Future Is Now.

IO-Link

Sensors and Systems
with IO-Link

Data exchange from sensor
to PLC and beyond—standardized
and transparent.



Your automation, our passion.

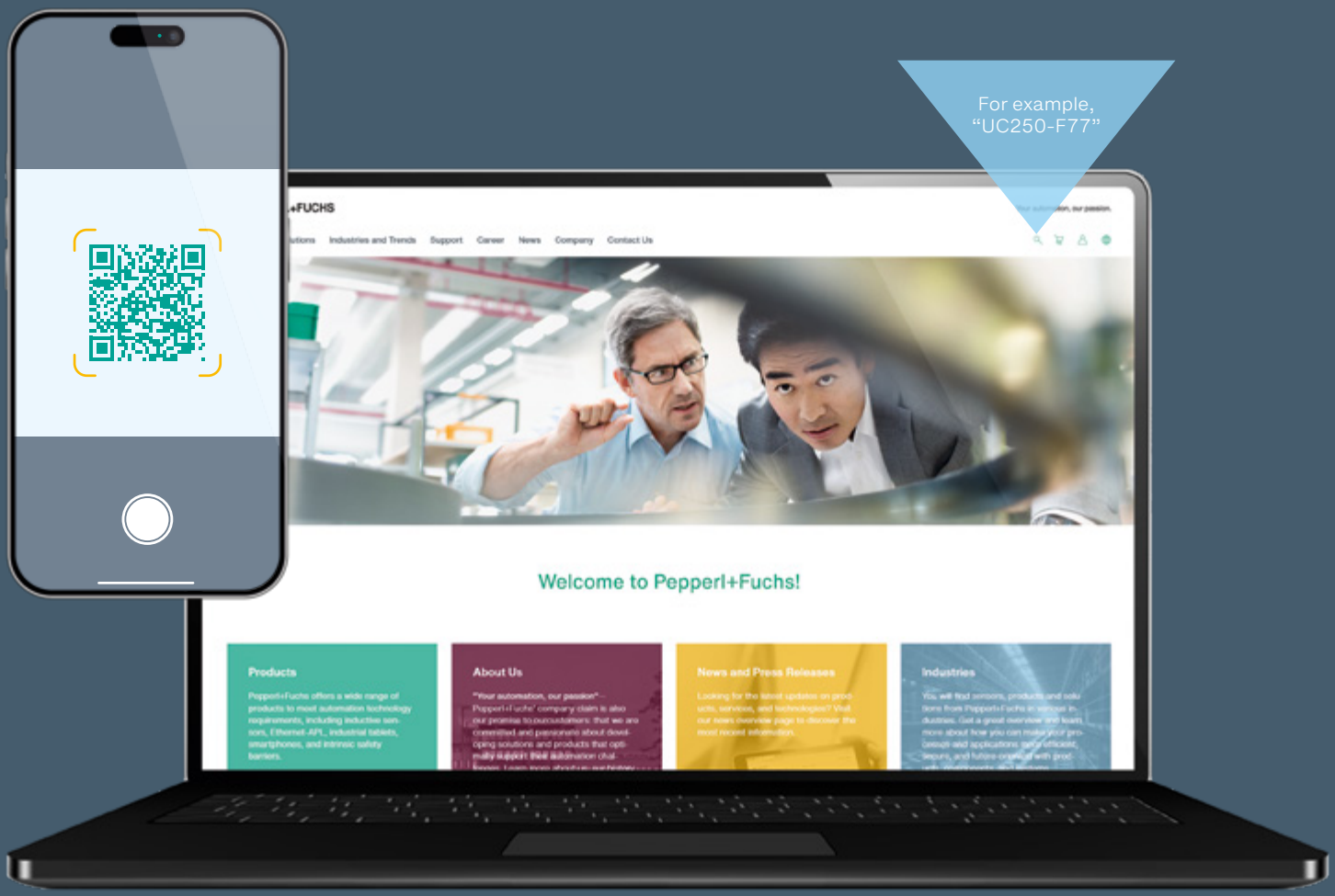
PEPPERL+FUCHS

Find Your Device in Just a Few Clicks.

Go online. Specify your requirements. Select your device. You can find the right solution for your application in just a few clicks. If you have any questions, our experts are available to take your call.

Online Search on the Pepperl+Fuchs Website

Simply scan the respective QR code or enter the order designation in the search field on the Pepperl+Fuchs website and get to your product selection immediately. Order designations can be found in this brochure in the technical data summaries. Or you can navigate through our range of product families and groups. Product selectors help you select the optimal IO-Link device.



For more information, visit
pepperl-fuchs.com/tf-io-devices

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Technology

The Standard for Future-Proof Technology

IO-Link enables comprehensive diagnostics down to the sensor/actuator level, reduces costs, and provides a secure investment. Pepperl+Fuchs' IO-Link portfolio offers a complete solution from a single source for flexible solutions.

