Measurement sensors

These sensors sense the distance to the workpiece at high speeds and with high accuracy. A resolution of 0.01 μm or higher allows them to be used in various sensing applications.

FA sensors

FA sensors function as "eyes" in factory automation. The optimal detection device, e.g. a photoelectric, inductive proximity, or pressure sensor, is determined by the object to be detected (workpiece).

Light curtains / safety components

Light curtains, safety switches, and safety controllers help ensure the safety of workers. The best device for the operating site can be selected from a wide variety of products.

Programmable controllers

Programmable controllers function as "brains" in factory automation. A full lineup of controllers to serve various applications featuring anything from a small to a large number of I/O points and from component control to information communication is available.

Static removers

Static removers prevent static electricity problems in various processes. Select from spot charge removal to wide-area charge removal and from fan type to airless type according to your needs.
With sensing and control as core technologies, we make your abundant future come true.

Backed by our advanced technologies and know-how cultivated over many years in the field of factory automation, we provide products for a wide variety of applications in numerous industries. Our vast product lineup includes various FA sensors, programmable controllers, laser markers, and UV curing systems. We can meet your requests all at once.

We provide products, technologies, and services through the worldwide Panasonic Group sales network.

### LASER MARKERS
Laser markers use laser beams to directly and clearly mark workpieces. They are also used to half-cut film, to strip coating off lead wires, and so on.

- **FAYb laser marker**
- **CO2 laser marker**
- **Com shaft engraving**

### UV CURING SYSTEMS
These systems apply UV irradiation on UV curing resin to bond components or seal electronic equipment. They cover a wide range of applications from digital appliances to printing.

- **LED spot type UV curing system**
- **Bonding of optical pickup lens**

### ENERGY CONSUMPTION VISUALIZATION
These components measure power and air consumption and present energy consumption visually to help save energy.

- **Eco-POWER METER®**

### PROGRAMMABLE DISPLAYS
Touch panels (Human Machine Interface) serve as a bridge between humans and machines. They are used in a wide variety of markets including factories, buildings, public and outdoor facilities.

- **Environmentally resistant tough type**
- **Control panel**

### FA COMPONENTS
We provide a wide range of FA components such as timers, counters, limit switches, fan motors, solenoids, and temperature controllers.

- **Timer**
- **Counter**

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Medicine packing system that consistently carries out processes from filling pills to packing

- The rich lineup of laser markers enables high-speed, beautiful clear engraving in various materials.
- Static removers prevent adhesion of dust and dirt through charge removal and ensure safe and high-quality pharmaceutical production.

*The applications presented here are practical examples, but sensing may not be possible depending on the shape, color, luster, etc. of the workpiece you are using.
FT-A32 emits a wide beam that can be used to identify differences in the height of stacked pill blister packs.

When set to mark mode, LX-101 automatically selects a single color from the 3 LEDs (R, G, B) to achieve an ultra-quick response.

DPC-100 can verify suction when packages are moved into an upright position. A fast response time of 500μs reduces tact time.

LP-400 can engrave not only characters, but also codes used in different countries at high speeds and with high quality.

If you experience difficulties with sensing, please contact our office.
Automotive industry

Line for assembling cars from single steel sheets

- Numerous types of light curtains are available including press-machine compliant types, flameproof types, and robust types. These ensure the safety of staff in work areas.
- Stable sensing is possible using sensors with high environmental resistance, such as those which are spatter-resistant in welding processes and flameproof in spray-painting processes.
- Despite its compact size, laser sensors use high-power beams. This makes it possible to sense long distances even in wide conveyors and lines.

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LP-400 uses its high output laser to quickly and stably engrave text on nameplates of car frames and parts.

If you experience difficulties with sensing, please contact our office.
Engine production line that merges human power and mechanization

- Light curtains are invisible light grids. As such, they are effective in monitoring areas where using doors and covers would hinder work efficiency or reduce access areas unnecessarily.
- Oil-resistant fibers are robust against oil and coolants and can be installed around metal-processing machines shrouded in oil mist.
- Picking systems with a large numbers of sensors make wiring complicated, but using S-LINK saves wire, space, and labor.

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HG-C is equipped with a high-precision CMOS image sensor and special algorithms that allow high-precision measurements in the order of 1/100mm.

CMOS type micro laser distance sensor HG-C series

The compact FP0R and GT03-E require minimal installation space. This helps to miniaturize machines.

Programmable logic controller FP7 series
Programmable display GT03-E (“TOUGH PANEL”)

HL-G1 accurately measures the distance to the head cover, controls the nozzle position, and optimizes the amount of liquid gasket to apply.

Compact laser displacement sensor HL-G1 series

NA1-PK3 can be used to check the picking of assembly parts. The use of S-LINK V makes the system easy to install.

Flexible wire-saving system S-LINK V
Compact picking sensor NA1-PK3

If you experience difficulties with sensing, please contact our office.
Electronic-component mounting system that solders components to printed circuit boards

- In electronic component mounting, where precision is a must, micro laser distance sensors contribute to a sensing solution thanks to their high precision.
- Convergent reflective sensors are not susceptible to the effects of background objects and provide stable sensing.

