

OVERVIEW

AUTOMATION PRODUCTS



Panasonic automation products

Panasonic offers a broad spectrum of products for all automation tasks. Along with our service philosophy to advise and take care of our customers, state-of-the-art technology, robust design and compact size form the basis of our business.

You can find Panasonic products in almost all areas concerning automation technology. Our core business consists of: machine and equipment building, medical technology, the chemical and pharmaceutical industries, building automation, water and waste-water management, environmental technology, energy distribution (gas, electricity, etc.), as well as monitoring and saving energy. In addition to our core areas, we offer, for example, solutions for: automated street lighting, solar trackers, open-pit mining (pump control and data transmission), telemetry (data transmission from measuring points), vending machines and people-counting, e.g. for public transportation.

Superior quality from Panasonic

During development, all Panasonic products are subjected to much more severe conditions than they will ever encounter in actual operation. However, such tests help us identify weak spots and eliminate them. This guarantees a long product lifetime in applications. In fact we are so convinced about the quality of our products that many come with a 3-year rather than the customary 2-year warranty.

Ecological automation

All together, Panasonic specifies 14 forbidden and hazardous substances. Panasonic's specifications permit less than one-tenth of the level allowed by the RoHS guideline for the 6 most important hazardous substances. Moreover, Panasonic has forbidden the use of another 8 hazardous substances in its products that are not even covered by the RoHS guideline. Hence our own requirements are far more strict than those required by law.

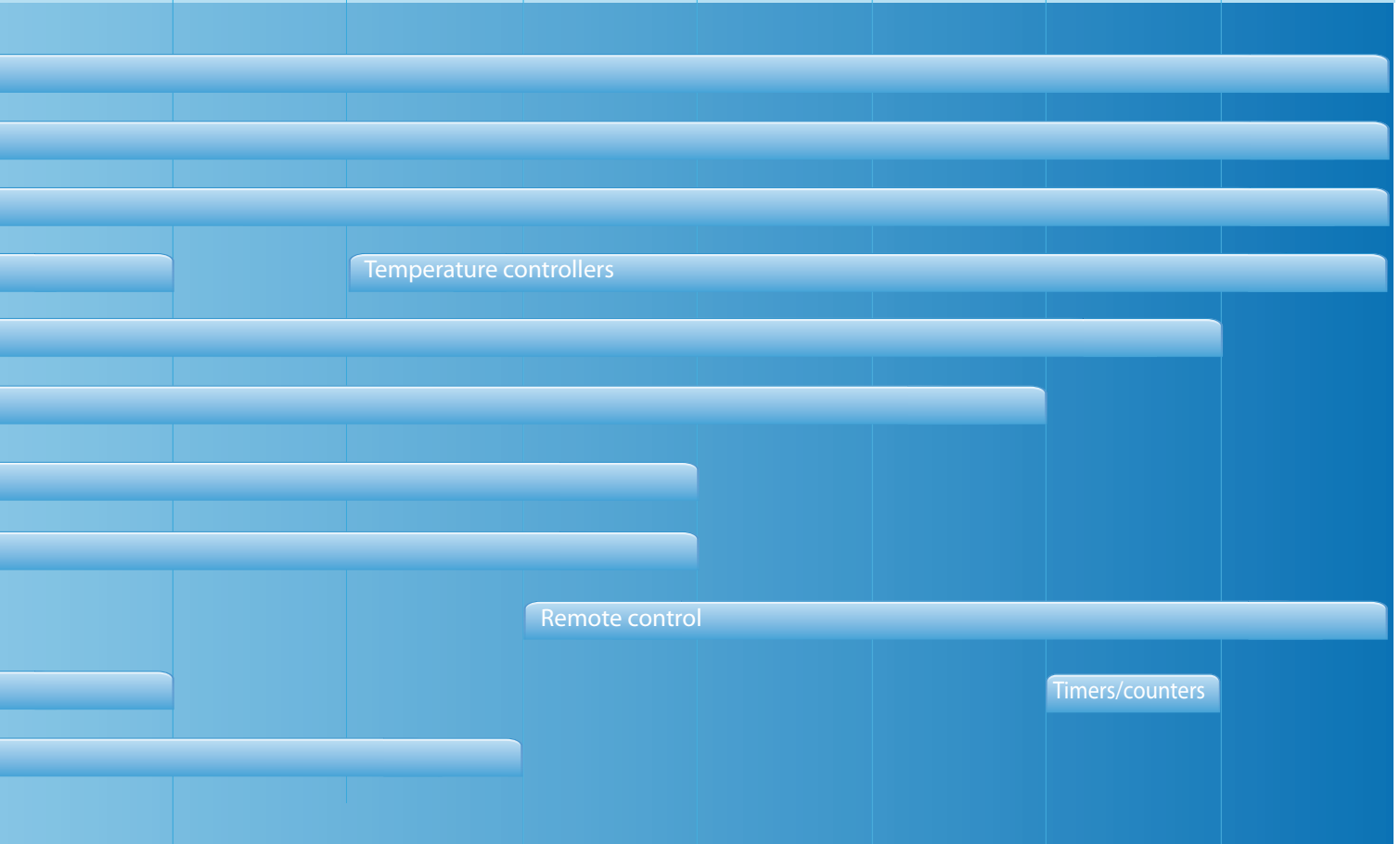


The image shows a grid of industrial applications and Panasonic products. The top row is labeled "Industrial applications" and contains two images: "Food industry" (flasks) and "Packaging industry" (robotic arm). The bottom row is labeled "Panasonic products" and contains a list of products with corresponding icons: PLC, HMIs, Eco-POWER METER, Temperature controllers, Sensors, Safety engineering, Servo drives, Laser Marker, Timers/counters, and UV curing.

Industrial applications	Food industry	Packaging industry
Panasonic products	PLC	
	HMIs	
	Eco-POWER METER	
	Temperature controllers	
	Sensors	
	Safety engineering	
	Servo drives	
	Laser Marker	
	Timers/counters	
	UV curing	

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Innovative sensor technology

Due to the diverse and complex tasks required of automation products and the ever increasing importance of quality management, demands on sensors are becoming more and more specialized. Extreme precision and reliability play the decisive role when it comes to choosing a sensor. Panasonic's innovative sensor technology enables us to meet these demands. New generations of sensors are born from the consistent application of state-of-the-art technology. These sensors are especially characterized by features such as intelligence, multifunctionality and miniaturized construction.

Service has priority

So that we can react quickly to customer wishes, we are constantly striving to improve our service. Whether you require special applications or simply desire technical support, we are there for you at any time. Just give us a call!

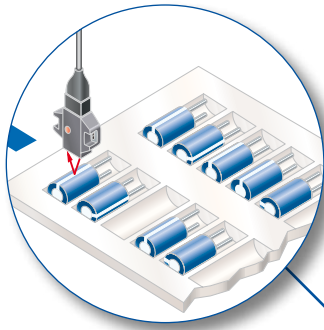
Product range

Besides thru-beam, retroreflective and diffuse reflective types, photoelectric sensors, and mark/color photoelectric sensors, we also offer laser and eddy current analog sensors, all of which yield precise results even for complex applications.

Our product range also includes safety light curtains, particular use sensors, inductive proximity sensors, miniature pressure and flow sensors for air, gas and liquids, and ionizers for removing static electricity.

Application spectrum

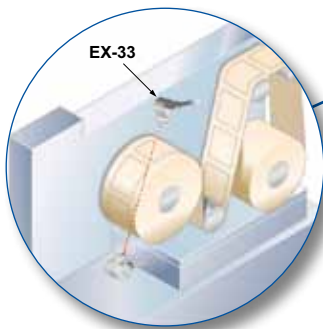
Electronics



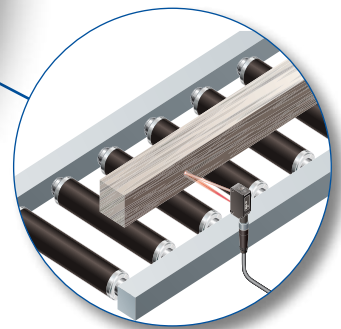
Automotive industry



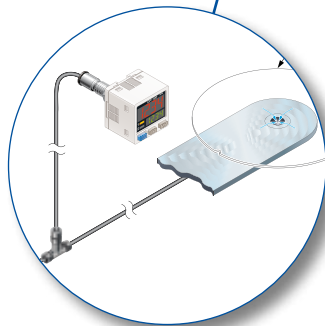
Packaging industry



Lumber industry



Glass/wafer production



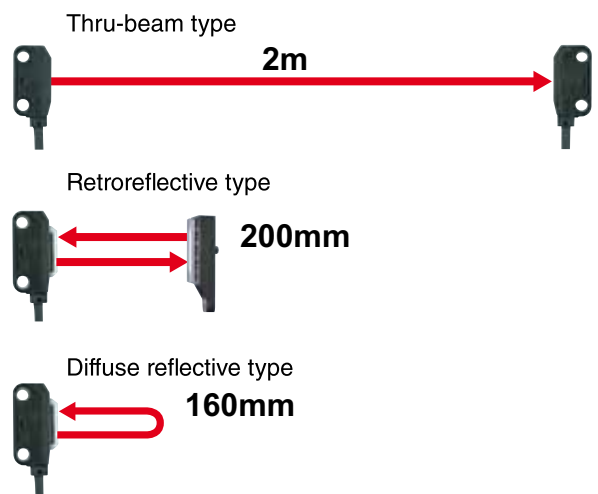
People counting





Miniature photoelectric sensors EX-10

- Integrated amplifier
- Ultrathin design 3.5mm
- Visible red LED for simple adjustment
- Space-saving mounting, front or side light types
- Two-color indicator LED
- IP67 degree of protection
- Many product varieties available