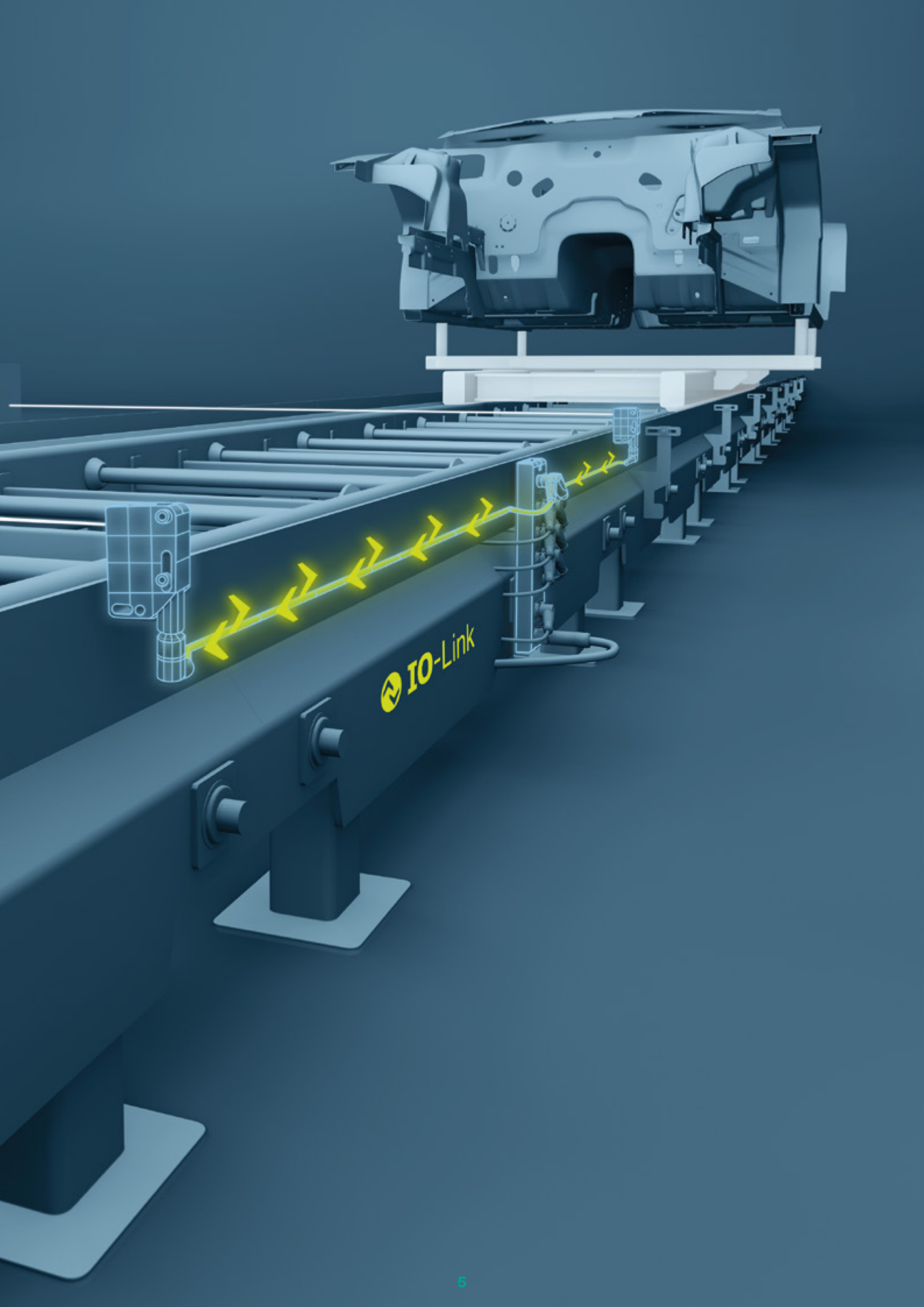
Standardization for Industry 4.0

IO-Link is an internationally standardized, cross-vendor IO technology that enables bidirectional communication from the control system to the sensor/actuator level. The fieldbus-independent open standard can be integrated into any system landscape using standard unshielded cables and point-to-point connectivity. Bidirectional communication enables comprehensive diagnostics and data transfer is interference-free.

Complete Solution from a Single Source

Pepperl+Fuchs' IO-Link portfolio allows users to choose from a wide range of sensor technologies, including photoelectric sensors, ultrasonic sensors, inductive proximity sensors, positioning systems, and RFID. In addition to IO-Link sensors, I/O hubs with IO-Link offer another economical solution for connecting standard digital sensors. The complete solution is rounded off by IO-Link masters, connectivity, and software.

For more information, visit
pepperl-fuchs.com/tf-io-link-tech


IO-Link

Portfolio

Complete Solution from a Single Source

A comprehensive portfolio of IO-Link devices, IO-Link infrastructure, software, and connectivity—this is the complete solution of intelligent IO-Link systems from Pepperl+Fuchs.

Flexible Applications

Pepperl+Fuchs' IO-Link portfolio offers flexible solutions for a range of applications—photoelectric sensors, ultrasonic sensors, rotary encoders, inductive proximity sensors, positioning systems, vibration sensors, and RFID. In addition to sensors, IO-Link masters, connectivity, I/O hubs, and software are also available.

IO-Link Devices: Broad Portfolio for Any Requirement

Every application poses unique challenges. Pepperl+Fuchs' broad product portfolio includes a range of sensing technologies and housing styles that can be seamlessly integrated into all applications.

IO-Link Infrastructure: Optimized for Every Application

Take full advantage of IO-Link. Pepperl+Fuchs offers a range of IO-Link infrastructure: an IO-Link USB master for offline configuration, various IO-Link masters for connection to higher-level fieldbuses as well as IO-Link masters with OPC UA and MQTT for applications even without classic control. The portfolio is completed by matching software and perfectly coordinated connectivity.

For an overview of the IO-Link portfolio, visit
pepperl-fuchs.com/tf-io-portfolio

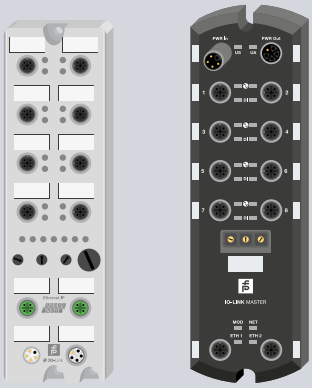


PLC control

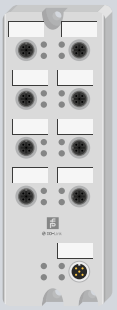
IO-Link Infrastructure



IO-Link USB master



IO-Link master



I/O hub
with IO-Link

IO-Link Devices



Inductive
proximity sensors



Inductive
positioning systems



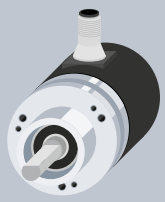
Photoelectric
sensors



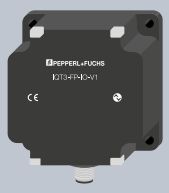
Ultrasonic
sensors



Vibration
sensors

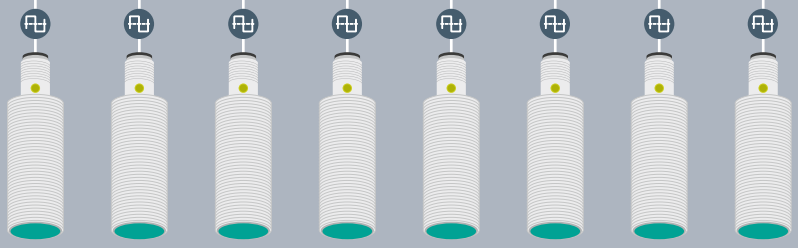


Rotary
encoders



Identification
systems

Standard Devices



Digital sensors

Portfolio

Software Tools for Every Application

Pepperl+Fuchs offers a comprehensive set of tools for sensor configuration and diagnostics. Convenient, standardized user interfaces make sensors even easier to use.