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If you experience difficulties with sensing, please contact our office.

**Reflow furnace control and display**

**FP7**

FP7 can be used to manage and control the furnace temperature. A single expansion unit provides 8 channels.

- Programmable logic controller **FP7** series
- Programmable display **GT03-E** (TOUGH PANEL®)

**Door control for maintenance**

- Attach an **SG-A1/B1** to a maintenance door to stop the machine when the door is opened for maintenance. This ensures worker safety.
- Safety door switch ultra-slim type **SG-A1** series. Safety door switch with solenoid interlock ultra-slim type **SG-B1** series

**Circuit board positioning and passage confirmation**

- **CX-440** adjustable range reflective type sensor and **EX-10 / EX-20** convergent reflective type sensors are not susceptible to the effects of background objects or circuit board color and provide stable sensing.
- Wide area ionizer **ER-X** with pulse AC discharge method

**Detection of warped circuit boards**

- **HG-C** can measure with high precision and therefore can stably detect whether circuit boards are warped.
- CMOS type micro laser distance sensor **HG-C** series

**Charge removal during mounting**

- **ER-X** is equipped with an ultra-compact slim head that features both high-speed charge removal and easy maintenance. It can be installed even in an extremely narrow space.
- Wide area ionizer **ER-X** with pulse AC discharge method

**Electronic component suction verification**

- **DPH-100** is a single-axis pressure sensor head. Its compactness allows machines to be downsized.
- Dual-display digital pressure sensor for gas with separate head **DPS-400 / DPH-100** series

**Detection of tape feeder floating**

- **EX-L211** has a very focused beam, which allows it to detect even the slightest floating of the tape.
- Ultrasonic sensor **EX-L211** series with built-in amplifier

**Tiny component detection**

- The fiber tip of **FD-415** is a thin sleeve. This makes it suitable for sensing in narrow locations and detecting even minute objects.
- Digital fiber sensor **FX-500** series Ver. 2
Semiconductor and LCD industry

Semiconductor manufacturing line from wafer processing to assembly

- High-precision sensing technologies including wafer notch detection and resin height inspection contribute to improved quality and increased production of semiconductor products.
- Chemical-resistant fibers do not use metal in their construction and do not pose a risk of metal contamination. As such, they are suitable for preprocessing equipment that requires a clean environment.
- Safety components such as key selector switches, light curtains, and safety controllers ensure both safety and productivity.

*The applications presented here are practical examples, but sensing may not be possible depending on the shape, color, luster, etc. of the workpiece you are using.*
If you experience difficulties with sensing, please contact our office.
Electrical industry

Detecting the presence / absence of leaflets in DVD cases
The presence or absence of leaflets that are supposed to be inserted in DVD cases is detected. Since LS-H22 is a line-reflective type, the difference in the light-receiving level between the case and paper is large. Thus, it allows more stable sensing as compared with the spot-reflective type.

Hot melt detection for magnetic disc bonding
TH senses the hot melt for magnetic disc bonding.

Parts picking check in cell production
The highly visible job indicator indicates the workpiece to be picked, preventing errors in picking.

HDD surface variation measurement
The ultra-high-speed calculation processing that makes high-speed sampling of 100kHz possible can be used for high-speed measurements, such as surface variation measurements.

Dust removal during lens mounting
ER-VS02 generates a large flow of ionized air. This way, the ionizer locally removes dust and dirt adhering to lenses and prevents optical defects.

Assembly of optical printer and copier components
UJ30 / UJ35 feature easy operation with a simple interface. Their stable irradiation enables optical components to be bonded efficiently.

Food industry

Detection of transparent bottles
Our unique optical system and circuitry designed specifically for transparent objects enable stable detection even of transparent bottles containing liquids.

Transport industry

Obstacle detection for automatic guided vehicles
PX-2 has a wide sensing area and supports two additional auxiliary sensor connections. This has improved the sensing of obstacles compared to what was previously possible.

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Various industries and situations.

**Metal processing**

- **Front / Back identification of bonded metal plates**
  Inductive proximity sensors identify metal plates based on their material and are never affected by their surface conditions. Also, since the amplifier is separate, the sensors can be installed even in narrow places.

- **Rotation / inclination sensing**
  With a 25µs ultra-high sampling speed, GP-X will not miss even high-speed workpiece displacements. Also, with a high resolution of 0.04% F.S., GP-X can measure micro displacements with a high accuracy.

- **Die machining**
  Equipped with a high-output laser, LP-M can cut deeply into metal. Machining is possible without contact, reducing consumable costs.

**Rubber and plastic industry**

- **Sheet edge control**
  The interference prevention function makes stable sensing possible even when two sensors are placed side by side.

- **Tire Shape Inspection**
  Black rubber and other materials with small light reflections can be measured accurately and at ultra high speeds at a long distance of 350 mm.

- **Defective molded resin product detection**
  Even for a pressure difference too small to be sensed with a pressure sensor, air flow can be measured to detect even the slightest leakage.