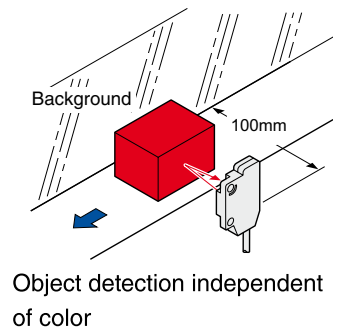
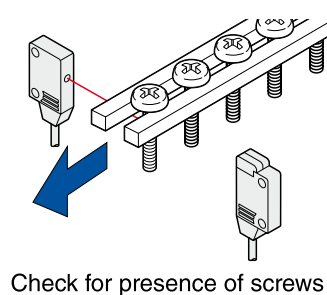
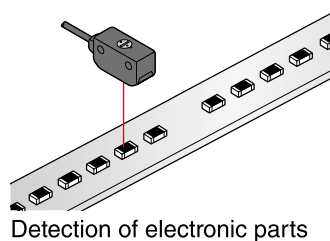
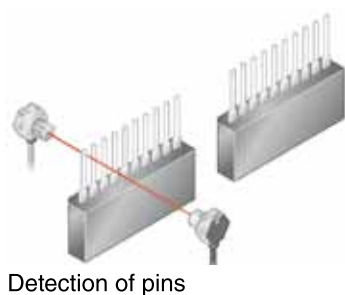
Miniature photoelectric sensors EX-20

- Dimensions (WxHxD): 8.2x19x10.5mm
- Available as thru-beam, reflective, or retroreflective type with the following rated sensing ranges:
 - Thru-beam type (2m)
 - Retroreflective type (200mm)
 - Diffuse reflective type (160mm)
- Two-color indicator LED
- Side and front sensing



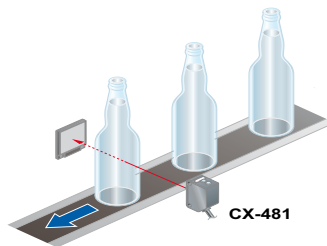
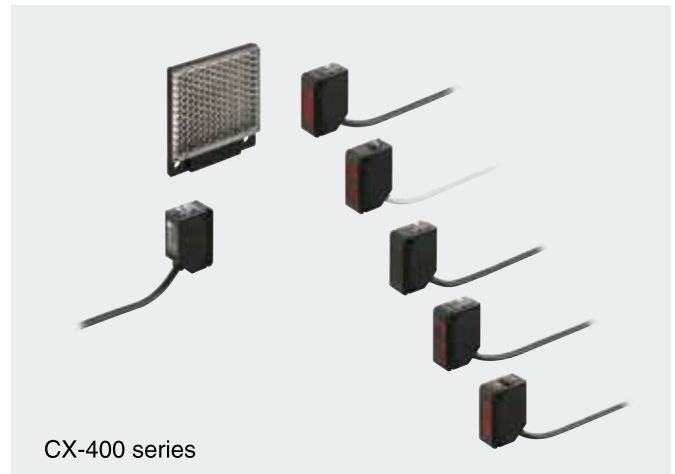
Miniature photoelectric sensors EX-30

- Dimensions: Housing M14 x T18mm / mounting M4
- Available in different types with the following rated sensing ranges
 - Thru-beam type (up to 800mm)
 - Diffuse reflective type (50mm)
- Two-color indicator LED
- Adjustable sensitivity
- Fast screw-mounting with M4
- IP67



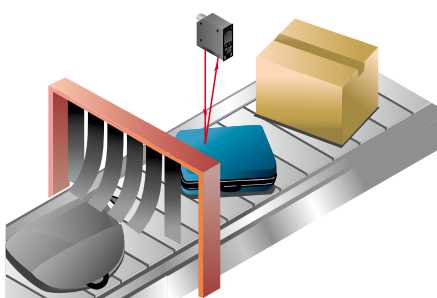
Standard photoelectric sensors

- Extensive product portfolio with 170 models
- Low power consumption for ecological automation solutions
- Connector or cable type
- Two-color indicator LEDs
- Features such as sensitivity adjustment, background suppression, interference prevention, polarizing filters, etc. provide flexibility, allowing our sensors to be used in many applications

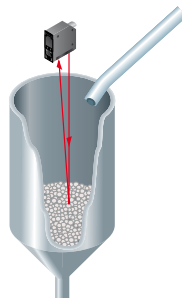


Trigonometric photoelectric sensors

- Robust design with built-in amplifier
- Diffuse reflective type with background suppression means objects can be detected regardless of color, shape or material
- Reliable object detection at distances of up to 2.5m
- Connector or cable type
- IP67 degree of protection



Counting objects



Monitoring liquid levels





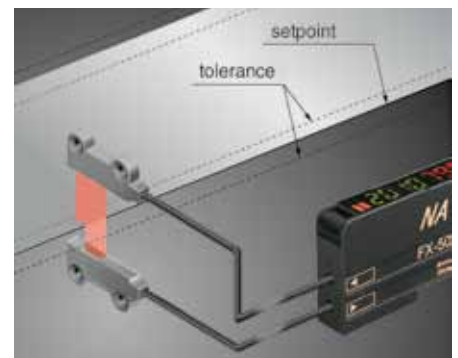
FX-500 series



FX-100 series

Fiber photoelectric sensors

- Response times as little as 25µs
- Digital and analog output
- Dual display for current and threshold value
- Easy to operate, intuitive menu navigation
- Copy function for up to 12 units without requiring a master unit
- Integrated logic functions
- Large selection of optical fibers, also for special applications

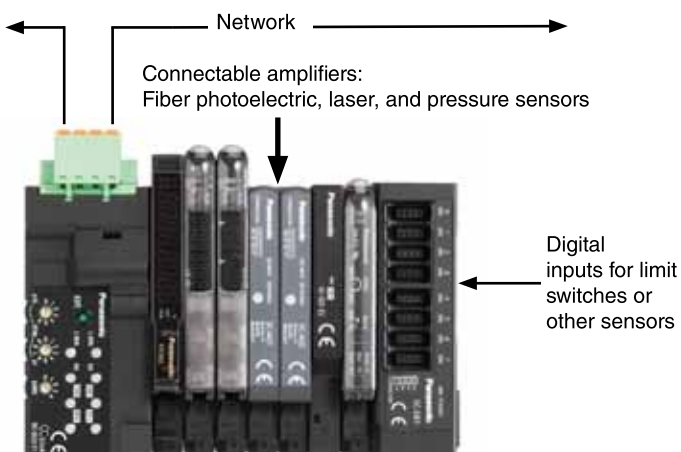


Edge tracking



Integrating sensors into a network

- Works with EtherCAT, DeviceNet, and CC-Link networks
- Communication with fiber, laser, and pressure sensors
- Additional input units
- Read-out of digital and analog values from the sensors
- Parameter setting via the network
- Teaching function allows replacing sensors easily
- Simple remote diagnosis and maintenance



Push and pull, no tools required for replacing sensors



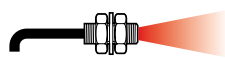
Fiber cables for photoelectric sensors

- More than 200 standard types available
- Special types available on request
- Large selection of beam and head shapes
- Suitable for the most difficult operating conditions (-60°C to 350°C, chemically resistant)
- Types with a bending radius of as little as 1.0mm
- Fiber cables may be bent up to 10 million times
- Fiber cable length can be cut with supplied tool