IODD: Standardized Device Description for Easy Commissioning

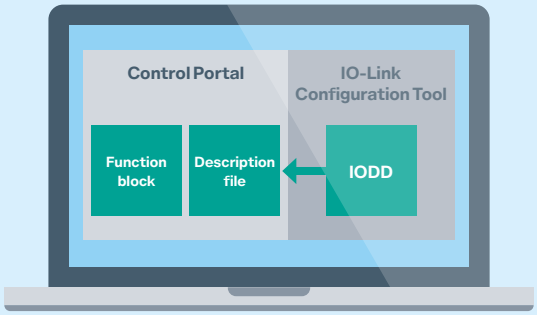
Every IO-Link device has an IO device description (IODD) file that contains a range of information for integration into different systems. This information includes communication characteristics, available parameters and functions, and the user interface, among other things.

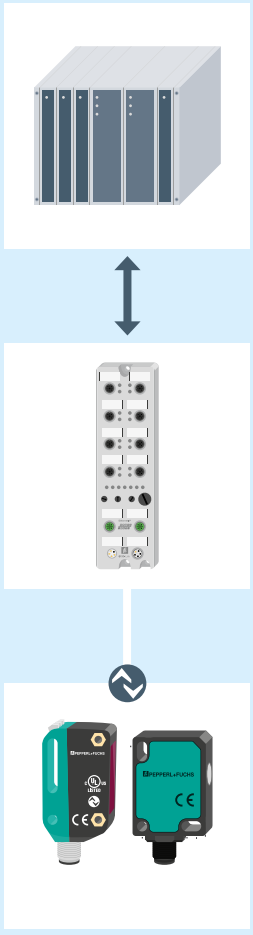
Because the IODD structure has been standardized for all devices, it can always be read the same way—regardless of the IO-Link master being used, the manufacturer, or the automation system.

The Right Software for Every Need

In addition to the IODD, several software tools are available for configuring IO-Link devices. From device DTMs for configuring a device via PACTware to function blocks for user programs in the control system, Pepperl+Fuchs offers software for every situation.

For more information, visit
pepperl-fuchs.com/tf-io-link



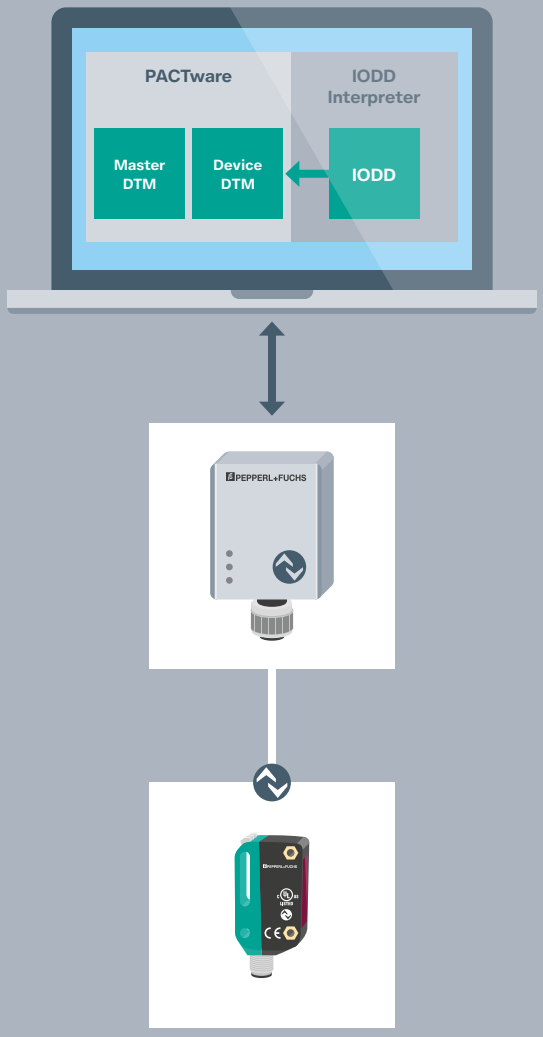


Offline Configuration

With offline configuration, IO-Link devices are configured before they are mounted. Pepperl+Fuchs' IO-Link USB master can be used for this.

In addition to the master, a program such as PACTware, USB Master DTM, or IODD interpreter is required to display an IO-Link device's IODD.

Device DTMs simplify operation of more complex devices with a graphical interface.



