Panasonic
INDUSTRY

Connectivity for IIoT Industry 4.0

IN Your Future

IN Your Future

Everything from a single source

With over 100 years of innovation and manufacturing expertise, Panasonic Industry Europe remains committed to its vision of creating "A Better Life, A Better World." Panasonic can look back on decades of experience in the electronics industry and, thanks to its dedicated customer orientation, is a competent and reliable partner for customers throughout Europe when it comes to technical expertise in combination with solution orientation. As a provider of tailor-made solutions, we focus on offering our customers products and services in the Mobility, Living Space and Business sectors that make a difference thanks to our proprietary innovations.

Connectivity is becoming more and more important, in social live but also in factory automation. As the backbone which enables Industry 4.0 and drives IIoT applications industrial networks are of highest importance for a connected and flexible production.
Based on our wide portfolio of factory automation devices we are offering the right solutions for an open and futureproof factory automation environment.

Application examples:

Machine builders	Liquid dispensers	Machine automation	Positioning systems	Packaging	Metal processing

Content

Service

Panasonic Industry Europe's comprehensive service includes an expert hotline, workshops and on-site service to ensure the reliable and effective use of our programmable logic controllers. In addition to its wide-ranging product portfolio of programmable logic controllers,

Panasonic Industry Europe also offers sensors, touch panels, drive technology, energy management systems, ionisers, automation components and many other products and complete solutions.

SOLUTIONS FOR CONNECTIVITY & COMMUNICATION
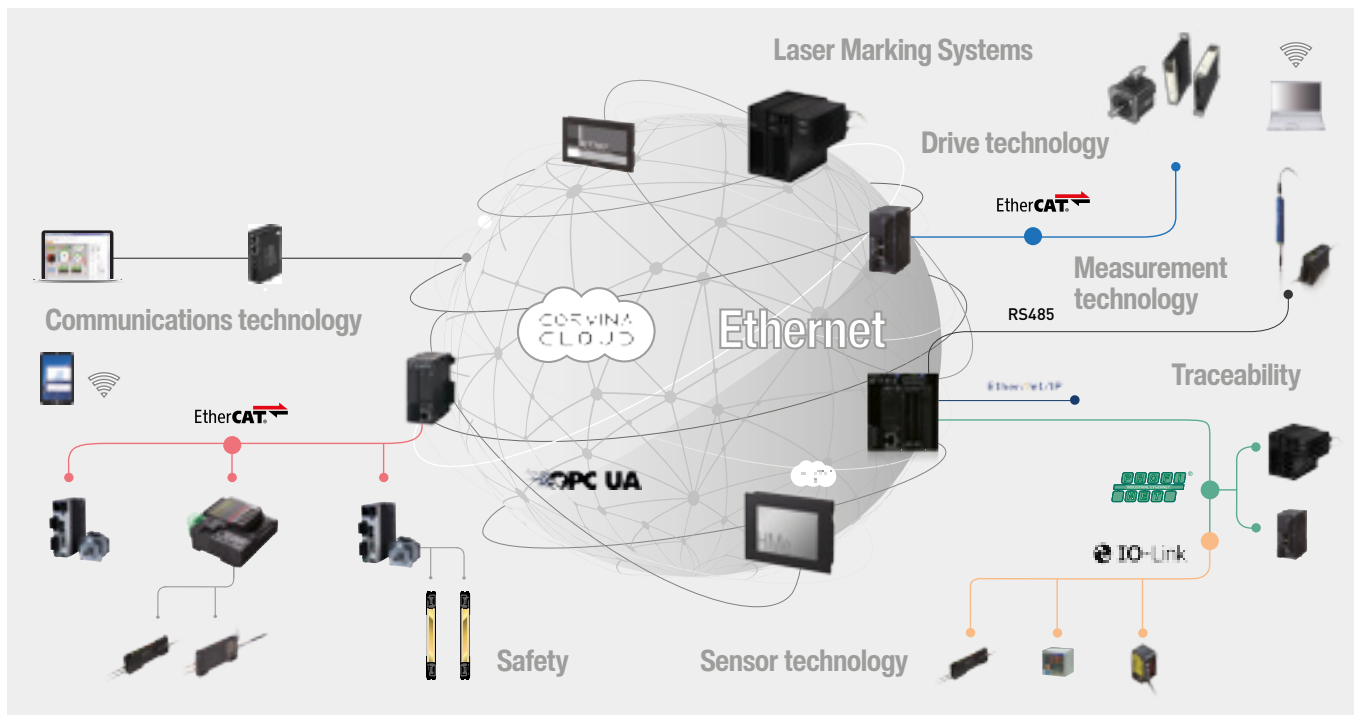
Communication technology

Internet of Things

First, even the Internet of Things (IoT) needs remote access to the device. That is why M2M is part of the IoT. But this is not limited to the exchange of data between intelligent systems. It applies also to data from sensors and actuators that are first collected and processed locally and later sent via a gateway to an IT center or to the cloud. Here again, Panasonic has been offering a versatile and flexible tool that provides various solutions for these requirements for over 25 years in the form of the well-known web server. In order to meet the growing demands of the rapid evolution that has taken place in this area, particularly in recent years, Panasonic now also has new devices and technologies in its portfolio that offer the latest solutions in the field of communication.

Data security and data availability

Central aspects of communication technology are naturally data security and data availability. On the one hand, data have to be secure to prevent attacks from the outside during both transmission and storage. On the other hand, the data have to be reliably available to authorized persons at all times. The data are securely transferred and the devices protected against unauthorized access by means of encryption and X-509 certificates. Data buffering and mechanisms for the transfer of data with time stamp are available for continuous data recording. Panasonic is the right partner to be able to guarantee both data security and data availability with its reliable and innovative devices.

M2M

M2M defines the communication between two machines, or the exchange of data between a more or less intelligent device and a central computer. The device communicates with the computer via a point-to-point connection in order to transmit sensor data, such as filling levels or alarm messages, to the operator. The solutions have been continuously adapted to the latest developments, so that Panasonic can offer both time-proven and new technologies here.

Industrial ethernet

The data transfer methods for Industrial ethernet are reliable and ensure a fast and safe transmission of information. For the different applications, users have a choice of several devices which can be selected according to individual requirements and prerequisites..

EtherNet/IP

Via EtherNet/IP, several programmable controllers of the FP7 and FP0H series communicate with each other or with decentralized digital and analog input and output units (so-called remote I/Os) to read out and control values and settings. The remote devices are uniquely defined in the central controller by an EDS file. The ESD file is provided for each EtherNet/IP enabled device by the manufacturer. The file ensures that devices from different manufacturers can communicate with each other via EtherNet/IP.

Modbus TCP

Modbus TCP is a protocol that enables data exchange between a master and several slaves. The protocol has become a de-facto standard in the industry and is part of the IEC 61158 standard. Transmission is done with TCP/IP packets. Our FP7 and FP0H controllers are compatible with this way of data transfer. All other PLC types work with our FP-I4C.

PROFINET

PROFINET is used to connect individual devices to a central control system. All control and monitoring tasks are performed by the central control system. PROFINET is an advancement of the PROFIBUS standard and is mainly used in the field of motion control. A GSD file describes the device connected in the periphery. GSD files are used to configure the infrastructure of the connected devices. A PROFINET master module is available for the FP7, PROFINET slave modules for the FP0H.