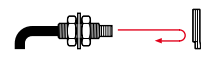
Different technologies



Thru-beam types



Diffuse reflective types



Retroreflective types



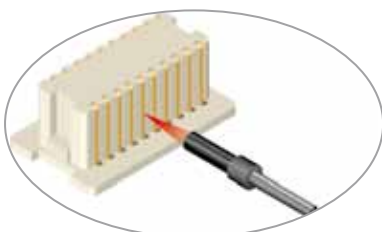
Threaded types



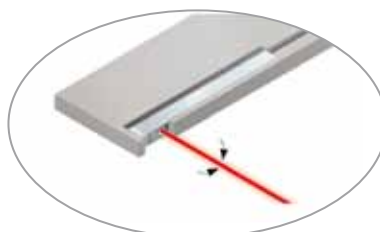
Sleeved types



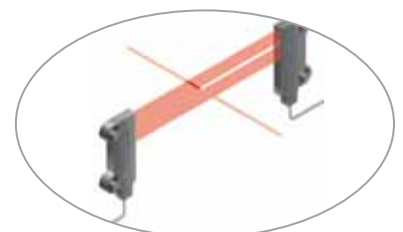
Cylindrical types



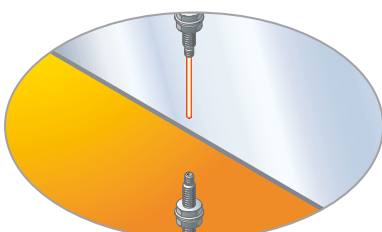
Small beam spot



Narrow array



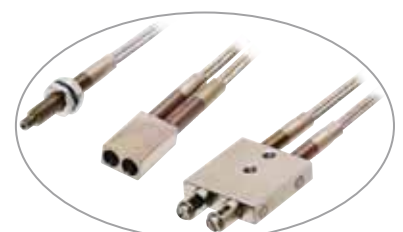
Wide beam



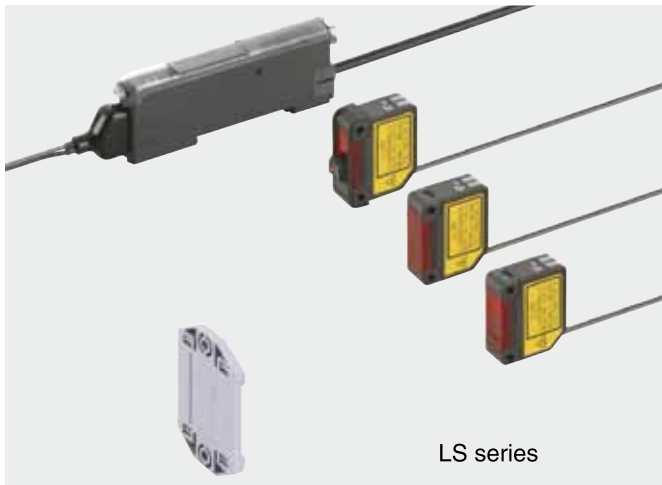
Heat resistant



Chemically resistant

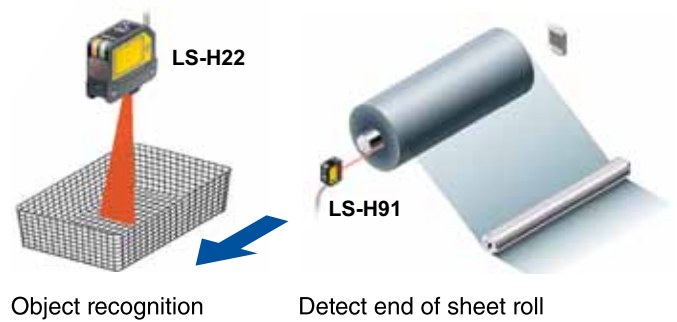


Suitable for use in a vacuum



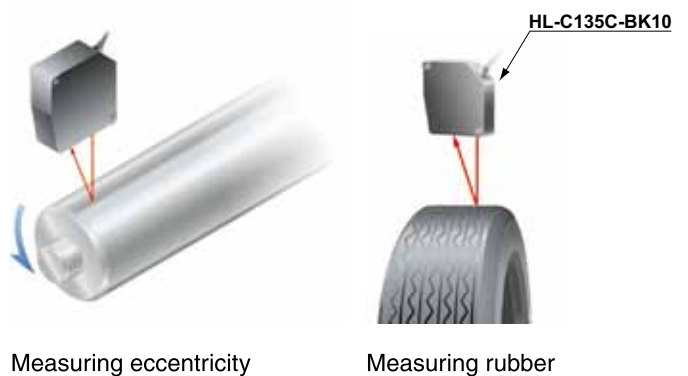
Laser photoelectric sensors

- Large product selection, models with built-in or external amplifiers
- Precision laser technology detects even miniature objects
- Easy operation and mounting
- Individual threshold adjustment
- Coaxial type



Measurement sensors

- Triangulation principle enables contact-free measurement of shiny or dull surfaces
- CMOS image sensor enables high resolution
- Fast measuring with sampling rates as fast as 100kHz
- All-in-one solutions and models with exchangeable heads
- Serial interfaces and USB 2.0



Pressure and flow sensors

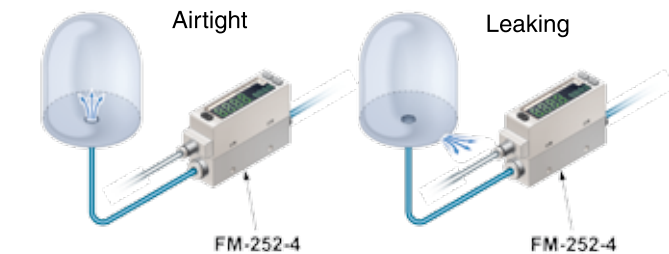
- Measurement devices for gas, water, oil
- Controllers with color display
- Pressure range up to 500 bars
- Types available with integrated and separate pressure connection
- Types with digital and analog output
- Bidirectional flow detection
- Types for detecting flows from 0.5l/min. to 1000l/min.
- Analog and digital output
- Digital and pulse output
- Selectable output modes



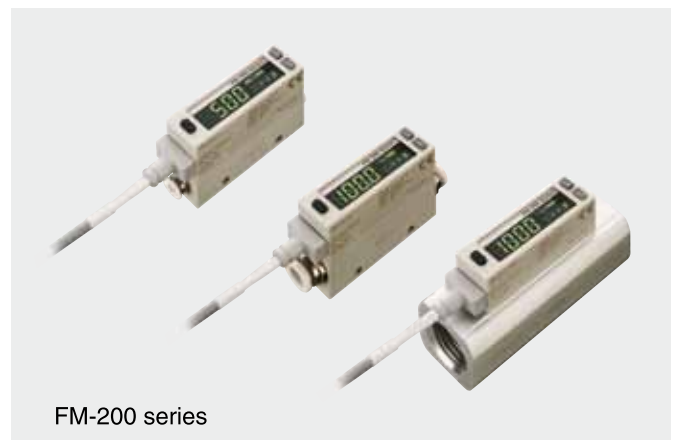
DPC-L100 series



Leak test



Leak test



FM-200 series

Ionizers

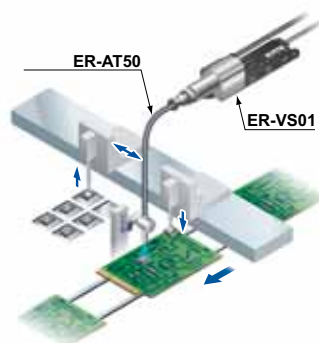
- Neutralize static electricity
- Internal fans or external pressure supply
- Point and wide-area ionizers
- Operating width up to 800mm
- Air-gun type for flexible use
- LED status indication and external signal output
- Easy to maintain



EC-G series



Discharging plastic surfaces



Discharging IC components



Plastic foil

Safety light curtains

Panasonic safety light curtains (safety category type 2 or type 4) come in many varieties and are characterized by a modular design that makes them easy to adapt to the application at hand. In addition to being extremely compact, they offer a wide range of integrated safety functions such as muting and blanking. Moreover, light curtains can be connected serially so that there is absolutely no dead zone!

Single beam sensors

Panasonic's safety beam sensor ST4 is conceived to secure areas unsuited for safety light curtains at distances up to 15m, e.g. for very small openings or irregularly shaped rooms.

This is possible by using up to 6 sensor head pairs (type 4, IP67), connecting them in line.

Safety laser scanner

The SD3-A1 safety laser scanner from Panasonic offers a cost-effective and flexible alternative to securing large areas. It can be used in both limited spaces and in areas with shifting danger zones. The SD3 can monitor an area over an angle of 190° and is divided into a warning zone (max. 15m) and protection zone (max. 4m).

Safety control units

Using one of our SF-C10 control units helps you speed up configuring and commissioning safety light curtains.