Online Configuration

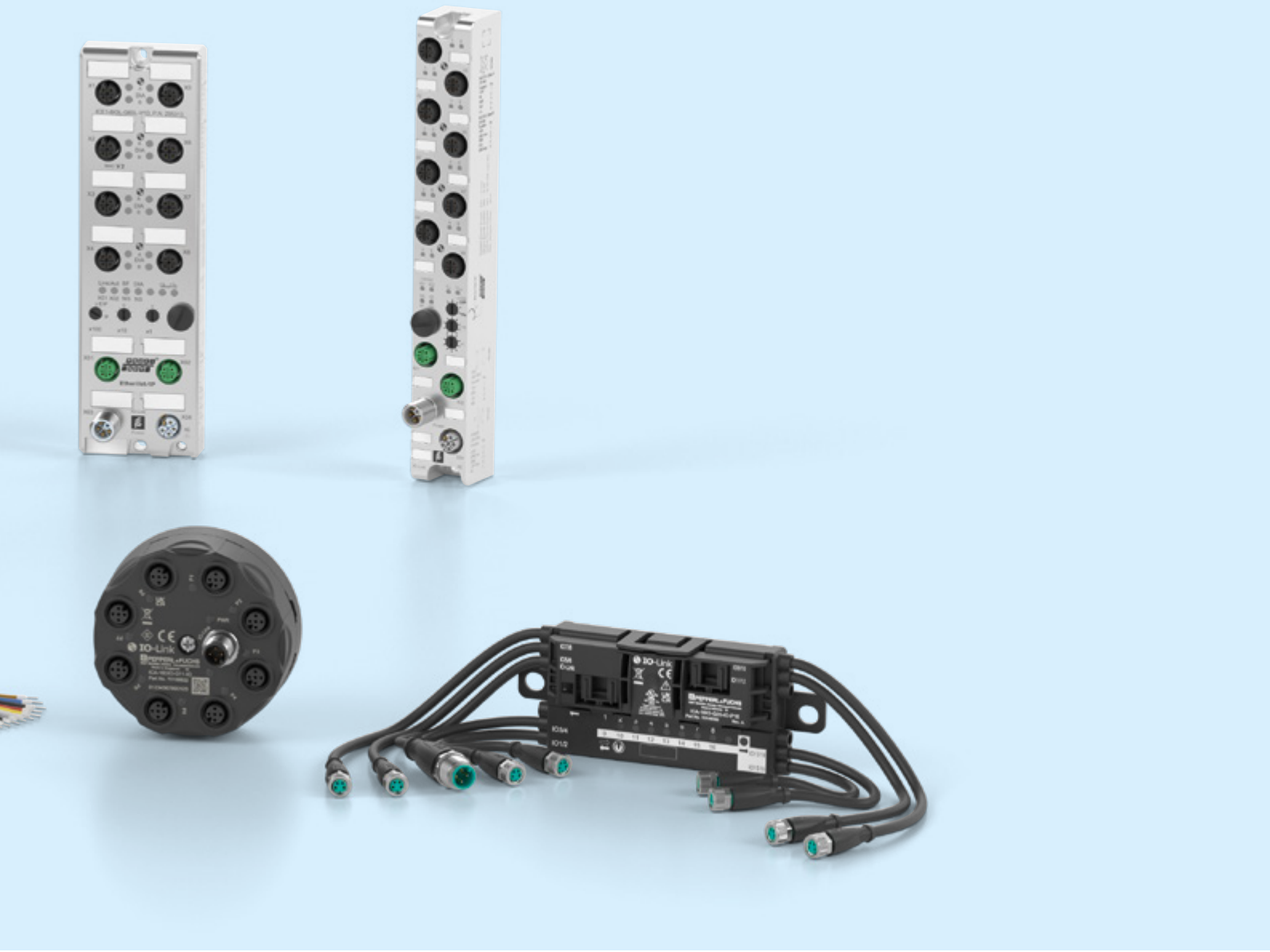
To commission machines and plants, the IO-Link master and devices must be integrated into the appropriate automation system, which requires different software.

Then, the IO-Link configuration tool can be used to configure devices. During operation, IO-Link device parameters can be set, and diagnostic data can be monitored. The integration of IO-Link data into an application program takes place via function blocks.

The Foundation for Efficient IO-Link Communication



At Pepperl+Fuchs, you will find a comprehensive IO-Link infrastructure for a wide variety of applications. The portfolio ranges from IO-Link USB masters for offline configuration to IO-Link masters for integration into common fieldbuses, as well as variants with OPC UA and MQTT for cloud-based solutions—even without a traditional controller. Suitable software and optimally coordinated connectivity complete the offering.



IO-Link Masters for Cloud- and Controller-Based Systems

IO-Link masters enable efficient communication between the control and sensor/actuator levels and act as a gateway between Ethernet and IO-Link. For the quick connection and configuration of IO-Link sensors, Pepperl+Fuchs offers an IO-Link USB master. The ICE1* series allows for the connection of up to eight IO-Link devices and ensures end-to-end diagnostics and parameterization from the control level down to the sensor level. The ICE2 (EtherNet/IP) and ICE3 (PROFINET) series with OPC UA interfaces support platform-independent data exchange in cloud-based systems.

IO Hubs for Integrating Standard Sensors into IO-Link Networks

IO-Link hubs enable the easy connection of multiple standard sensors simultaneously. Using an integrated IO-Link interface, they can be connected to the IO-Link master, so that only a single port of the IO-Link master is occupied.

IO-Link Master ICE2/3

From the Sensor to the Cloud

OPC UA

EtherNet/IP

PROFINET

IP20
IP67



Flexibility for the Future

Optimized for IoT, the ICE2* and ICE3* modules offer everything needed for flexible cloud applications. Thanks to MultiLink, multiple sources can access the device in parallel and make the right data available exactly where it is needed. Whether with a traditional controller, in operation with an industrial PC, or as a pure cloud application. Pepperl+Fuchs IO-Link masters offer maximum flexibility and planning reliability.