**Glass industry**

- **Charge removal when lifting up glass**
  Lifting up glass from a metal stage produces a large amount of static electricity, sometimes even breaking the glass. To solve this problem, the compact, high-speed charge remover ER-X is ideal.

**Printing industry**

- **Charge removal before and after screen printing**
  Printing defects can be improved by removing charge buildup in each printing process with ER-X.
Global Network

Panasonic Electric Works

Please contact our Global Sales Companies in:

Europe

- **Austria**
  - Panasonic Industrial Devices Materials Europe GmbH
  - Headquarters: Panasonic Electric Works Austria GmbH, Josef Madersperger Str. 2, 2362 Biedermannsdorf, Tel. +43 (0) 2236-26846, Fax +43 (0) 2236-46133, www.panasonic-electric-works.at
- **Benelux**
  - De Rijn 4, (Postbus 211), 5684 PJ Best, (5680 AE Best), Netherlands, Tel. +31 (0) 499 372727, Fax +31 (0) 499 372185, www.panasonic-electric-works.nl
- **Czech Republic**
  - Administrative centre PLATINIUM, Velešínské náměstí 3163/111, 616 00 Brno, Tel. +420 541 217 001, Fax +420 541 217 101, www.panasonic-electric-works.cz
- **France**
  - Sucursale française, 10, rue des petits ruisseaux, 91370 Verrières Le Buisson, Tel. +33 (0) 1 6013 5757, Fax +33 (0) 1 6013 5758, www.panasonic-electric-works.fr
- **Germany**
  - Headquarters: Panasonic Electric Works Germany Europe GmbH, Rudolf-Diesel-Ring 2, 83607 Holzkirchen, Tel. +49 (0) 8024 648-0, Fax +49 (0) 8024 648-111, www.panasonic-electric-works.de
- **Hungary**
  - Magyarországi Közvetlen Kereskedelmi Képviselet, 1117 Budapest, Neumann János ut 1., Tel. +36 1 999 89 26, www.panasonic-electric-works.hu
- **Ireland**
  - Irish Branch Office, Dublin, Tel. +353 (0) 14600969, Fax +353 (0) 14601131, www.panasonic-electric-works.co.uk
- **Italy**
  - Panasonic Electric Works Italia srl, Via del Commercio 3-5 (Z.I. Ferlina), 37012 Bussolengo (VR), Tel. +39 0456752711, Fax +39 0456700444, www.panasonic-electric-works.it
- **North & South America**
  - USA
- **Nordic Countries**
  - Panasonic Electric Works Europe AG, Filial Nordic, Kramarsvägen 15, 164 40 Kista, Sweden, Tel. +46 859476680, Fax +46 859476690, www.panasonic-electric-works.se
  - Panasonic Eco Solutions Nordic AB, Jungmansgatan 12, 21119 Malmö, Tel. +46 40 697 7000, Fax +46 40 697 7099, www.panasonic-fire-security.com
- **Poland**
  - Panasonic Electric Works Polska sp. z o.o., ul. Wolska 9A, 02-583 Warszawa, Tel. +48 22 338-11-33, Fax +48 22 338-12-00, www.panasonic-electric-works.pl
- **Spain**
  - Panasonic Electric Works España S.A., Barajas Park, San Severo 20, 28042 Madrid, Tel. +34 913293875, Fax +34 913292975, www.panasonic-electric-works.es
- **Switzerland**
  - Panasonic Electric Works Schweiz AG, Grundstrasse 8, 6343 Rodreuz, Tel. +41 (0) 41 7997050, Fax +41 (0) 41 7997055, www.panasonic-electric-works.ch
  - United Kingdom
    - Panasonic Electric Works UK Ltd., Sunrise Parkway, Linton Wood, Milton Keynes, MK14 6LF, Tel. +44 (0) 1908 231555, Fax +44 (0) 1908 231599, www.panasonic-electric-works.co.uk
- **United Kingdom**
  - Panasonic Electric Works UK Ltd., Sunrise Parkway, Linton Wood, Milton Keynes, MK14 6LF, Tel. +44 (0) 1908 231555, Fax +44 (0) 1908 231599, www.panasonic-electric-works.co.uk

Asia Pacific / China / Japan

- **China**
- **Hong Kong**
  - Panasonic Industrial Devices Automation Controls Sales (Hong Kong) Co., Ltd., RM1205-9, 12/F, Tower 2, The Gateway, 25 Canton Road, Tsuenhsat, Kowloon, Hong Kong, Tel. +852-2956-3118, Fax +852-2956-0398
- **Japan**
  - Panasonic Corporation, 1048 Kadoma, Kadoma-shi, Osaka 571-8886, Japan, Tel. +81-6-6908-1050, Fax +81-6-6908-5781, www.panasonic.net
  - 300 Beach Road, #16-01 The Concourse, Singapore 199555, Tel. +65 6390-3811, Fax +65 6390-3819
- **Singapore**
  - Panasonic Industrial Devices Automation Controls Sales Asia Pacific

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