# SOLUTIONS FOR CONNECTIVITY & COMMUNICATION

Interoperability

OPC DA

The Panasonic FP OPC Server allows high-performance data transfer between applications supporting the universally accepted OPC DA Standard (v1-v3) and Panasonic FP Series PLCs. OPC (OLE for Process Control) is a standardized communication interface that enables data exchange between client applications (e.g. HMI/SCADA systems) and industrial devices (e.g. PLC, I/O units, drives).

OPC UA

For the implementation of Industry 4.0 it is necessary to connect all production processes within a network. However, this is difficult because the conventional field bus systems work with so many different protocols. This is why a universal communication standard is required that can be used to connect machines with each other or with higher-level systems (such as SCADA/MES/ERP systems) and/or the cloud. OPC UA is such a standard machine communication protocol, and many companies offering automation and IT solutions have already integrated it into their product portfolio. OPC Unified Architecture (OPC UA) is the next generation of the successful OPC standard. OPC UA is a globally standardized communication protocol which allows the exchange of machine data independent of manufacturers or platforms. OPC UA works with the current security standards such as authentication via user name/password and encryption with X.509 certificates. Another advantage of OPC UA compared with traditional OPC standards is the fact that it is independent of the operating system.

OPC UA

OPC UA
HMe series

FP7 series

OPC UA
SCADA system

OPC UA
FP-I4C

All Panasonic PLCs
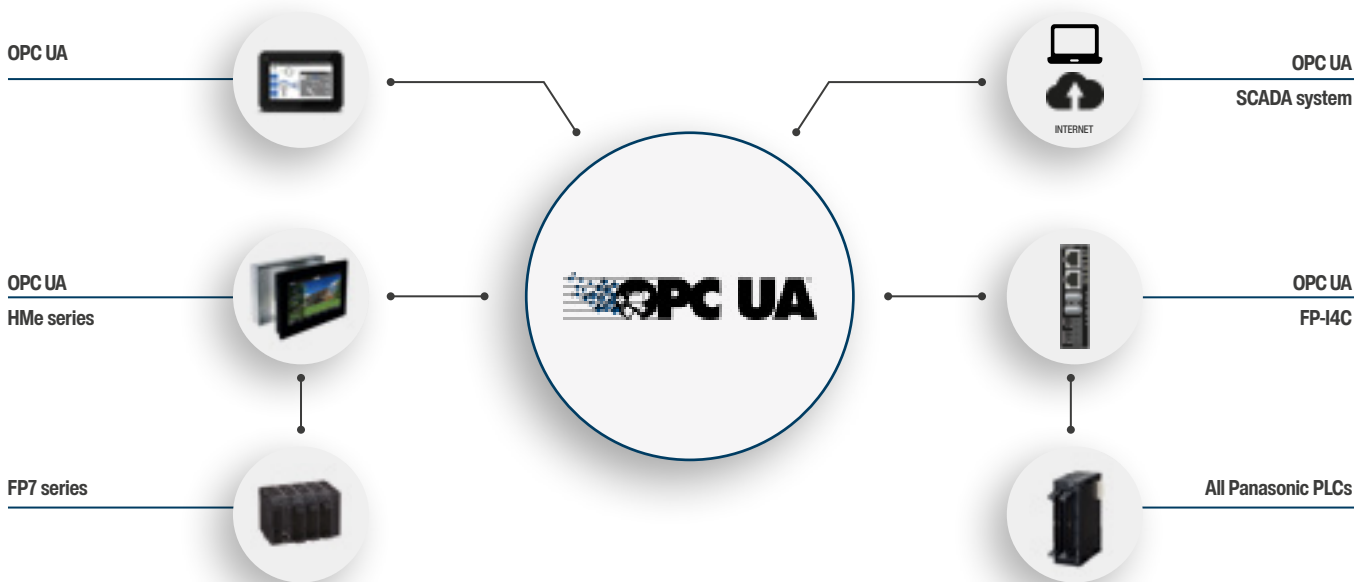
The key component of the Panasonic OPC UA mechanism is the HM series and the FP-I4C. If the touch terminal is used as the OPC UA server, the data points can be made available in the network with a defined semantic. Every OPC UA client can browse the tags of devices in the network and can use them for inter-machine data exchange. Another security feature is the access protection which can be added to variables/groups of variables/alarms/trends so that these items cannot be browsed or used externally by other OPC UA clients. The devices can also operate as an OPC UA client (both server and client can be used at the same time). In addition, all data can be visualized in the touch terminals and via the web server functionality of the FP-I4C.

MQTT

MQTT (Message Queuing Telemetry Transport) is a network protocol for connecting many individual devices to a so-called broker. The light-weight protocol is used in many cloud solutions to connect IoT devices.

HTTP client

The HTTP Client functionality works like a web browser and allows data exchange via GET/POST requests like a browser does. A secure transmission is achieved via HTTPS. The lightweight protocol is used in many cloud solutions to connect IoT devices.

EtherCAT

EtherCAT is a common real-time Ethernet-based fieldbus system. The open protocol is compliant with IEC Standard 61158 and is used by many companies as a backbone to connect automation devices.

IO-Link

IO-Link is an open communication technology according to IEC 61131-9 for the 1:1 bidirectional communication between the IO-Link device (sensor or actuator) and the IO-Link master. The automation industry is undergoing changes – machines are getting more and more complex, have started to communicate with each other, monitor their own operation status, and are able to detect errors at an early stage. All of this requires large amount of data, data processing, and evaluation. Sensors are generating data all of the time when they act as the senses of a machine. They recognize parts and measure pressures, lengths, or sizes. Now it is possible to feed the data easily into the machine network with the help of the universal IO-Link standard and an interface. Thanks to the bidirectional data transfer via IO-Link, it is possible to set or read out sensor parameters with a decentralized system.

One of the main advantages of IO-Link is that parameters can be copied across to a new device when a device has to be replaced. This eliminates the risk of errors caused by users setting the sensor parameters manually.

The data can be used specifically to minimize standstill times because problems on the sensor level are detected well in advance. In addition, the search for error causes is made much simpler as many data are known beforehand.

All IO-Link sensors from Panasonic have an integrated self-diagnosis function. The self-diagnosis function monitors function parameters specific to the sensor type and automatically outputs a warning signal if deviations from the specified behavior occur. Users save time because for maintenance it is sufficient to monitor only one signal instead of a number of sensor parameters.

Fieldbus systems

Unlike other manufacturers of programmable controllers, Panasonic has not committed itself to one fieldbus system and is able to offer various types. This ensures that Panasonic programmable controllers can be integrated as field bus slaves without problems into many existing systems, but can also be employed as fieldbus masters in the central control system. The following fieldbus systems are available:

> CANopen
> EtherCAT
> Profibus DP
> PROFINET

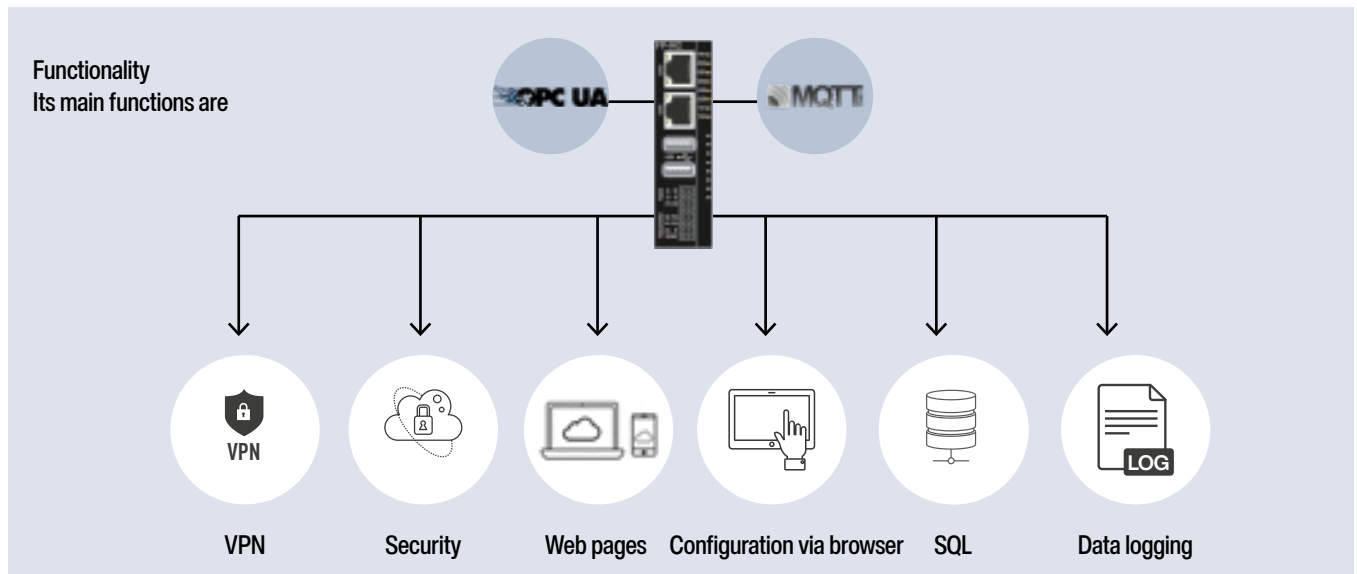# COMPONENTS FOR IIOT

FP-I4C

The IIoT gateway

Features

> Web server with HTML5 pages for mobile and PC connectivity
> Corvina Cloud with integrated VPN for remote access to the PLC (remote maintenance)
> Expandable with I/O units of the FP0R PLC series to collect information from sensors and actuators
> Sending files via FTPS client / server services

> Data management: storage of information in the internal memory or on a USB memory stick
> Excellent connectivity: two Ethernet ports (separate), 2 USB ports, 1 serial RS232C / RS485 port
> Configurable via internet browser and with the HMWIN development environment

Item	FP-I4C
PLC connection 1	PLC COM1: RS232C via 16-pin spring force plug: Phoenix contact product: MC 0.5/8-ST-2,5
PLC connection 2	PLC COM2: RS232C/RS485 via 16-pin spring force plug: Phoenix contact product: MC0.5/8-ST-2,5
Power supply	24V DC. Connection with the power supply cable (AFPG805) supplied with the unit.
2x Ethernet connection	10BASE-T / 100BASE-TX autoneg via RJ45 female connector
USB 1	USB 2.0 full speed, 500mA (power supply)
USB 2	USB 2.0 full speed, 100mA (power supply)
LEDs	Power, Ethernet, PLC data, USB, memory access, user configurable, system connection
Protocols and standards	TCP/IP, UDP/IP, DHCP, FTP, FTPS, SSH, http, https, SMTP, ESMTP-Auth, POP3, IEC60870, NTP, Modbus, DynDNS, SNMP, OpenVPN, Cloud service, VNC
Flash memory	2.4GB user/configuration data
RAM	496MB
Operating voltage	24V DC (22.4–26.4V DC supplied by class 2 circuit only)
Current consumption	Approx. 75mA at 24V DC (without expansion unit, USB stick,…)
Degree of protection	IP20
Ambient temperature	0℃ to +55℃
Storage temperature	-20℃ to +70℃
Humidity	Max. 30% to 85% (non-condensing)
Vibration resistance	10Hz to 55Hz, 1 cycle per minute with a double amplitude of 0.75mm; 10 minutes every X-, Y-, and Z-axis
Shock resistance	Min. 10g; 4 times every X-, Y-, and Z-axis
Dimensions	Height 90mm, width 25mm, depth 64mm
Weight	Approx. 110g
Operating conditions	Free of corroding gases and excessive influence of dust

FP-I4C – IIoT

FP-I4C: for everything in IIoT that requires remote operation, assistance and alarms

In today's world, users want to be able to instantly connect to, monitor, and operate machines and devices securely, no matter where they are. The FP-I4C gives you full insight into all IoT devices with real-time status alerts and early warnings. Thanks to the data provided, you can react quickly to reduce risks and proactively stop issues before they have a negative effect on your business.

Functionality
Its main functions are

VPN   Security   Web pages   Configuration via browser   SQL   Data logging

Access to SQL Database

The FP-I4C has client functionality for accessing databases and exchanging information with it.

FP-I4C

COMPONENTS FOR IIOT

c(UL)us CE RoHS compliance
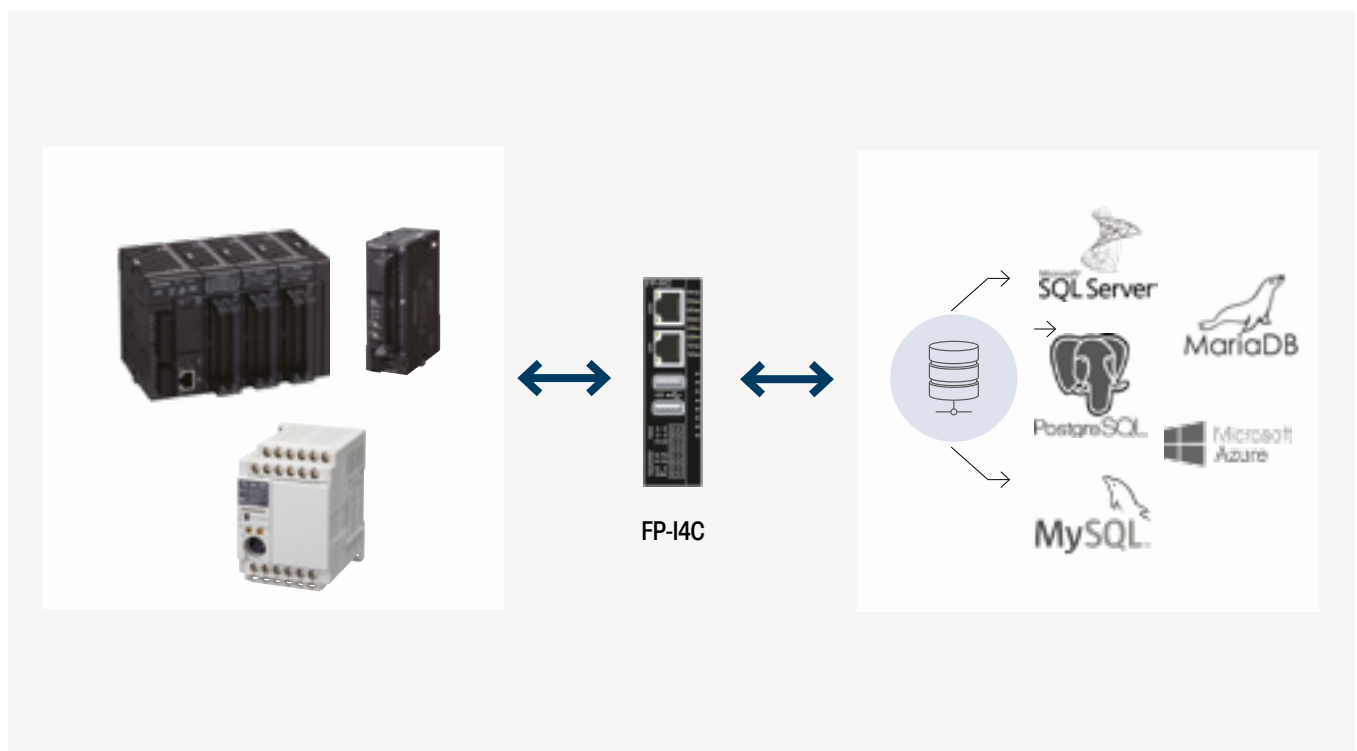
FP7 series

A new era of automation controls.
Visualize work site conditions through
information collection and transfer

Features

> Compact size with room for expansion functions equipped with a cassette interface.
> Up to 64 different units can be connected to a single CPU.
> High-capacity SD (SDHC) memory cards up to 32GB are supported.