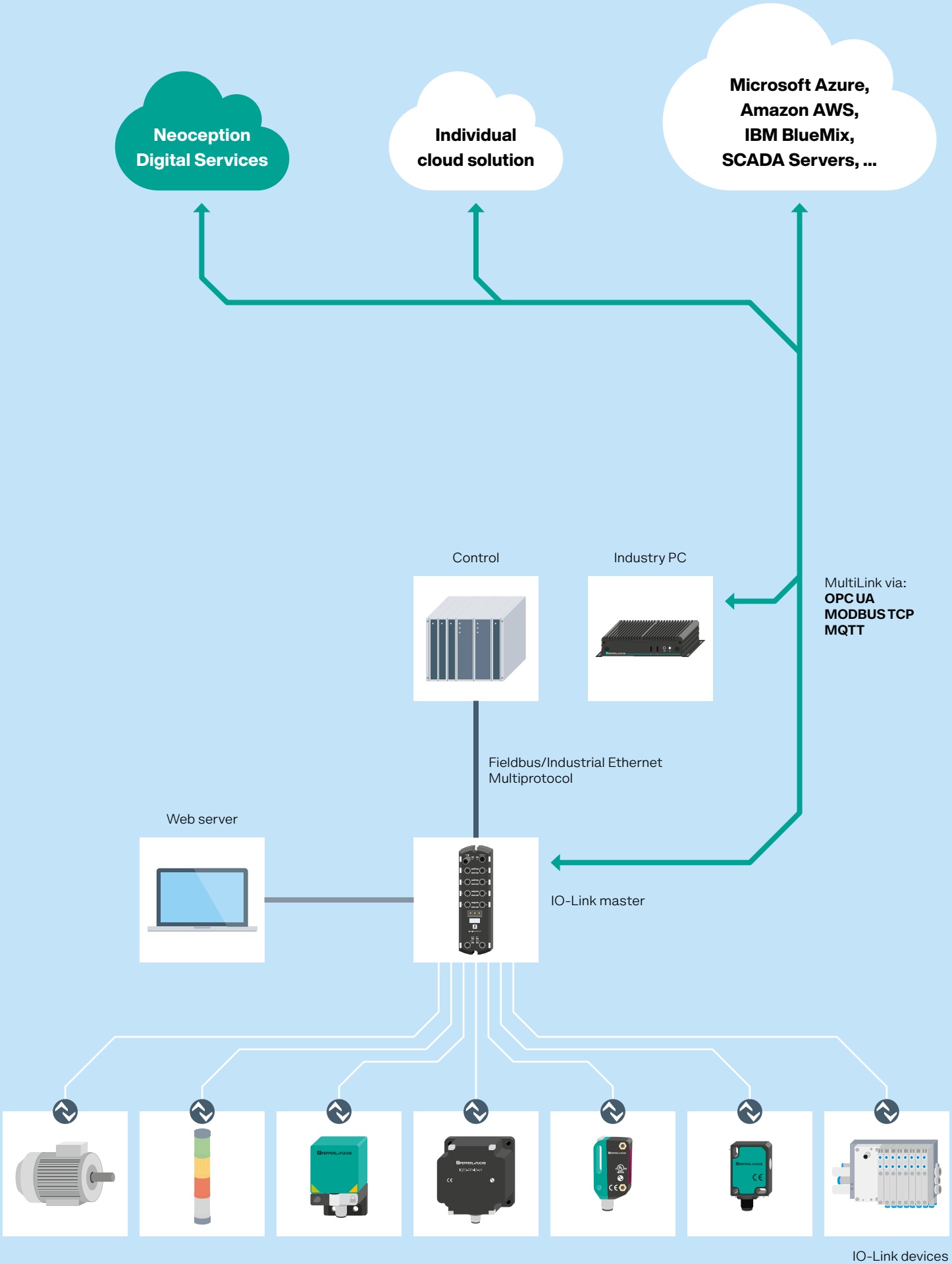
Highlights

- OPC UA and MQTT interfaces for future-oriented cloud solutions in the spirit of Industry 4.0
- MultiLink—parallel control and cloud communication
- Easy configuration via web browser thanks to integrated web server and IODD interpreter
- PortVision® DX software offers network configuration, device management, and cloning, as well as backup of settings in a single application
- IO-Link Class A and Class B available

Extract of Technical Data	ICE2-8IOL-G65L-V1D ICE3-8IOL-G65L-V1D	ICE2-8IOL-K45S-RJ45 ICE3-8IOL-K45S-RJ45	ICE2-8IOL-K45P-RJ45 ICE3-8IOL-K45P-RJ45
Inputs/Outputs	8-port IO-Link master	8-port IO-Link master	8-port IO-Link master
Housing	Polyamide (encapsulated)	Polyamide	Polyamide
Rated current	16 A	3.7 A	3.7 A
Operating temperature	–25 °C ... +60 °C	–40 °C ... +70 °C	–40 °C ... +70 °C
Protection class	IP67	IP20	IP20
Dimensions	212 × 65 × 30 mm	118 × 45 × 114 mm	118 × 45 × 114 mm

For more information, visit
pepperl-fuchs.com/tf-ice

Optimized for IoT Applications



IO-Link Master ICE1*

Efficient, Innovative, and Durable

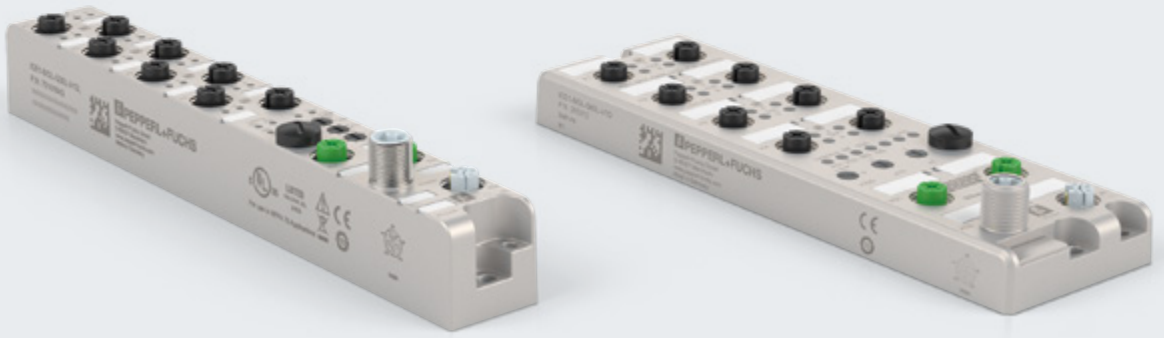
PROFINET

EtherNet/IP

EtherCAT

CC-Link

Modbus



Maximum Process Reliability and Standardization

Designed for classic control-based applications, the ICE1* modules offer maximum process reliability. The integrated web server can be activated or deactivated as needed. This ensures that access to the module is possible exclusively via the controller—external access is prevented.

Through their multiprotocol capability, the IO-Link masters offer maximum efficiency in the standardization of machines and systems. The innovative, high-performance connection technology optimizes installation.