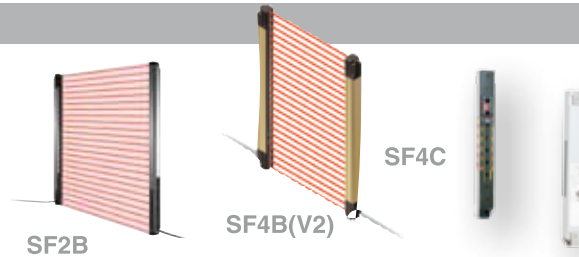
Product overview

Global safety

From the single-beam safety sensor to the safety laser scanner. The four product categories guarantee the safety of persons working with machines in industrial manufacturing. All Panasonic safety products conform to international safety standards. For machine builders who export their machines, this can reduce costs significantly. You do not have to consider country-specific devices during the design phase because each of our safety devices meets the respective safety requirements in all countries. Global safety from Panasonic.

Safety light curtains (type 2 / type 4)

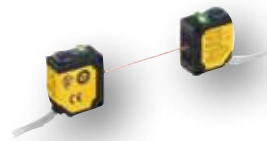
SF2B	Hand / arm protection	Type 2/PLd/SIL2
SF2C	Hand protection	Type 2/PLc/SIL1
SF4B(V2)	Finger / hand / arm protection	Type 4/PLe/SIL3
SF4B-C	Hand / arm protection	Type 4/PLe/SIL3
SF4B-G(V2)	Hand / arm protection, robust design	Type 4/PLe/SIL3
SF4C	Finger / hand protection	Type 4/PLe/SIL3



Safety beam sensor (type 4 / PLe / SIL3)

ST4

ST4



Safety laser scanner (type 3 / PLd / SIL2)

SD3-A1

SD3-A1



Safety control units (type 4 / PLe)

SF-C10

SF-C10



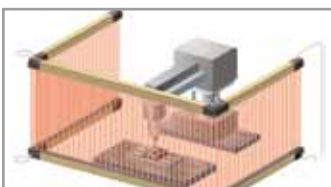
Other safety products from Panasonic

SQ-4 liquid leak sensor (type 4 / PLe / SIL3)



Application examples

Securing danger zones



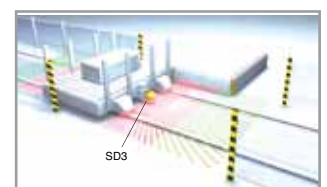
Preventing unauthorized entry

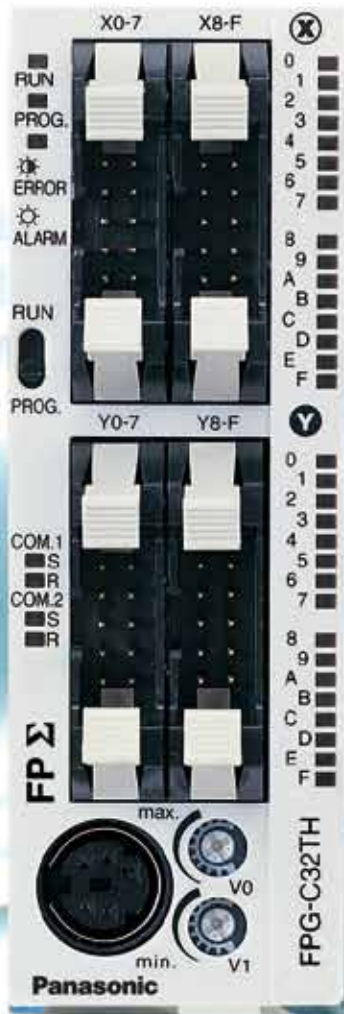


Monitoring dangerous areas along conveyors



Confirming safety around automatic guided vehicles





Effective hardware solutions

Our PLC products are characterized by an excellent price-performance ratio. Despite their compact size, many functions are integrated. For example, a powerful instruction set allows the PLCs to control complex tasks such as analog and positioning control, and perform network and remote control functions with practically no limitation.

Innovative programming software

Panasonic PLC programming software Control FPGWIN Pro was one of the first to fulfill the requirements for the international standard IEC 61131-3. Numerous libraries contain functions and function blocks in which we have invested a great deal of our know-how and which will save you time programming and debugging.

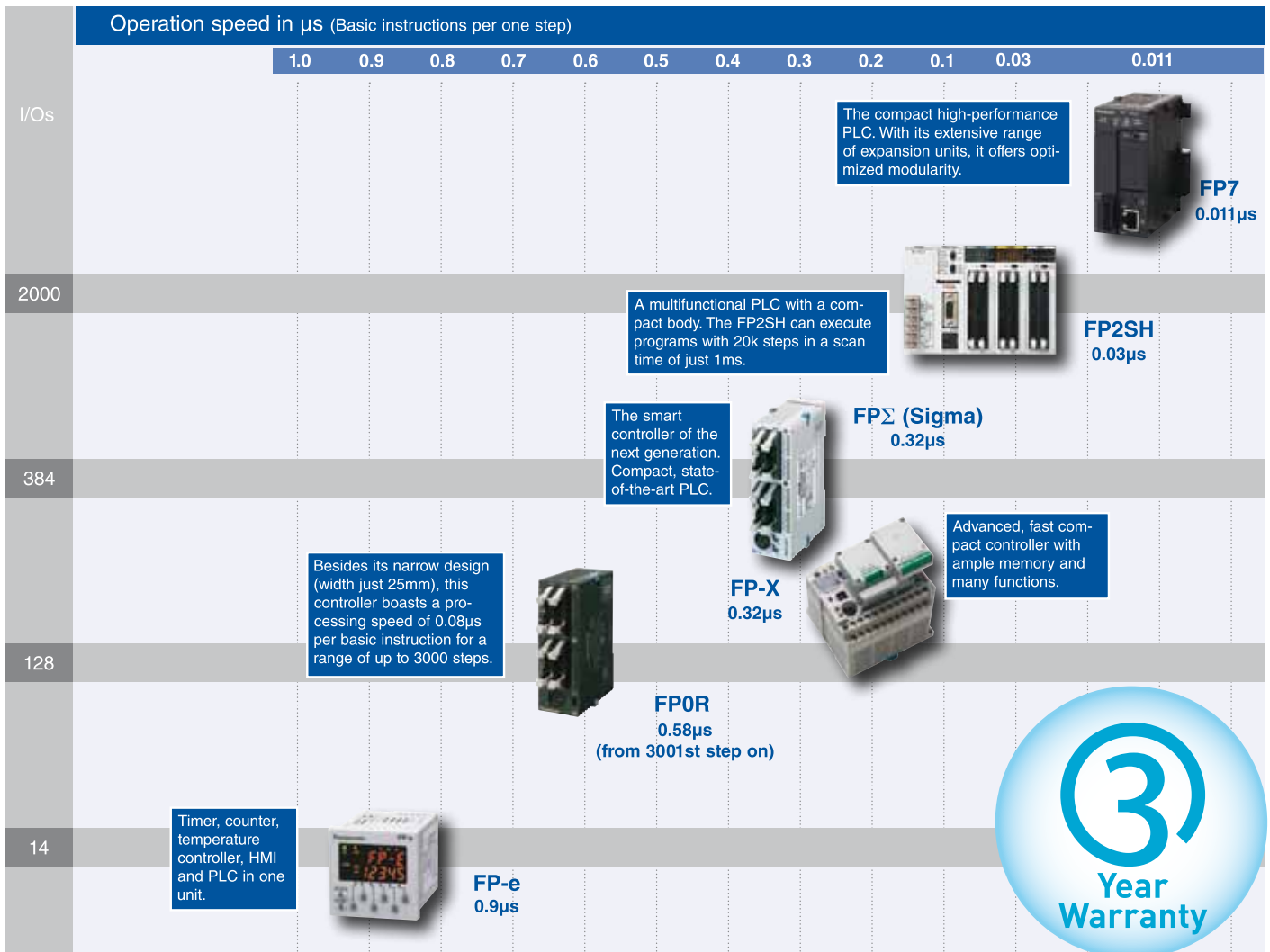
Long life guaranteed

As with all Panasonic products, the PLCs undergo extremely rigorous testing during development that far exceeds the demands that will actually be placed on them. Hence, a long product lifetime is guaranteed for the application.

Outstanding customer service

Panasonic not only offers a comprehensive PLC product range but also takes pride in providing top-notch service. For a customer-oriented company certified according to ISO 9001:2008, such commitment is self-evident. Highly trained application engineers can provide custom designed systems. Our sales representatives regularly receive training for our hardware and software products.

Product overview



All-in-one

The FP-e series is optimal for the most diverse applications. It's a timer, counter, hour meter, temperature controller and PLC all-in-one.

Perfect for small devices

The FP0R measures a mere 25x90x60mm (WxHxD). This ultra compact design appears to contradict all preconceptions for small PLC products.