> High performance (min. scan time 1ms, max. 20µs for 60k steps); the processing speed is less susceptible to frequent Ethernet communication.
> EtherNet/IP, MEWTOCOL, Modbus RTU/TCP, PROFIBUS DB master, PROFINET master, CANopen master, DeviceNet master.

Item	AFP7CPS21	AFP7CPS31	AFP7CPS31E	AFP7CPS41E
Power supply	24V DC or FP power supply unit			
Max. number of inputs/outputs	1024	4096		
Max. number of expansion units	Up to 16 units	Up to 64 units (4 x 16)		
Operation speed	16ns	11ns/step (basic instructions)		
Program memory	Built-in flash ROM (no backup battery required)			
Program capacity	64k steps	120k steps		196k steps
Internal relays (R)	32768			
Timers (T)	4096 points: 1–4,294,967,295 (in units of 10µs, 1ms, 10ms, 100ms or 1s)			
Counters (C)	1024 points: 1–4,294,967,295			
Ethernet function	–		Built-in	
Constant scan time	0–125ms			
Clock/calendar function	Built-in			

Local & remote connectivity

The FP7 is dedicated to the total integration into web applications. The standard CPU boards with Ethernet interface offer connectivity without limits, from remote programming to monitoring and data logging to FTP server and Modbus RTU/TCP.

ETHERNET (FTP)

Web-server function

Monitor and control the FP7 without the need for a dedicated software. Users can check the accumulated data in the FP7 with a browser and send control commands as required.
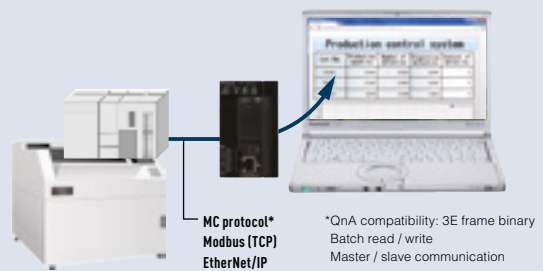
Data

Information updates via e-mail (SSL- compatible)

Supervise the operation of the equipment via e-mail. Receive and view daily reports as well as get notifications if a malfunction occurs.

Configure the FP7 to send e-mails on a preset schedule or when a preset condition changes in the PLC. The e-mails can be sent with data files attached and are protected by SSL.

E-mail

Local & remote connectivity

The standard CPU boards with Ethernet interface offer connectivity without limits, from remote programming to monitoring and data logging to FTPS server, MEWTOCOL (client/server), EtherNet/IP and Modbus TCP.

Production control system

MC protocol*
Modbus (TCP)
EtherNet/IP

*QnA compatibility: 3E frame binary
Batch read / write
Master / slave communication

Customer Web

Users set up their own screens with Control Web Creator and upload them to the FP7. Then, the information in the FP7's internal web server can be monitored with any browser.

Control Web Creator

This is a graphics creation tool that allows you to easily design web pages for content that is published by the FP7. Create your own design by arranging web components such as switches, lamps, and meters on the screen and then setting the properties. Your content will be linked to information in the PLC without you needing any knowledge of HTML.

Two types of web contents to choose from

Enter the URL in a browser

URL   http://192.168.xxx.xxx/

Ethernet

(Example) IP address: 192.168.xxx.xxx

COMPONENTS FOR IIOT

FP0H series

A compact PLC with multiple interfaces

Features

> 2 Ethernet ports as a hub
> EtherNet/IP as I/O scanner [controller], PROFIBUS DB master, PROFINET master, CANopen master, DeviceNet master, CANopen slave, DeviceNet slave, PROFIBUS DB slave, BACnet-IP slave, BACnet-MSTP slave, Modbus RTU, Modbus TCP, MC protocol

> High processing speed of 10ns per basic instruction (up to 10k steps)
> High program capacity up to 64k steps: 24k / 32k / 40k / 64k steps
> High data capacity: 12k / 24k / 32k / 64k steps
> 16 inputs / 16 outputs (transistor)

Item	AFP0HC32EP/T (with Ethernet)
No. of inputs/outputs	16 inputs, 16 outputs (max. 384 with expansion units), transistor output (PNP/NPN)
High-speed counter	Single-phase 4 channels (max. 100kHz per input) or two-phase 2 channels (max. 50kHz per input)
Interrupt input	Total 8 inputs (with high-speed counter)
Pulse output	4 channels (max. 100kHz per axis)
PWM output	4 channels, 1Hz to 70kHz (at resolution of 1000), 70.001kHz to 100kHz (at resolution of 100)
Built-in interfaces	Ethernet port x 2, RS232C port x 1, USB port x 1
Expansion	FP0H / FPΣ (Sigma) expansion unit x 4, FP0R expansion unit x 3, Slot for communication cassette (RS232C, RS232C x 2, RS485, RS232C and RS485)
SD memory card	Yes (SDHC)
Operation speed (basic instructions)	10ns (up to 10k steps)
Program capacity	64k / 40k / 32k / 24k (depending on system register setting)
Data register	12k / 24k / 32k / 64k (depending on system register setting)
Clock/calendar function	Built-in
Programming software	Control FPWIN Pro

FP0H – Basic Performance

Excellent basic performance in an ultra-compact body
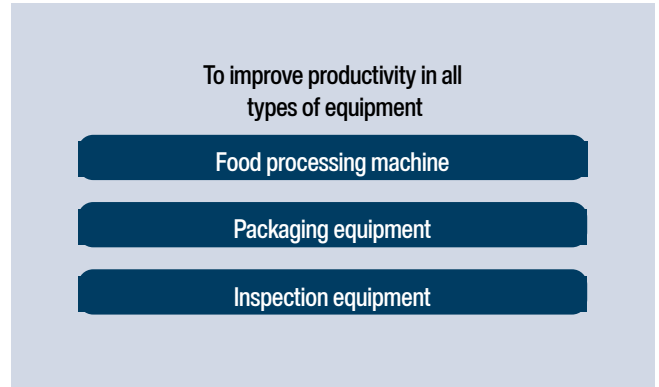
High-speed processing

Only 10ns per basic instruction (up to 10k steps), 8 x faster than conventional models
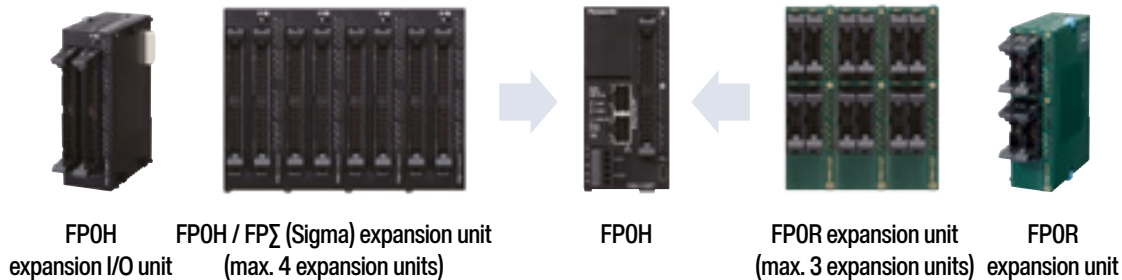
High capacity – two times larger than conventional models

Program capacity: 64k / 40k / 32k / 24k, data capacity: 12k / 24k / 32k / 64k

High compatibility

Ladder programs written for FP∑ (Sigma) can be converted for FP0H to facilitate the replacement.