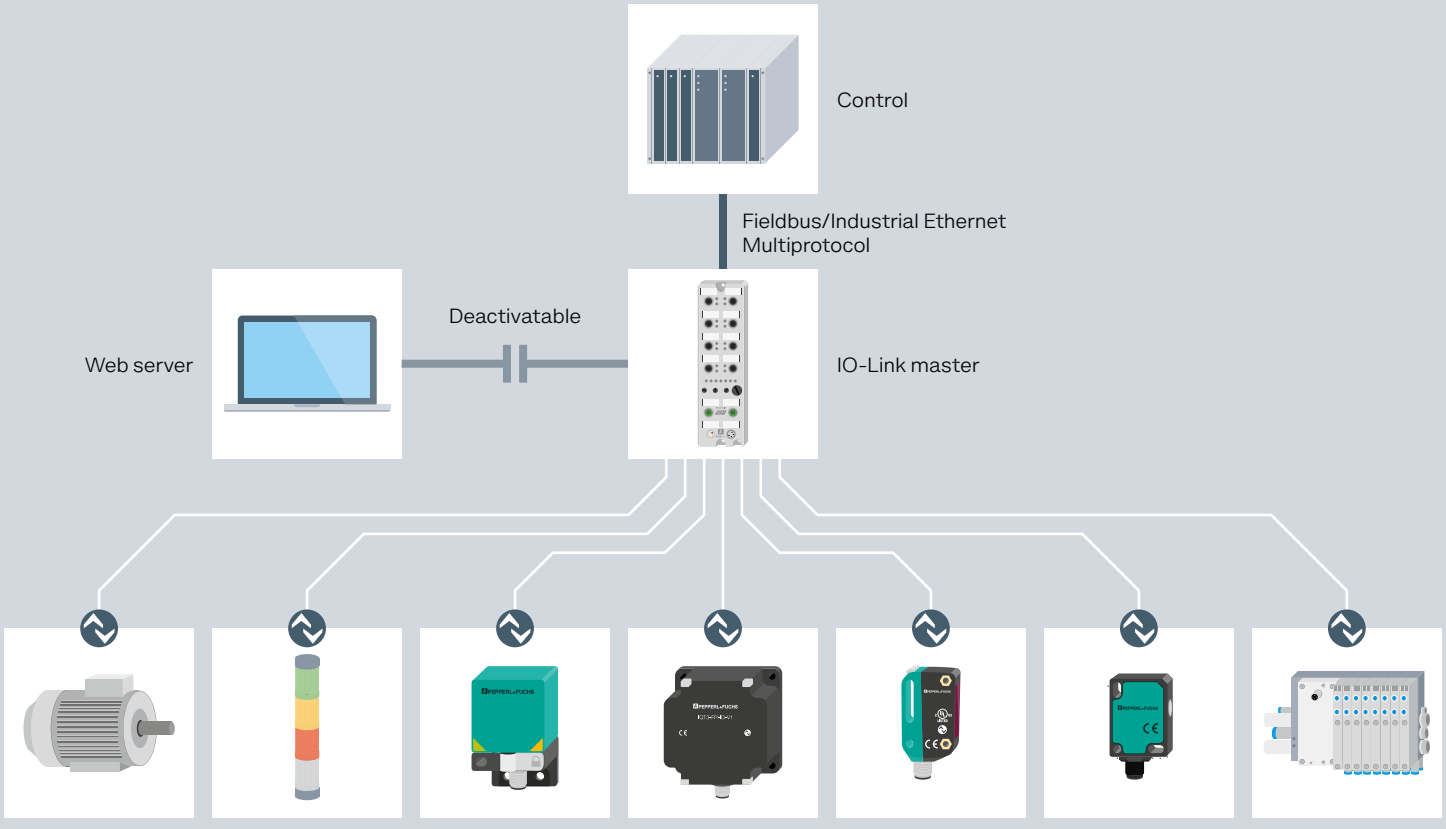
Highlights

- Machine standardization due to multiprotocol support: all common Ethernet communication protocols in a single module
- Innovative M12 power connector for reduced installation effort, with an increased current capacity of up to 2 × 16 A (for sensor and actuator power supply)
- Integrated IO-Link master function for end-to-end diagnostics and parameterization from the controller down to the sensor/actuator level

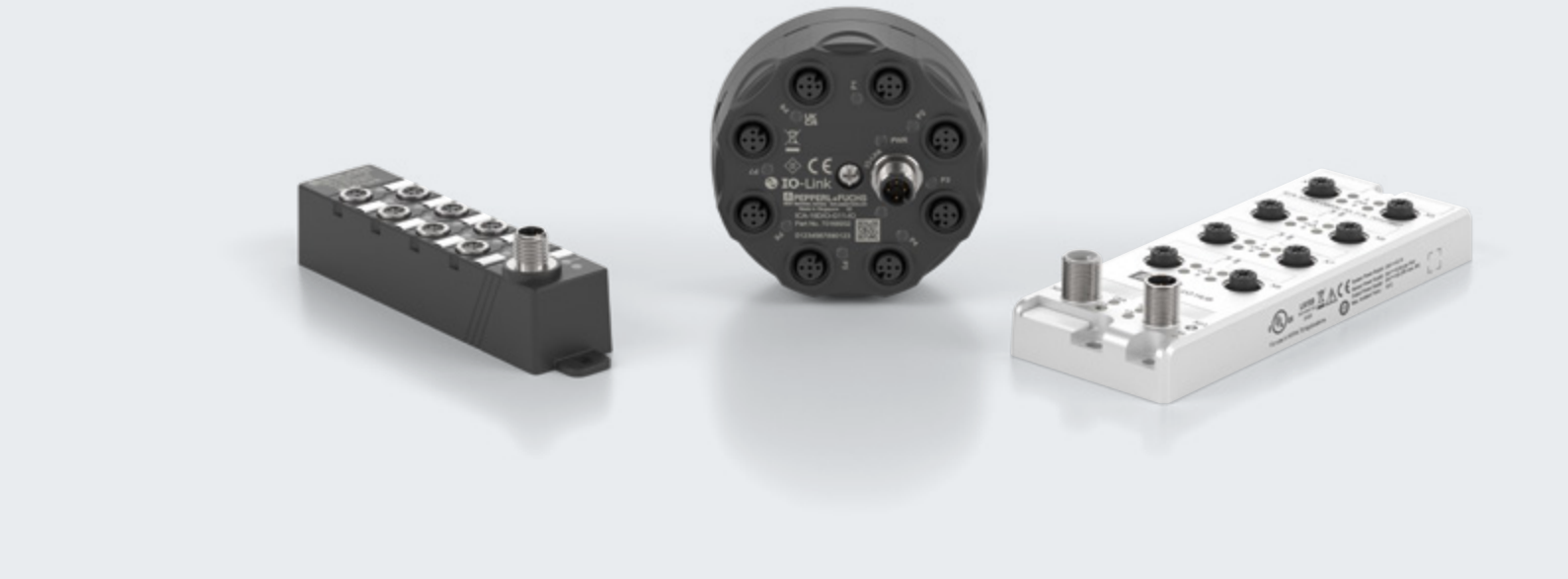
For more information, visit
pepperl-fuchs.com/tf-ice1