Compact PLC

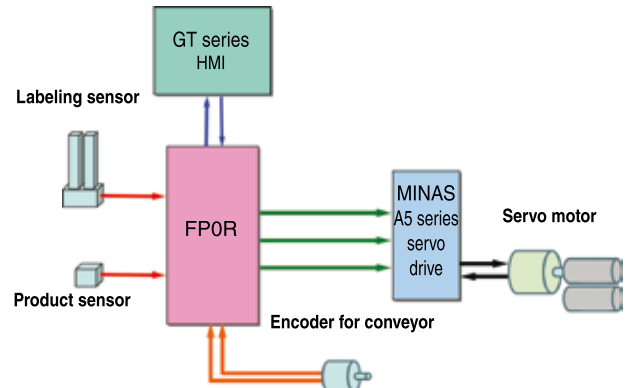
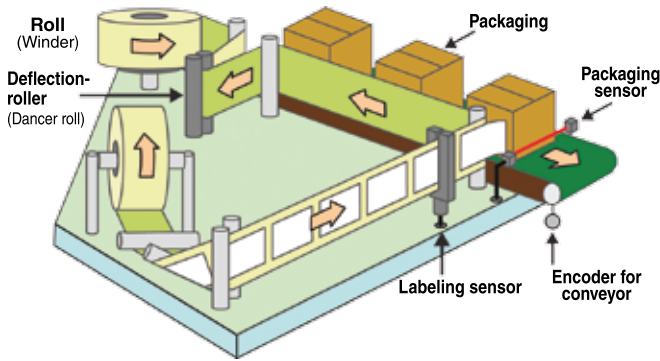
With its two 100kHz pulse outputs, four high-speed counter inputs and RS232C and RS485 communication interfaces, the FP Σ (Sigma) is one of the most flexible controllers on the market. Remarkably, it is also one of the smallest!

Ultra high-performance controllers

The FP7 is a high-performance PLC with a remarkable processing speed of only 0.011 μs . Depending on the model, up to 220,000 programming steps or 500,000 words data memory are possible.

FP0R series

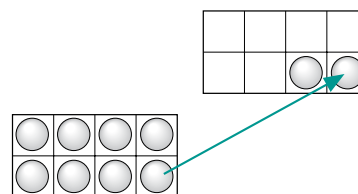
- Extremely high processing speed increases productivity
- 0.08μs/step for basic instructions for the first 3000 steps (0.58μs/step for all further steps). This makes the FP0R ideal for use in positioning tasks and process automation such as found in labeling machines, for example.
- Large program memory for 16k/32k steps
- Generous data register with 12k/32k words
- Independent comment memory so that you can document your application precisely
- USB 2.0 interface enables programs to be transferred quickly
- Maintenance-free, complete backup of all data without needing a battery for the new F type – to date unique in industry!
- Integrated positioning control for up to 4 axes (servo/step motors)
- Many alternatives for network communication via integrated interfaces or expansion units
 - Ethernet (Modbus TCP/IEC 60870)
 - PROFIBUS
 - CC-Link
 - MEWNET-W0
 - C-NET
 - Serial communication via RS485/RS232C (SEAB 1F/RK512/3964R)
 - FP0R – just as compact as FP0
 - Fully compatible with FP0 units



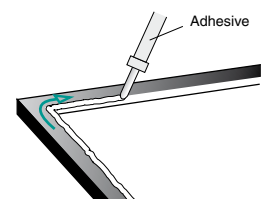
Processing speed of up to 1200 labels/min. Fast start-up time: 30μs. Control of up to 4 axes. 6 channels for high-speed counter input.

FPΣ (Sigma) series

- With its large program memory capable of handling 32k steps, the FPΣ (Sigma) can handle the rising demands in the functionality and complexity of applications, and system expansions or modifications can be easily realized.
- All of 100,000 I/O comments, 5000 lines of line-space comments, and 5000 lines of remark comments are saved in FPΣ (Sigma) together with programs.
- The RISC processor enables an extremely high processing speed with a scan time of less than 2ms for 5000 steps.
- Powerful positioning unit
- A pulse output speed of up to 4 million pulses per second and a start-up time of just 0.005ms make the FPΣ (Sigma) perfect for high-precision servo drive applications.
- Simple temperature control
- Using the PID instruction F356 (EZPID), you can create a one-line program to control temperature. It has never been easier to control temperature with a PLC.
- Linear interpolation and circular interpolation are built-in (FPG-C32T2H-A and FPG-C28P2H-A). Interpolation functions enable simultaneous control of two axes.



Linear interpolation



Circular interpolation

FP-X series

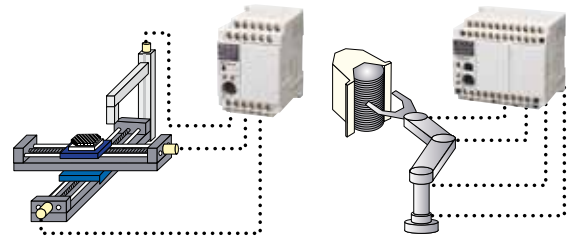
- With its large program memory capable of handling 32k steps, the PLC can handle the rising demands in the functionality and complexity of applications. System expansions or modifications can be easily integrated.
- The RISC processor enables an extremely high processing speed with a scan time of less than 2ms for 5000 steps.
- Add-on cassettes can expand the functionality, maintaining the space-saving size.
- Up to 3 add-on cassettes can be easily mounted on the CPU. In this way, the functionality of the controller can be increased without requiring more mounting space. 16 kinds of add-on cassettes, including communication and analog input cassettes, cover a great number of possible applications.
- Multi-axis control by the built-in pulse output
- The CPU with transistor output comes equipped with an integrated pulse output that makes multiple-axis applications for servo and step motors possible. C14: 3 axes, C30/C60: 4 axes.

Built-in 4-axis pulse output: 2-axis linear interpolation simultaneously in two sets: The FP-X transistor output type is the first compact PLC that can manage this kind of axis control.



X/Y table + processing head

Robot arm for semiconductor wafers



3-axis control with C14

4-axis control with C30/C60

FP-Safe

Compatible with all FP-series PLCs

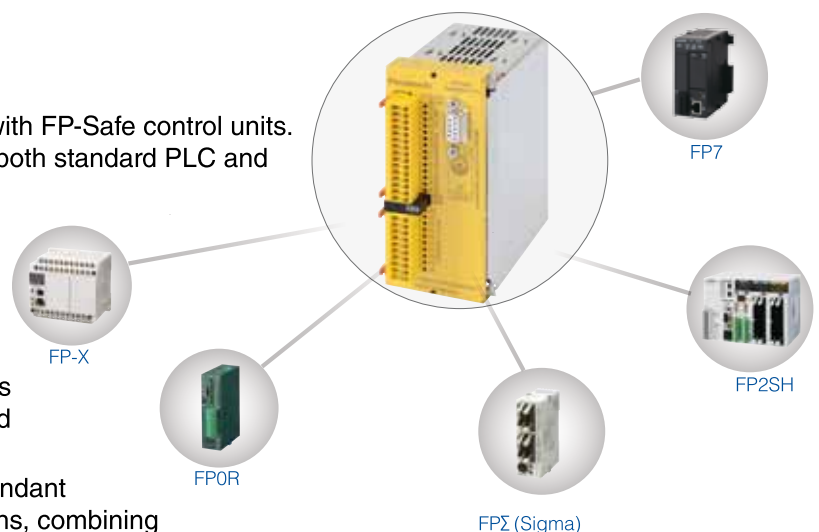
- All Panasonic FP-series PLCs can be combined with FP-Safe control units. This combination provides you with a solution for both standard PLC and safety-related functions.
- Easy diagnostics and communication are the greatest advantages of this overall solution.

Flexibility and cost-effectiveness

- Compared to individual safety relay modules, the FP-Safe units can be freely configured. This makes designing the system flexible, simplifies wiring, and enables trouble-free communication with the PLC.
- Compared to complex solutions in which two redundant CPUs monitor standard and safety-related functions, combining FP-Safe control units with FP-series PLCs is far less expensive while offering much better possibilities for expansion.

Safety and wide range of functions

- With a single, compact FP-Safe control unit, you can configure up to 5 safety-related functions (SRF), without requiring an expansion unit.
- Setup and configuration is like child's play, thanks to our user-friendly software, FP-Safe Configurator.
- All status information regarding the FP-Safe controller unit's safety inputs and outputs are monitored by the PLC.
- A function block for Control FWIN Pro handles the transmission of diagnostic data to the FP-series PLCs.





Telecontrol solutions

For decades Panasonic Electric Works has developed products and solutions for remote control. Our products, which are fine-tuned to function together seamlessly, and wealth of experience enable us to provide expert, comprehensive support.