To improve productivity in all types of equipment

Food processing machine

Packaging equipment

Inspection equipment

Expandable to 384 inputs/outputs with FP0H / FP∑ (Sigma) / FP0R expansion units

FP0H expansion I/O unit

FP0H / FP∑ (Sigma) expansion unit (max. 4 expansion units)

FP0H

FP0R expansion unit (max. 3 expansion units)

FP0R expansion unit

Suitable for ultra-fast linear servo drives

Built-in 4-axis pulse outputs

The control unit can control four axes with pulse output (up to 100kHz per axis), so simultaneous control of two 2-axis X-Y tables is possible. The configuration tool offers positioning tables to make it easy to set the parameters.

Simultaneous control of two 2-axis X-Y tables

FP0H
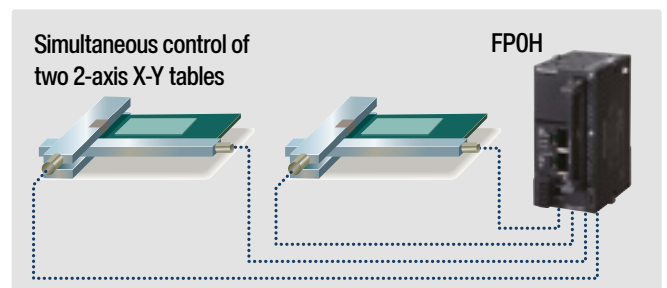
High-speed counter input

The speed of conveyor 1 (master axis), which is controlled by an inverter, is measured by counting pulse signals from the encoder with the high-speed counter input. The pulse output frequency is adjusted based on the count in order to synchronize the speed of conveyor 2 (slave axis).

Built-in multipoint PWM outputs (4 channels)

The pulse output port of FP0H can also serve as a PWM output port.

Motor (master)

Inverter

Conveyor 1

Conveyor 2

High-speed counter

Pulse output

Motor (slave)
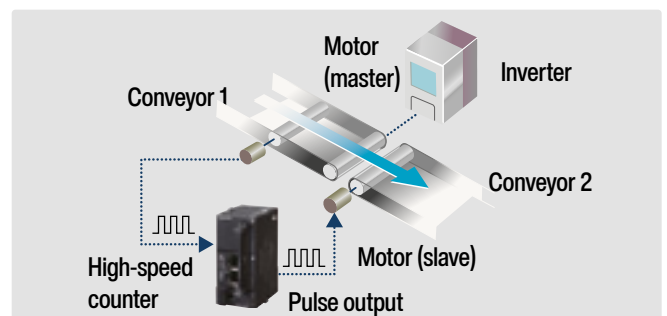
COMPONENTS FOR IIOT

HM Series touch terminals

All terminals are equipped with Ethernet ports and support VNC technology. The web server architecture is based on current HTML5 web technology providing users with advanced control and remote monitoring from any modern browser or from a smartphone, tablet, or computer. The ability to capture, store and share data in higher-level structures makes the HM series the perfect choice for integrating systems across the entire enterprise. The HM series supports Panasonic PLC, SVG graphics, Javascript, OPC UA Server / Client gateway, Modbus TCP (RTU), EtherNet/IP. This makes the HM series a perfect tool for IIoT implementation and Industry 4.0 in a controlled and safety-aware manner.

NEW!

HMs700 series – smart & innovative

> PoE (Power over Ethernet)
> Multiude of installation topologies
> Wi-Fi connection
> Internal temperature sensor

HMx700 series – high-end Multi touch

> Capacitive glass touch panel
> UV resistant, scratch resistant, resistant to chemicals
> Three Ethernet ports
> Display size 5", 7", 10.1", 15.6" and 21.5"

HMe series – economical

> A top product in its class
> Inexpensive
> Cost-efficient
> Reliable
> Industrial grade

PoE (HMs700)

Power over Ethernet

Maximum connectivity thanks to standard CAT5 wiring

> Only one cable needed (power and Ethernet)
> Up to 100m distance from source

MQTT (all models)

Message Queuing Telemetry Transport

> Designed for connections with remote locations
> Suitable for limited network bandwidth

FANLESS (HMs & HMx)

Passive cooling

> Protection against dust, oil and splash water
> Low maintenance
> Noiseless

OPC UA (all models)

Standardized communication protocol

> Platform-independent exchange of machine data

WIDE VARIATION OF MOUNTINGS (HMs700)

VESA, wall, tube, gooseneck, table stand

> High flexibility for installation

WEB SERVER ARCHITECTURE (ALL MODELS)

Based on the current HTML5 web technology Supports VNC technology

> Offers many possibilities of remote monitoring and control

WI-FI (HMs700 EXCEPT HMs705)

Wireless Local Area Network

> Ease of installation and use
> Offer wireless access to employees and customers
> Connection to the wider Internet

FULL IP67 DEGREE OF PROTECTION (HMs700)

The complete encapsulation enables the HMI to be installed under extended environmental conditions.

> Ideal for mounting with a swivel arm directly to the machine.
> Cost-efficient

Cloud solution for remote maintenance

Corvina Cloud is a safe cloud solution based on OpenVPN and SSL and allows remote administration of industrial installations. This way, you have a platform making the administration of your IIoT business easy.

How does Corvina Cloud work?

