input to camera, TCP command input)
	Save Settings	Save folder, file name
	Language Setting	English or Japanese
I/O setting	External Input	External trigger input to camera, TCP command (trigger input)
	External Output	Message output via TCP (start and stop recording)
History	Display Recording History	Shows a list of latest 100 recorded files
	Export History File	Exports recording history and recorded files in HTML format

Recording methods

Recording method		Description	Recording time
Continuous Recording		Records as configured (days and time)	Up to 1 year (366 days)
Manual Recording		Starts and stops recording manually	Up to 60 minutes
Trigger Recording	Time Trigger	Records once a day at specified time	Up to 5 minutes before and after trigger
	Motion Detection	Records when the difference between an image and the preceding image exceeds the specified value	
	Master Image Comparison	Records when the difference between a predefined still image and a camera image exceeds the specified value	
	Trigger Signal (External trigger, I/O)	Records when a trigger signal is input to the camera	
	Trigger Signal (TCP command)	Records when a TCP command is input to the camera	

Related Products

Status Sensing Solution

The catalog introduces case examples and products to improve quality through digitization of equipment status (Cat. No. E603)

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Sensing
• Photoelectric Sensors • Fiber-Optic Sensors • Proximity Sensors
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Software
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