Where it counts

- High quality products
- Customized solutions
- Competent development and advice
- Comprehensive assistance up to the commissioning stage
- Modern communication media = long-term, cost-effective investment

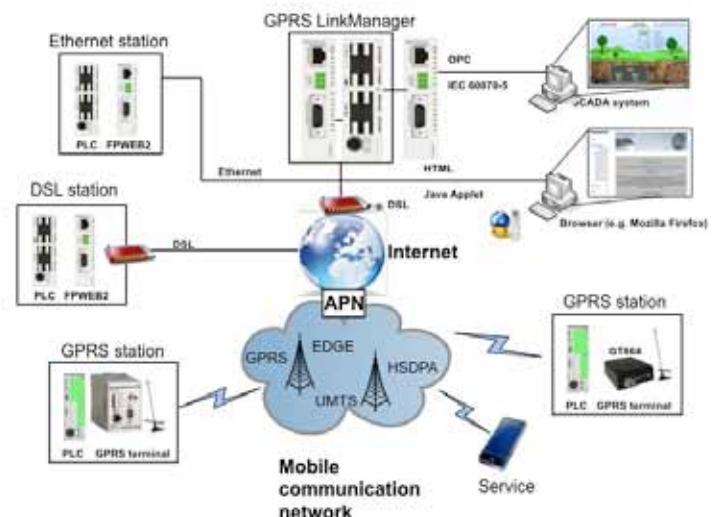
What it comes down to

- Superior operating reliability for the system
- Long-term investment security for expansions
- Calculable costs for acquisition, setup and operation
- Can be integrated into existing systems
- Flexibility in choosing communication media
- System solutions from one provider

Why customers choose Panasonic

- Process automation and remote control in one PLC
- Simple and secure connection from substations to the process control system via GPRS, Internet, modem, for example
- Control room is isolated from the Internet, enabling best possible protection for your data
- All the hardware you require – from one provider
- Flexibility when choosing digital and analog I/O units

Possibilities for communicating with the Panasonic GPRS LinkManager



Our solutions for you: Live demos about water/waste-water treatment and providing of power

Live demo of GPRS LinkManager

- Entry-level concept of process visualization in water supply facilities
- Expandable and scalable without restriction
- Tailored to your individual needs and requirements
- Simple and inexpensive

Demo of FP Web-Designer

- Simple and tailor-made solutions for controlling and monitoring automated processes
- Free scalability of the different applications
- Special industry reports available, e.g. Hirthhammer

Demo of IEC 60870-5

- Overview of the performance of scalable IEC-60870-RTU solutions
- Just configure, don't program
- Get an outstation ready for operation in three steps



Check out our live videos online



For our live demos, use the QR code or click the banner on www.panasonic-electric-works.com:

We will gladly demonstrate our customizable solutions to you in person and offer you our advice without obligation. See for yourself the unique flexibility and the state-of-the-art technology of Panasonic's inexpensive and compact remote control systems.



MINAS A5 servo drives

- Ultrafast response frequency: 2kHz bandwidth (velocity response)
- Pulse inputs and outputs with up to 4MHz
- Real-time auto-tuning function during operation
- 4 notch filters: manual/automatic
- 4 damping filters: manual/automatic
- PANATERM V5.0: Free software for configuration and motion simulation
- Conforms to the following safety standards: EN954-1 (CAT3), ISO13849-1 (PLd), EN61508 (SIL2), EN62061 (SIL2), EN61800-5-2 (STO), IEC 61326-3-1
- Full-closed control



MINAS A5 motors

- 20-bit high-precision encoder
- Low cogging torque
- Degree of protection IP65/IP67 for all MSME motor types (except shaft feedthrough and connectors)
- Compact design

Advantages

- Manual and automatic notch filters
- Manual and automatic damping filters
- Motion simulation

1 Quick

- 2kHz response frequency
- 20-bit encoder
- Low cogging torque
- 4Mpps input/output pulse

2 Smart

- PANATERM configuration software
- Encoder temperature monitoring
- Data logging function

5 Intuitive

3 Compact & light

- New structure
- Innovative motor core

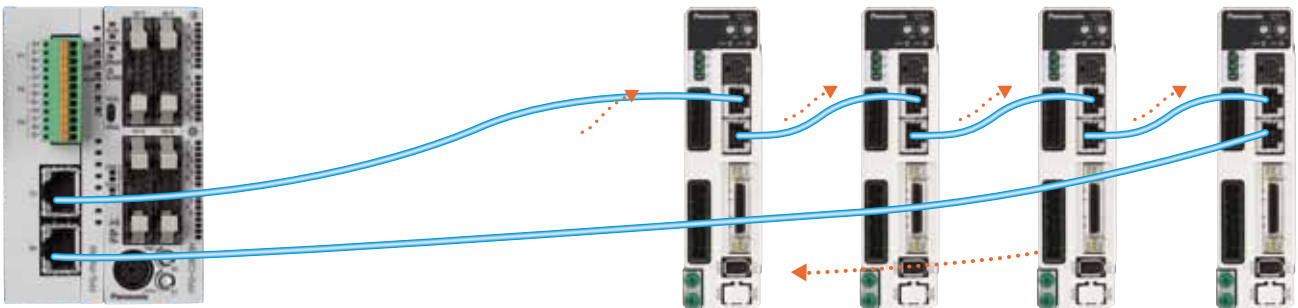
4 Safe

- Fulfills European safety standards
- Little noise generation
- IP67 degree of protection

MINAS A5 network series

Thanks to its high transmission speed and sampling rate, RTEX (Realtime Express), the fast, real-time Ethernet bus for automation, is particularly well suited for highly dynamic single and multiple axis positioning tasks. The communication between master and slaves happens in real time.

EtherCAT (Ethernet for Control Automation Technology) is an open, standardized field bus and offers similar excellent features like RTEX. Its big advantage is the open data exchange with other EtherCAT motion controllers.



PLC and motion controller with Ethernet interface.
Minimization of wiring costs by using commercially available Ethernet cables.

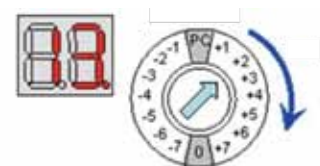
MINAS LIQI

MINAS LIQI, the simple and cost-effective servo driver solution from Panasonic. Especially when applications are highly dynamic, MINAS LIQI offers many advantages over stepping motors, asynchronous motors or pneumatic solutions, especially with regards to reliability, speed, or precise positioning as for the MINAS A5 series, the PANATERM software and the MINAS SELECTION TOOL assist users in setting up and configuring the MINAS LIQI series. The series is optimally suited for the processing industries involving food, packaging, printing, metals, and plastics.



Features

- Incremental encoder: 2500 pulses per revolution
- Reaction speed: 1kHz bandwidth (velocity response)
- PANATERM V5.0: Free software for configuration and motion simulation via USB port
- Real-time auto-tuning function during operation
- Damping (1-200Hz) and notch filters (50-5000Hz)
- Rotary switch (RSW): This is used to adjust the stiffness manually



Wireless units

Panasonic KR20 wireless units take advantage of the license-free, 2.4GHz frequency band to provide a flexible and efficient alternative for wireless communication between various end devices. Many topologies and protocols are available to choose from.

All KR20 models come equipped with an RS232 interface and can be configured either as a master or slave.

You can download our "Configurator KR" software from our website free of charge. Types with an RS485 interface and 8 (NPN) or 6 (PNP) digital I/Os (KR20, I/O type) are also available and can transfer data extremely fast and securely.

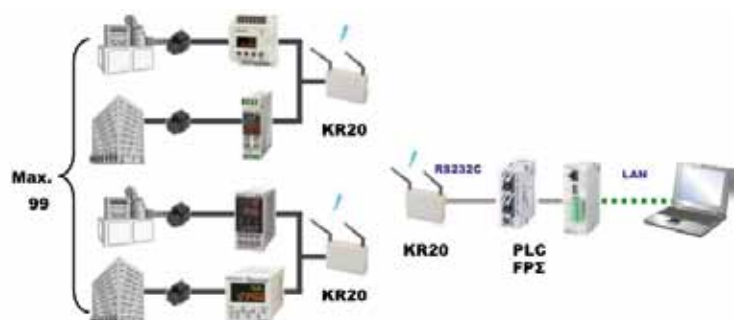
Accessories



Specifications

Type of wireless transmission	Direct sequence/spread spectrum (DS-SS)
Frequency	2403.328 to 2480.128MHz (2.4GHz band)
Number of channels	89 (17 in one "room" simultaneously)
Wave output	6mW
Transmission speed	34kbit/s
Transmission distance	Up to 250m outdoors (obstacle-free), 50m indoors
No. of connected KR20 units	99
Number of connected units	Up to 31 terminal stations per KR20 (RS485 type AKR2002), max. 254 terminal stations in total
Repeater function	8 repeaters, max.
Interfaces	RS232 and RS485 (RS485 type AKR2002)
Serial transmission speed	1200 to 115,200kbit/s
I/Os	8 digital inputs and 8 digital outputs (I/O type AKR2015)
Supply voltage	10.8 to 26.4V DC
Ambient temperature	-10° to +50°C

Application example



Aicure UV curing system

Panasonic's UJ30/35 series LED-based UV curing systems open up a whole new range of applications for curing adhesives, coating and printing ink. Up to four individually controllable heads that emit UV irradiation at wavelengths of 365nm or 385nm can be connected.