| ROLES/ PERMISSIONS | APPLICATIONS | SECURE CONNECTIVITY | HMI/PLC GATEWAYS | ENDPOINTS |
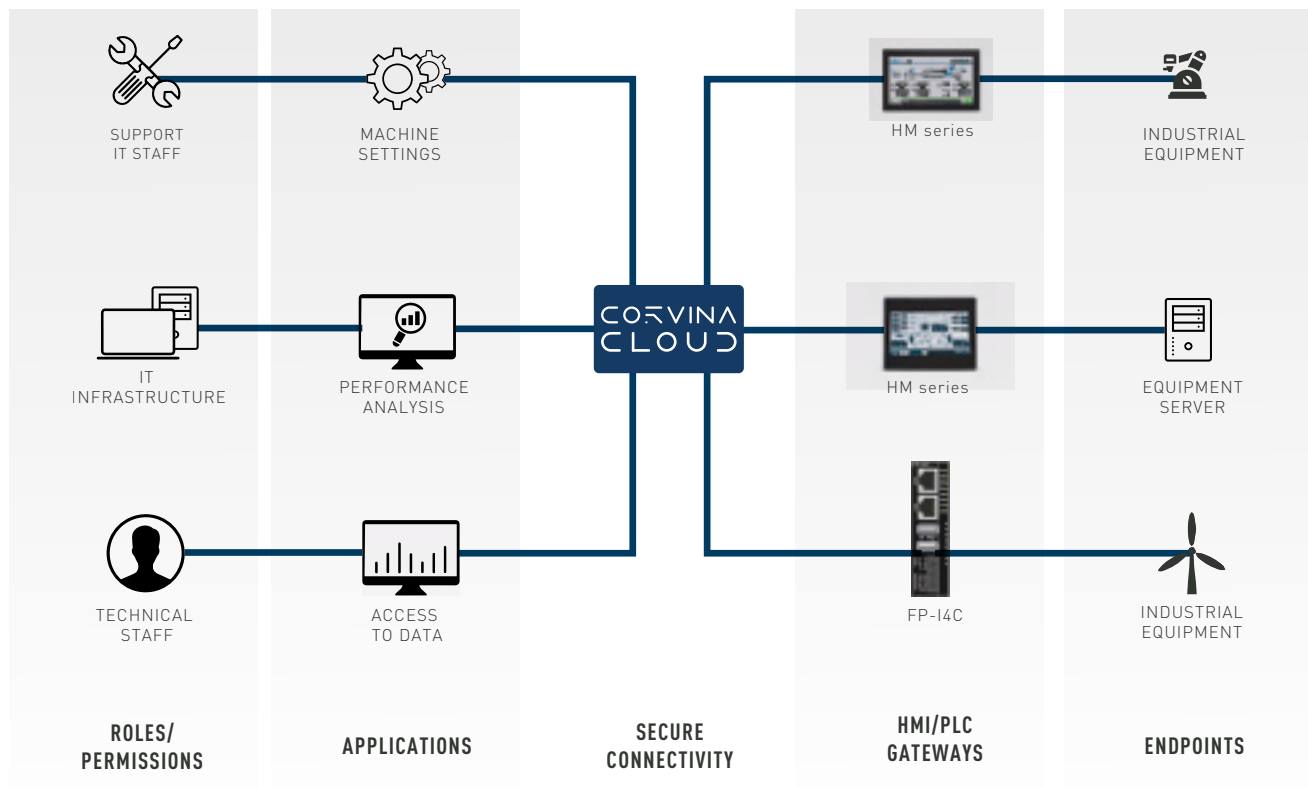
Roles & applications

It is possible to define different roles with different user rights. Roles can be given access rights depending on the data needed and the application.

Secure connectivity

In its core, Corvina Cloud is a high-performance server with the latest open technologies to manage data and control flows, thus acting as a Platform as a Service (PaaS).

Gateways & endpoints

Our touch panels serve as gateways to the local network (HMe series, HMx700 series, HMs700 series, FP-I4C). They connect to a central server. All Panasonic PLCs, IP cameras, and other devices capable of connecting to the Internet can act as endpoints.

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SOLUTIONS FOR IIOT

Sensors for IO-Link

IO-Link

Easy integration into the field level

For a fully automized factory, IO-Link, the first standardized IO technology worldwide is used for the communication with sensors and also actuators. The powerful point-to-point communication is based on the long established 3-wire sensor and actuator connection without additional requirements regarding the cable material. So, IO-Link is no fieldbus but the further development of the existing, tried-and-tested connection technology for sensors and actuators. IO-Link can universally be integrated into all field level standards worldwide. Working hours for installation and maintenance can be optimized due to easy installation and remote surveillance of the sensor parameters. To provide complete IIOT solutions we offer various sensor types with IO-Link technology.

Features

> Universal IO-Link interface
> Built-in self-diagnosis function
> Measurement sensor series HG-C with repeatability up to 10μm
> Pressure sensor with 0.05% resolution
> Fiber-optic amplifier with high transmission power
> Safety light curtain SF4D series: easy setup and maintenance

Accessories

> > IO-Link Master for EtherCAT field buses
> > IO-Link Master for PROFINET field buses
> > IO-Link Master for EtherNet/IP field buses
> > IO-Link Master for Modbus TCP

Product no.	Type	Working range
FX-551L3-P-J	Fiber-optic amplifier	
DP-101ZL3-M-P-C	Pressure sensor	-1 to +1bar
DP-102ZL3-M-P-C	Pressure sensor	-1 to 10bar
HG-C1030L3-P-J	Measurement sensor	30mm ±5mm
HG-C1050L3-P-J	Measurement sensor	50mm ±15mm
HG-C1100L3-P-J	Measurement sensor	100mm ±35mm
HG-C1200L3-P-J	Measurement sensor	200mm ±80mm
HG-C1400L3-P-J	Measurement sensor	400mm ±200mm
GX-330MLK-A-P-Z	Inductive sensor*	30mm
GX-312M-A-P-Z	Inductive sensor*	2mm
SFD-WL3	Communication unit for SF4D	–

*   Further models available

Technical specifications

Switching and communication line (C/Q)	Communication specification	IO-Link specification V1.1
	Baud rate	COM3 (230.4kbit/s)
	Process data	4 bytes
	Transmission cycle time	1ms

Typical field network

Modbus TCP

PROFINET

EtherNet/IP

DeviceNet

To PLC

CC-Link IE Field

To PLC

*CC-Link IE Field and CC-Link are trademarks of Mitsubishi Electric Corporation, and are controlled by the CC-Link Partner Association. DeviceNet and EtherNet/IP are registered trademarks of ODVA (Open DeviceNet Vender Association, Inc.). EtherCAT is a registered trademark of Beckhoff Automation GmbH. Modbus is a registered trademark of Schneider Automation, Inc.

IO-Link Master Unit for CC-Link IE Field SC-LG2-CEF-P

IO-Link master

Green indicator flashes in 1-second intervals during IO-Link communication.

GX-312M-A-P

IO-Link usage example 2

The IO-Link device has an IODD (IO Device Description) file containing identification information such as the device vendor's name and model number. Workers on the manufacturing floor can load and utilize this information.

IO-Link usage example 1

Using the process data, the sensor transmits the detection level (8 bits) to the host device over IO-Link.

ON/OFF signal
+
Sensor information

Operation mode switching information

N.O.

N.C.

Wire disconnection

IO-Link usage example 3

When wire breakage or a short-circuit occurs, the sensor notifies the host device by using the IO-Link event notification function. This enables quick identification of malfunctioning parts to ensure smooth maintenance.

IO-Link usage example 4

The operation mode can be toggled between N.O. and N.C. using IO-Link communication.