Extract of Technical Data	ICE1-8IOL-G60L-V1D	ICE1-8IOL-G30L-V1D	ICE11-8IOL-G60L-V1D
Inputs/Outputs	8-Port IO-Link master		
Housing	Die-cast zinc—nickel-plated surface		
Rated current	2× 16 A		
Operating temperature	–20 °C ... +70 °C	–20 °C ... +70 °C	–40 °C ... +70 °C
Degree of protection	IP69	IP69	IP65/IP67/IP69K
Dimensions	200 × 59.6 × 30.7 mm	225 × 30 × 43 mm	200 × 59.6 × 30.7 mm

Optimized for PLC-Based Applications



Flexible Connectivity



Bringing Discrete and Digital Together—Exceptionally Simple and Cost-Effective

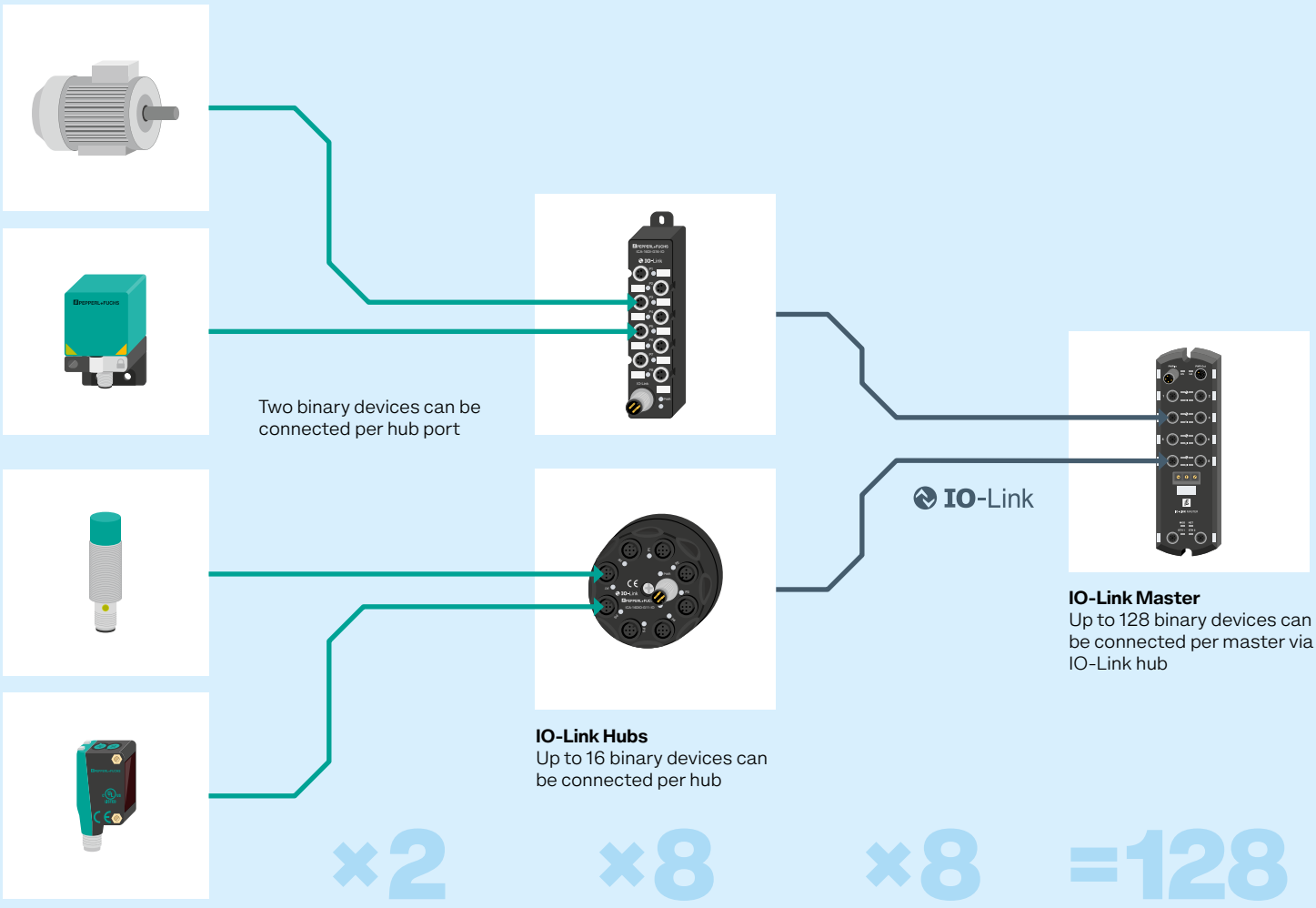
The Class A IO-Link hubs in the G11 and G16 series each feature eight ports and are available in 16DI or 16DIO versions, depending on application requirements. Up to 16 sensors/actuators can be easily connected via M12 (G11) or M8 connectors (G16). In total, up to 128 digital I/Os can be connected to higher-level control systems via a single IO-Link master. In addition to devices with fully encapsulated metal housings (G60 series), the devices in the G11 and G16 series represent a particularly cost-effective solution for standard applications.

Highlights

- Exceptionally robust due to a wide temperature range of –40 °C to +70 °C and a high degree of protection up to IP68/IP69K
- Cost-effective G11 and G16 series for standard applications increase the cost-effectiveness of your application
- For demanding industrial environments: G60 series in a fully encapsulated stainless steel housing

For more information, visit
pepperl-fuchs.com/tf-io-g11g16g60

Extract of Technical Data	ICA-16DI*-G11-IO	ICA-16DI*-G16-IO	ICA-16DI*-G60*-IO
Inputs/outputs	16 digital inputs 16 digital inputs/outputs, freely configurable		
IO-Link	11.4		1.1
I/O connections	M12	M8	M12
Housing	PBT PC	PBT	Die-cast zinc
Operating temperature	–25 ... +70 °C	–25 ... +70 °C	–20 ... +70 °C
Degree of protection	IP68/IP69K	IP67/IP68/IP69K	IP65/IP67/IP69K
Dimensions	ø 85 mm, height 46 mm	143 × 30 × 29.35 mm (L × W × H)	21 × 59.6 × 200 mm (L × W × H)



Specialized Devices and Custom Solutions

Maximum Flexibility in a Compact Footprint

The exceptionally compact I/O hubs of the CB10 series offer an optimal solution for integration into the smallest installation spaces. The modules can be connected directly to an IO-Link master, thereby making control panel boxes IO-Link-compatible as well. Innovative hot-melt technology enables space-saving designs as well as robust, shock-resistant housings for high quality and durability in industrial applications.