Highlights

- UV-LED head – max. 12,800mW/cm²
- Temperature feedback control
- Saving application-specific profiles
- LED heads require no warm-up time
- Passive cooling, no fans required
- Configuration software for UJ35

Advantages

- Short cycle time
- Low operating costs
- Stable irradiation process
- Minimal thermal stress on components
- Compact size
- Easy to maintain and long lifetime

Application examples

Automotive parts:
Bonding LCD boards to FPCs



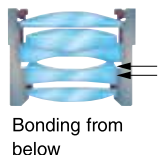
Medical products:
Bonding of disposable syringes



Optical components



Printing:
Curing ink on labels



Wide product range

Panasonic's new human machine interfaces (HMIs) can be used anywhere, from industry to building automation. Panasonic HMIs cover a wide spectrum, ranging in size from a compact 3" touch panel to a color 15" display for sophisticated applications.

Quality you see

High-quality design offers a brilliant display and allows you to configure parameters such as brightness and contrast individually so that you can easily read the display no matter where it is. Moreover, all LCDs can be read at wide angles. The compact housing and protective plastic sheets for the display attest to a robust design.

All Panasonic HMIs fulfill the required international standards and regulations. As with all Panasonic products, our HMIs are subjected to tests during development that far surpass normal requirements. Components and materials are meticulously selected so that a long lifetime is guaranteed.

Panasonic Movicon

Panasonic provides the most powerful touch panel software for Windows™ CE currently available: Movicon 11. This development platform allows you to create sophisticated projects that fully meet your demands for visualization and control within compact environments – without having to relinquish the advantages of a SCADA system. Movicon CE™-Runtime provides our GN series with wide-ranging flexibility:

- Alarm management
- Multiple drivers
- Integrated VBA logic
- Built-in Web client
- Security concept
- Data loggers and recipes on database
- Extensive graphic library



GN series: Broad spectrum of applications

The GN series lends itself to a broad spectrum of applications. Besides basic functions such as recipe management, alarm lists, and multiple language selection, it includes the necessary hardware for data logging.

If your application requires an HMI between 7" and 15", Panasonic's GN series is the right answer.



	GN07	GN10	GN12	GN15
Display size (W x H in mm)	7" 152.4 x 91.44	10.4" 211.2 x 158.4	12.1" 246.0 x 184.5	15" 304.1 x 228.1
Display	TFT, 256k colors	TFT, 256k colors	TFT, 256k colors	TFT, 16.2 million colors
Brightness	330cd/m ²	230cd/m ²	400cd/m ²	350cd/m ²
Resolution (W x H)	800 x 480 pixels	800 x 600 pixels	800 x 600 pixels	1024 x 768 pixels
Processor	Intel® Atom™ N270 1.6 GHz			
RAM	512 MB			
User memory	Depends on the capacity of the CF card			
RS232	✓	✓	✓	✓
RS485 (422)	Optional			
LAN	2x 10/100/1000 Base-T	2x 10/100/1000 Base-T	2x 10/100/1000 Base-T	2x 10/100/1000 Base-T
USB	2x back, –	2x back, 1x front	2x back, 1x front	2x back, 1x front

GT series: Compact and versatile

GT series touch terminals make communication between humans and machines easy. With a mounting depth ranging from just 27mm for the GT02 to 39.1mm for the GT32, the GT series are the most compact HMIs in their class. The resolution for text and graphics is 128 x 64 to 320 x 240 pixels. The new touch terminals GT32-E and GT03-E are perfect for use in difficult operating conditions. They work within a temperature range of -20°C to +60°C, offer IP67 and excellent legibility with a non-reflective display.



Temperature controllers

Cost-effectiveness, high performance and precise temperature control characterize Panasonic's entire temperature controller product range.

Universal inputs (thermocouples, resistance temperature detectors, direct current, voltage), various output types (relay, transistor, current) and user-friendliness are the main selling points for the Panasonic KT series.

Timers, counters

Simple and precise configuration make our analog and digital timers suitable for all control systems. This portfolio is rounded off by flexible and reliable preselection counters and robust hour meters.

Limit switches

Panasonic limit switches are marked by their compact design, high performance, long life and quick mounting as a result of simplified wiring. This qualifies these products to be used in demanding applications such as conveyor systems.

Fans

Panasonic fan motors are characterized by high performance, a long lifetime and quiet operation.

Due to their superior performance, immediate availability in all standard sizes for both DC ("ASFN") and AC ("ASEN") applications, our fans lend themselves for a wide range of applications.



Highlights

KT4H/KT4B

Compact



- 11-segment display with 3 colors for process value
- 4 set values (externally switchable)
- Tool port included by default
- MEWTOCOL communication protocol
- Three-point control with second, optional control output (transistor)
- Second optional alarm output

AZD series

DL miniature limit switch



- Forced opening/separation of the contacts in case of welding
- Stable mounting provided by two mounting holes and two adjustment holes possible
- Actuator adjustable in increments of 90° (arm types)
- Superior degree of protection: IP67
- Screw terminals mean quick wiring
- Approvals: CE, UL/CSA, TÜV

LT4H series

Timers



(white front panel)



(black front panel)

- Operating voltage range: 12V DC – 24V AC/DC, 100V AC – 240V AC
- Up to 8 operation modes
- Time range can be set from 0.001s to 999.9h and from 0.01s to 9999h
- Socket and DIN rail mounting
- Easy to read
- Two-color LED display
- LT4H-W R twin timer relays with 2 independently configurable operation modes
- Dimensions: 48 x 48 x 65.5mm / 48 x 48 x 70mm

ASEN series

AC fan

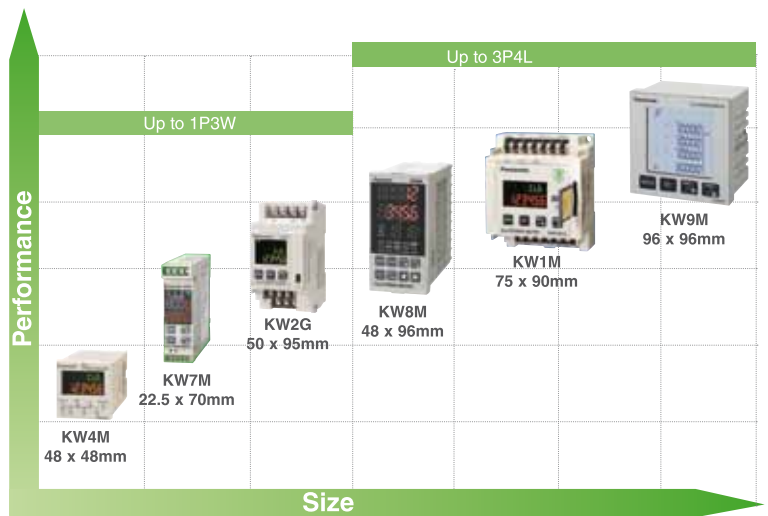


- Operating voltage range: 100, 115, 200, 220, 230, 240V AC
- For applications with 50/60Hz
- 3 rotation speeds per model
- Frame: Aluminum alloy
- Long life
- Quiet operation
- Optional: Cable (length 300mm) or "Faston #110" connector

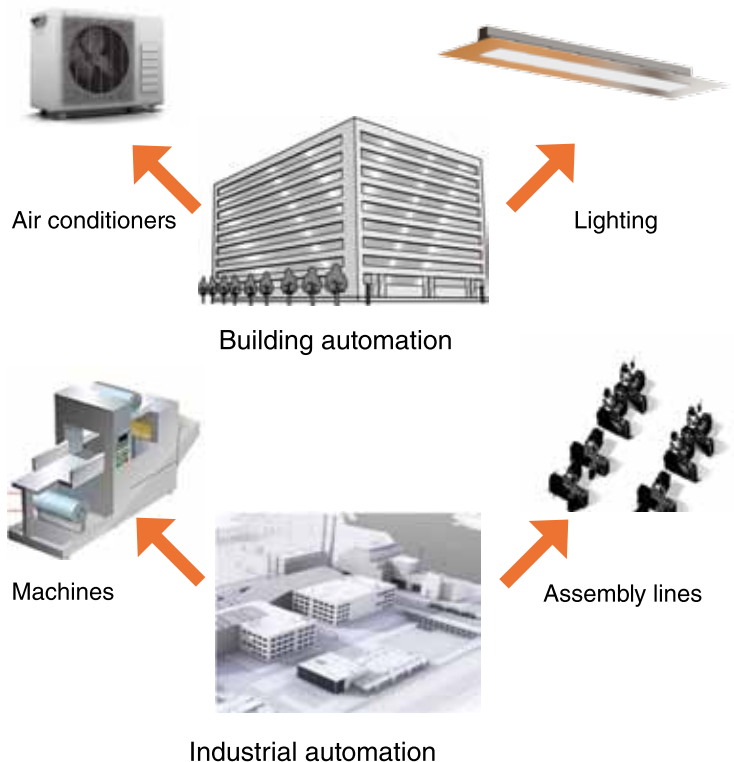
Panasonic Eco-POWER METERS

With its Eco-POWER METER series, Panasonic provides the basis for an intelligent, state-of-the-art energy management system. Energy consumption is identified efficiently and the energy requirements for the various subprocesses become transparent.