SOLUTIONS FOR IIOT

Products for IIoT based factory automation

Smart Factory

MQTT

Servo Drives

Safety Light Curtain

Laser Marker

Ionizer

Ultra-Slim
Photoelectric
Sensor

Temperature
Controller

Human
Machine
Interface

AGV

AGV

Obstacle
Detection
Sensor

Ultra-Compact
PLC

Laser
Displacement
Sensor
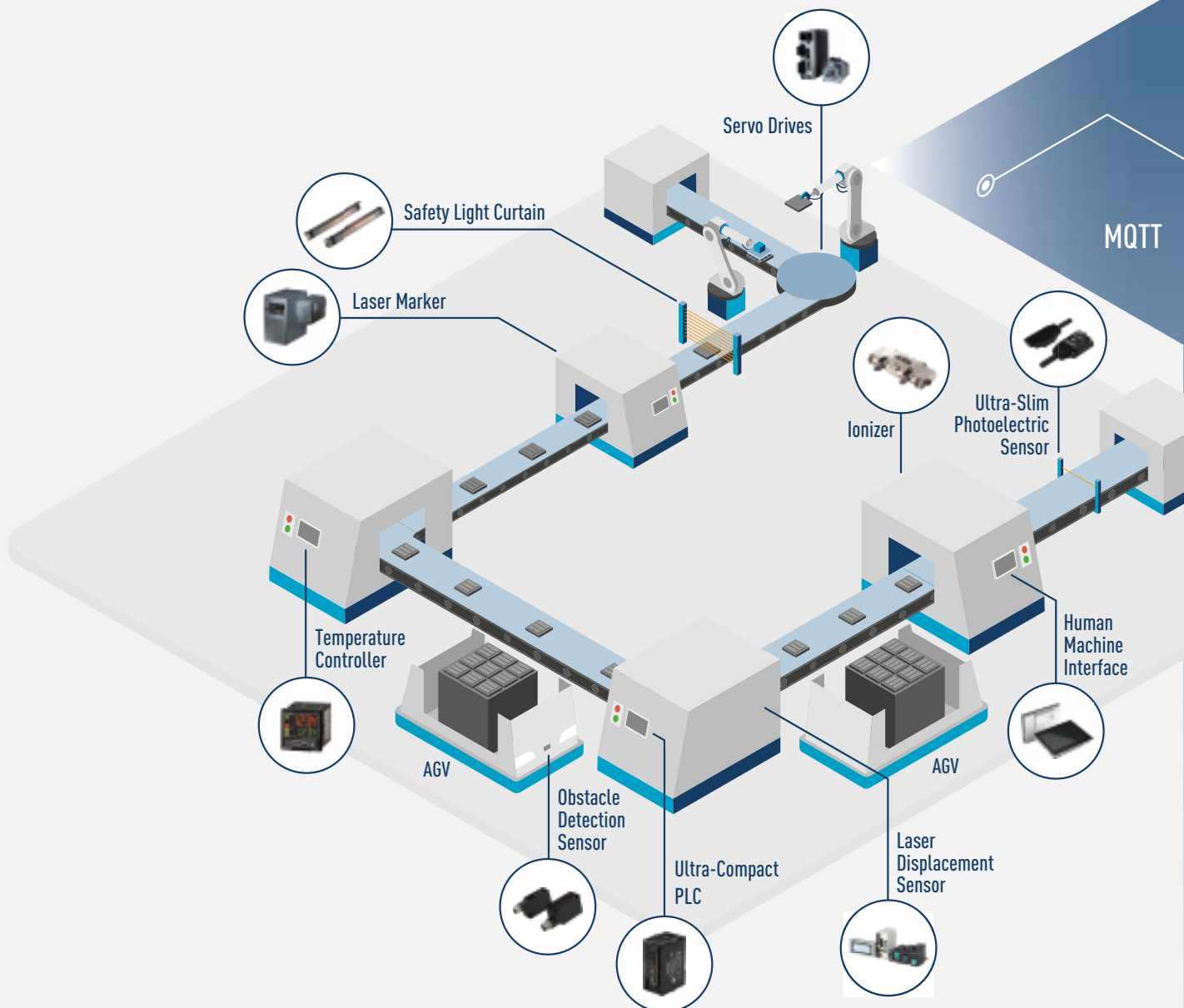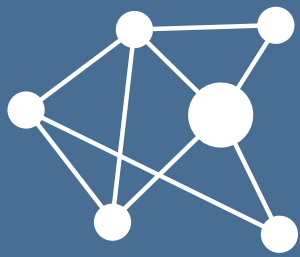
Connectivity

Data Analysis

MQTT

Predicitive
Maintenance

IIOT-Gateway

Update

Cloud

OPC-UA
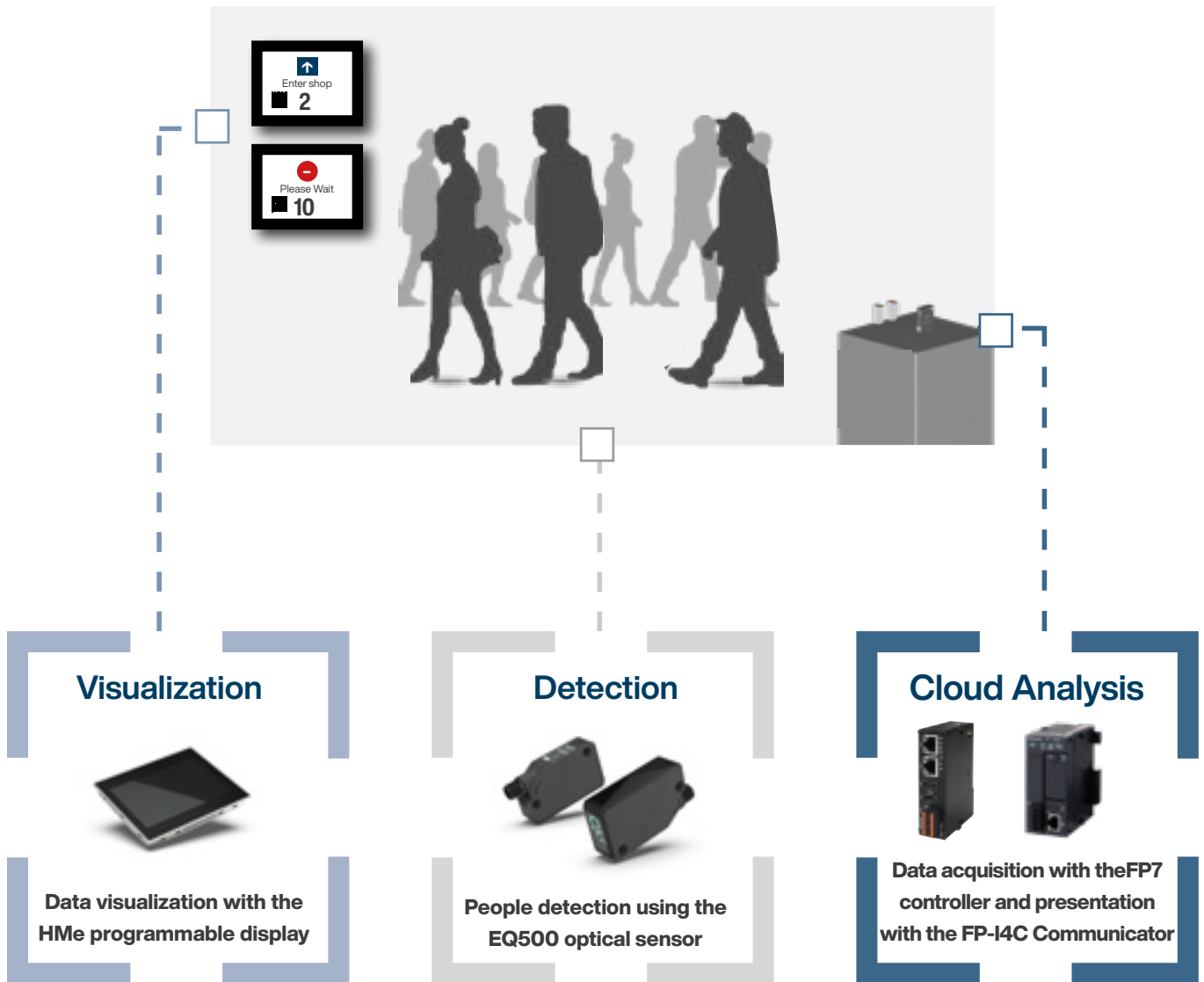
Digital
Devices

Database

Factory

SOLUTIONS FOR IIOT

Reliable components for people counting

In addition to the sensors for people counting that have been used successfully for many years, Panasonic also offers more advanced components: With the FP7 compact controller or the FP-I4C IIot Communicator, counting can not only be analyzed, it is also possible to integrate the system into existing IT networks. For visualization or parameterization on site, a freely programmable display (HMI) can be interfaced to present important information on the spot.

Visualization

Data visualization with the HMe programmable display

Detection

People detection using the EQ500 optical sensor

Cloud Analysis

Data acquisition with theFP7 controller and presentation with the FP-I4C Communicator

People detection using the EQ500 Series optical sensors

> Reliable detection of persons using trigonometric photoelectric sensors irrespective of the color or material of their clothes

> Proven application solution for more than 20 years

> Sensing distance 1m, 2m or 2.5m (depending on type)

> Sturdy housing with IP67 protection

Data visualization with the HMe programmable display

> Display size from 4.3 to 10.1 inch

> Touch terminal

> Serial interface

> Ethernet interface

> USB interface

> 2/4GB flash memory

> Password protection

> Up to IP67

> Multi-language function simplifies switching between different languages

> Logging data can be stored on SD cards (depending on type)

> SD logging data can also be displayed graphically

Data analysis with the FP-I4C Communicator

> Manufacturer-independent communication: Ethernet, OPC UA, MQTT, SQL

> Secure communication: HTTPS, SSH, FTPS, VPN, SSL

> Customizing with a wide range of programming languages: Python, node, bash, C++ , ...

Data analysis with the FP7 controller

> Network and Industrial Ethernet on board

> Parameterization of up to 128 interfaces

> Web visualization on board

> Ideal for logging and transferring data

SOLUTIONS FOR IIOT

Condition monitoring

In order to be able to monitor the condition of machines, a wide variety of data first have to be collected, such as energy consumption, temperature, moisture, media consumption, vibrations, etc. These data are transmitted to a distributed control system and analyzed there. This allows maintenance intervals to be optimized and machine standstills to be prevented by intervention in good time.

Remote programming

Panasonic offers various possibilities for accessing even programmable controllers that do not have an Ethernet interface, and therefore do not permit remote programming.

> VPN via FP-I4C
> Corvina Cloud

Telecontrol

In established telecontrolling, Panasonic offers a variety of user libraries with a vast array of example projects. The data are collected from the telecontrol outstation and transmitted via Ethernet or mobile phone network to a distributed control system. Transfer via modem is also possible.

Integration of IP cameras

Even IP cameras can be easily integrated into the Panasonic system, and the images can be visualized on operator terminals or web sites. Depending on the camera type, it is possible to control the camera. Camera images can be transferred to a central server for evaluation or archiving.

Visualization

There are basically two possibilities for visualization at Panasonic: Display on the touch terminal directly on site or display on web sites. Both variants offer the possibility of not only displaying the data, but also of setting set points or entering control instructions.

> VNC
> HTML5

Alarms

Alarm messages can be visualized both in the distributed control system and on the local operation terminal. Immediate information of the service personnel by e-mail or SMS is also possible.

Data logging

The recording and evaluation of data is the precondition for identifying and then remedying weaknesses. Many of the Panasonic devices are able to record data and thus to also provide historical data for evaluation.

PANASONIC ACADEMY

## What does the Panasonic Industry Europe Academy offer?

Customised training for real added value
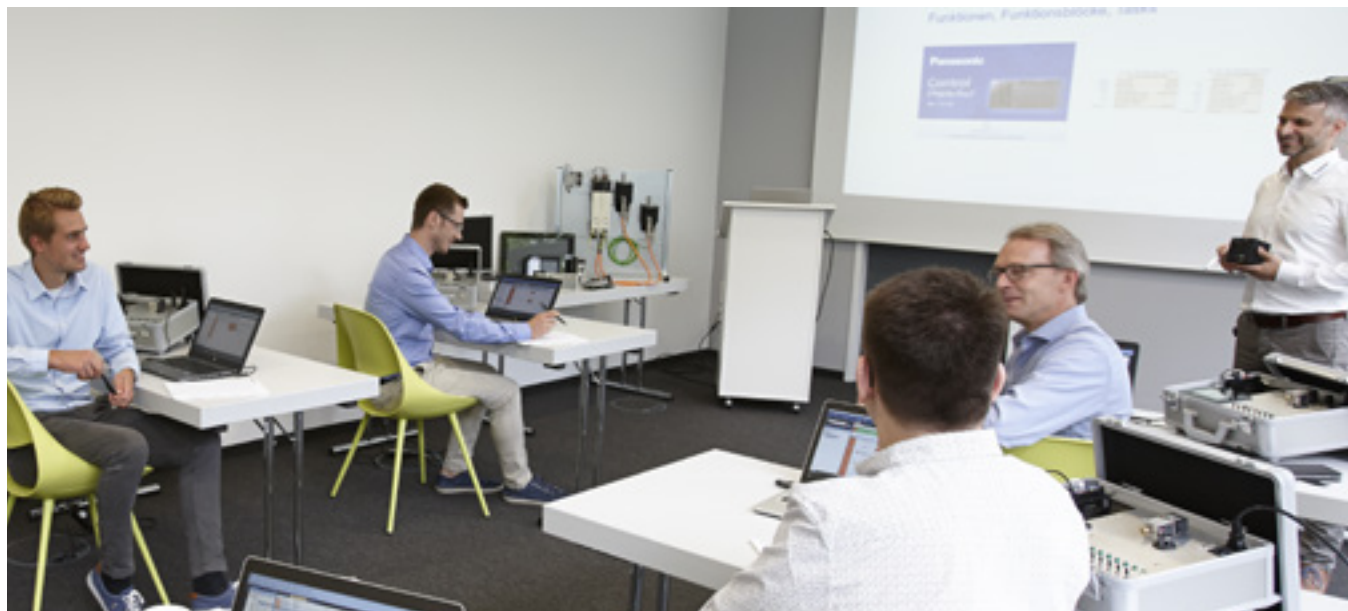
Practical training for maximum efficiency

The Panasonic Industry Europe Academy offers a diverse and compact training programme. Our experienced trainers provide courses in modern factory automation with a focus on sensors, PLCs, drive technology, operating terminals, cloud technology, and measurement and safety technology. By means of theoretical and practical exercises, we show our customers how to quickly and efficiently use Panasonic automation components. Our customers also have the opportunity to discuss best practices with other training participants. The aim is to share knowledge with our customers, thereby improving efficiency in their everyday work.

Further information: https://industry.panasonic.eu/service/seminars-trainings/panasonic-academy
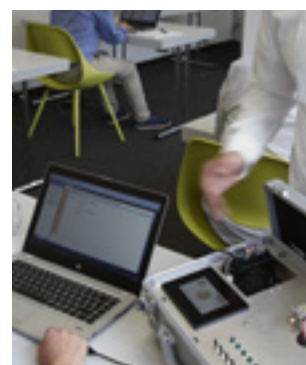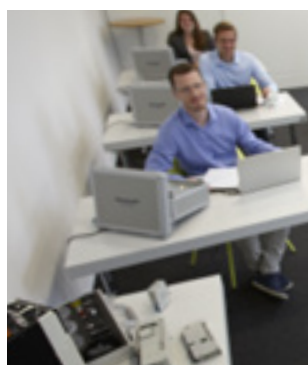
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