You thereby get an overall impression and can plan where to save energy. Constant energy monitoring provides meaningful values for comparison so that you can undertake sensible, realistic measures to optimize energy use, whether in building, factory or process automation.

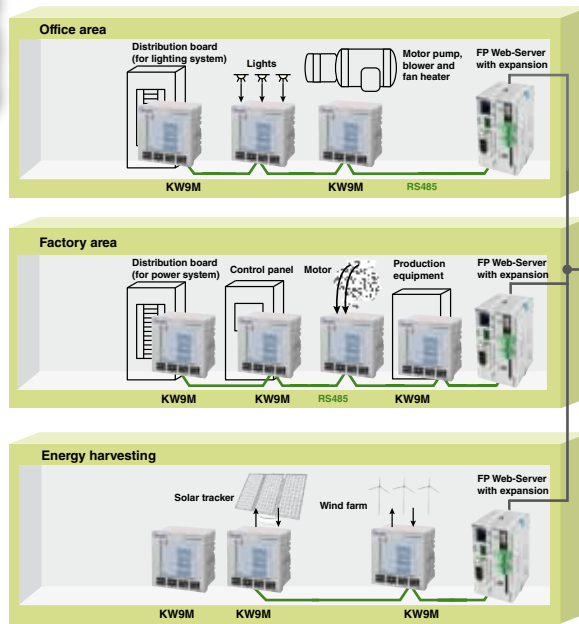


Possible application examples:

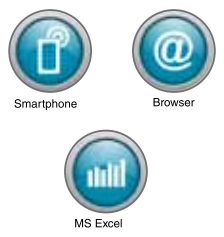


KW9M

- Large 4-line LCD display with backlight
- High accuracy, instantaneous active power: 1%, class 1 (IEC 62053-21)
- Display updating time: 0.1s
- Panel-mount type capable of multi-circuit measurement
- Measures up to three circuits in a 1-phase, 2-wire system simultaneously
- Displays currents as low as 1mA
- Bidirectional measurement of electric power in each circuit
- Compatible with AC/DC power supply
- Direct connection to 1A/5A current transformers (secondary side current)
- Suitable for measuring alternating currents of up to 500V



For details of products other than KW9M, please refer to the individual catalogs.



Current transformers



Characteristic	Clamp-on type				Through type		
	AKW4801C	AKW4802C	AKW4803C	AKW4804C	AKW4506C	AKW4507C	AKW4508C
Rated primary current	5A/50A	100A	250A	400A	50A/100A	250A/400A	600A

Current transformers are not included with the product.

KW1M

- Screw and DIN-rail mounting possible
- Integrated RS485 interface (Modbus RTU/MEWTOCOL)
- Automatic logging of consumption data in user-definable intervals (saving to SD card possible)
- Multiple alarm functions, e.g. when power consumption exceeds set values
- Clock/calendar function
- Suitable for measuring 3-phase currents up to 400V
- Monitors and displays the most important electrical parameters
- Demand function integrated (KW1M-H)



KW2G

- Measures the power produced and consumed
- USB port for easy connection to a PC
- Simultaneous measurement of power and pulse input
- Up to 8 circuits for 1-phase, 3-wire and 3-phase, 3-wire systems, or 16 circuits for 1-phase, 2-wire systems
- Main unit can display measured values for both itself and expansion units
- Additional CT inputs by adding up to 7 expansion units without further wiring
- Quick installation
- Additional expansion units with analog and pulse inputs
- Compact size saves space
- Up to 8 units possible





Innovative, top-class marking technology

In the last few years the laser has gained importance as a tool for product labelling of producer and consumer durable goods and many production assembly lines cannot do without laser markers today. To satisfy this need, Panasonic Electric Works has become a competent supplier for automation products, especially laser markers.

Highly flexible laser marking systems are more important now than ever before: more and more components have to be marked to enable flawless traceability, and long machine downtimes must be avoided to keep costs down.

The product range comprises both fiber and CO₂ laser markers.



The Fiber Laser Marker

Panasonic's fiber lasers utilize an enhancement of YAG technology called FAYb (Fiber Amplified Ytterbium). These systems provide several advantages over traditional Nd:YAG systems, such as a better beam quality, smaller housing dimensions, a significantly longer lifetime and lower fixed costs because FAYb systems consume much less power and get by with simple air cooling instead of water cooling. Panasonic's fiber lasers can mark nearly all metals using the laser processes of engraving or black marking (annealing). Using the laser processes of internal foaming, carbonization (color change) or bleaching, resins can be marked with outstanding quality.



The CO₂ Laser Marker

The CO₂ Laser Marker from Panasonic uses a wavelength in the midrange infrared spectrum (9300nm and 10,600nm).

Lasers using this wavelength are perfectly suited to permanently mark resins, enamel surfaces, glass and organic materials such as paper, wood, rubber or leather.

The special feature of the LP-400 series is the ultra fast and highly accurate galvano-scanner that can mark moving objects on-the-fly at a line speed of up to 240m/min.

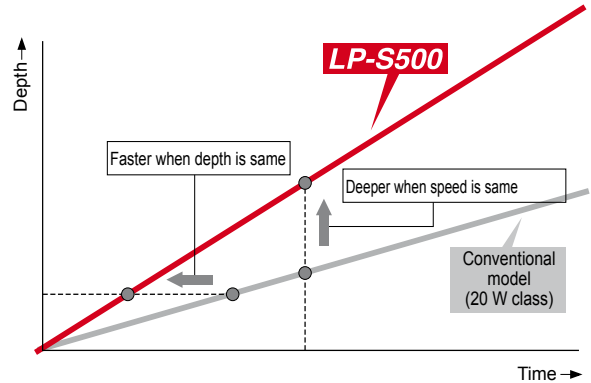
Highlights

High output power

The high output power offers superior quality for deep engraving and high-speed productivity

The 42W high-power output enables high-speed deep engraving and black marking on metal workpieces in excellent quality. This allows quick and accurate marks to be performed on precision metal parts, such as bearings and tools. The higher the output, the faster and deeper is the marking or processing. The LP-S500 is equipped with a high-output laser unit. This shortens the marking time, greatly improving productivity.

Simulated characteristics of high-speed deep engraving



3D control

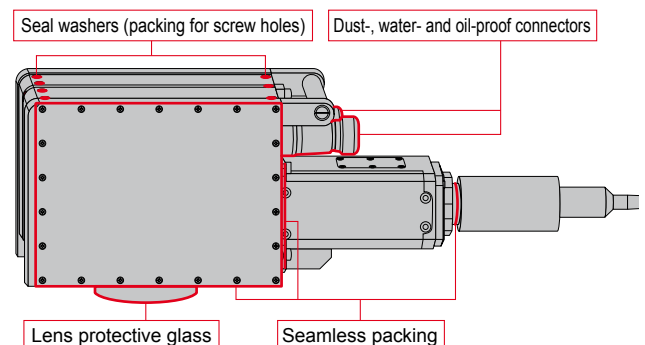
Flexible, precision marking on complex shapes

Z-axis control within a range of 50mm (± 25 mm) allows the head to mark curved, sloped and spherical surfaces as well as surfaces with varying heights. Spot size remains stable, ensuring consistent, high-quality marking. It is even possible to mark 2 facing surfaces in 1 step if the laser head is mounted at an angle, e.g. 45° . Interior surfaces where access is limited can now be marked where mirrors normally need to be used, for example to mark fill levels in pots or measuring cups. This feature can dramatically reduce setup, installation and design costs.

High degree of protection IP67G

Superior design and high quality protection parts

The LP-S series features minimum frame seams. Minor seams and screw holes are completely sealed, producing high sealing performance. Maximum cooling efficiency is also achieved, allowing the use of a fanless head for thorough cooling. Seamless sealing materials are used that have low water absorption and excellent oil resistance properties. Connectors are dust, water, and oil-proof.



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China

Japan

Panasonic Electric Works

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