Highlights

- Universally applicable: one variant for mechanical push buttons, 3-wire sensors, and signal lights
- Different wire colors and crimped wire ends for error-free and quick installation
- Space-saving, rugged, and shock-resistant housing due to innovative hot-melt manufacturing technology

For more information, visit
pepperl-fuchs.com/tf-io-cb10

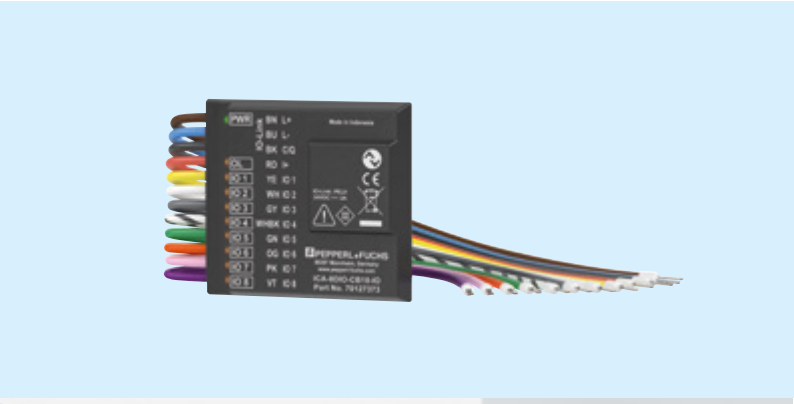
Up to 16 Digital I/Os in a Compact Design

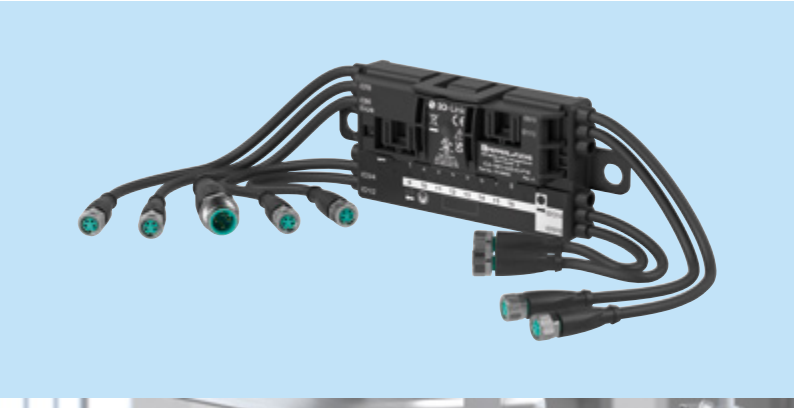
The housing of the G20 motor control modules is designed for particularly space-saving integration into the mounting rail. All modules feature a flat cable connection that enables tool-free installation using piercing technology. Up to 16 freely configurable digital inputs/outputs offer maximum flexibility. Integrated sensor and actuator cables reduce installation effort and enable efficient, cost-effective conveyor systems without requiring specialized prior knowledge.

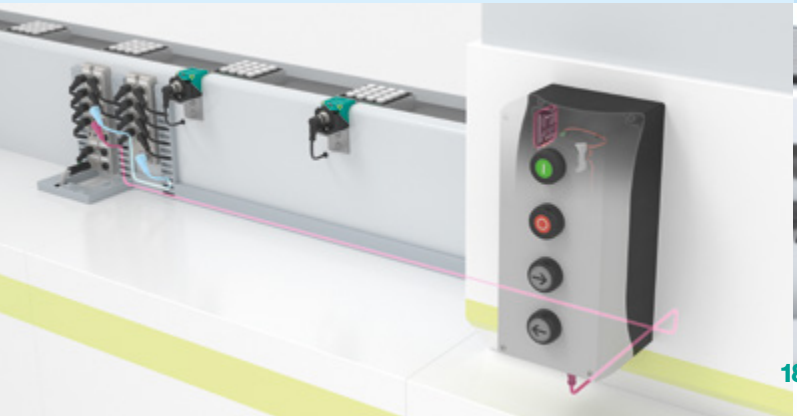
Highlights

- Up to 16 freely configurable digital I/Os
- Compact housing for direct mounting in mounting rails or cable ducts

For more information, visit
pepperl-fuchs.com/tf-io-g20hub









Easy Connection of Analog Sensors and Actuators

IO-Link analog converters enable the simple connection of sensors and actuators with analog interfaces to an IO-Link master. Installation is performed via M12 connectors between the master and the field device. Due to their compact design, the devices can also be used in confined installation spaces. The ICA-AI-* variants for sensors and ICA-AO-* variants for actuators support the flexible processing of current and voltage signals.

Highlights

- Easy connection of sensors and actuators with analog interfaces to IO-Link
- Compact housing for installation in the tightest spaces
- High application flexibility: configurable for current and voltage signals

Extract of Technical Data	ICA-8DIO-CB10-IO	ICA-16IO-G20-IO-P16	ICA-A*-I/U-IO-V1 Analog converters
Inputs/Outputs	8 freely configurable digital inputs/outputs	16 freely configurable digital inputs/outputs	1 analog input 1 analog output
IO-Link	1.1	1.1.3	1.1
I/O connections	12× crimped wires (3× IO-Link/8× DIO/1× DIO)	IO-Link: M12 IO: M8	M12
Analog signal (configurable)	–	–	0 ... 20 mA/4 ... 20 mA 0 ... 10 V/–10 ... 10 V
Dimensions (L × W × H)	39.5 × 36 × 10 mm	54 × 131.5 × 27.5 mm	77.2 × 15 × 32.3 mm

For more information, visit
pepperl-fuchs.com/tf-io-ica





IO-Link USB Master

Offline Configuration—Easy and Universal



Flexible Configuration for All IO-Link Devices

Get an IO-Link sensor up and running quickly and easily—and do it all from your desk. The IO-Link USB master acts as a link between a standard office infrastructure with Windows® PCs and an industrial IO-Link device.

The computer's USB port is used for both communication and power, allowing sensors to operate immediately without complex wiring. For devices with higher current consumption, an additional power supply is included with delivery.

Highlights

- Offline operation for a variety of applications via standardized interfaces and tools
- Plug-and-play with power supply from the USB port
- Standard M12 connector for quick connectivity with conventional cables

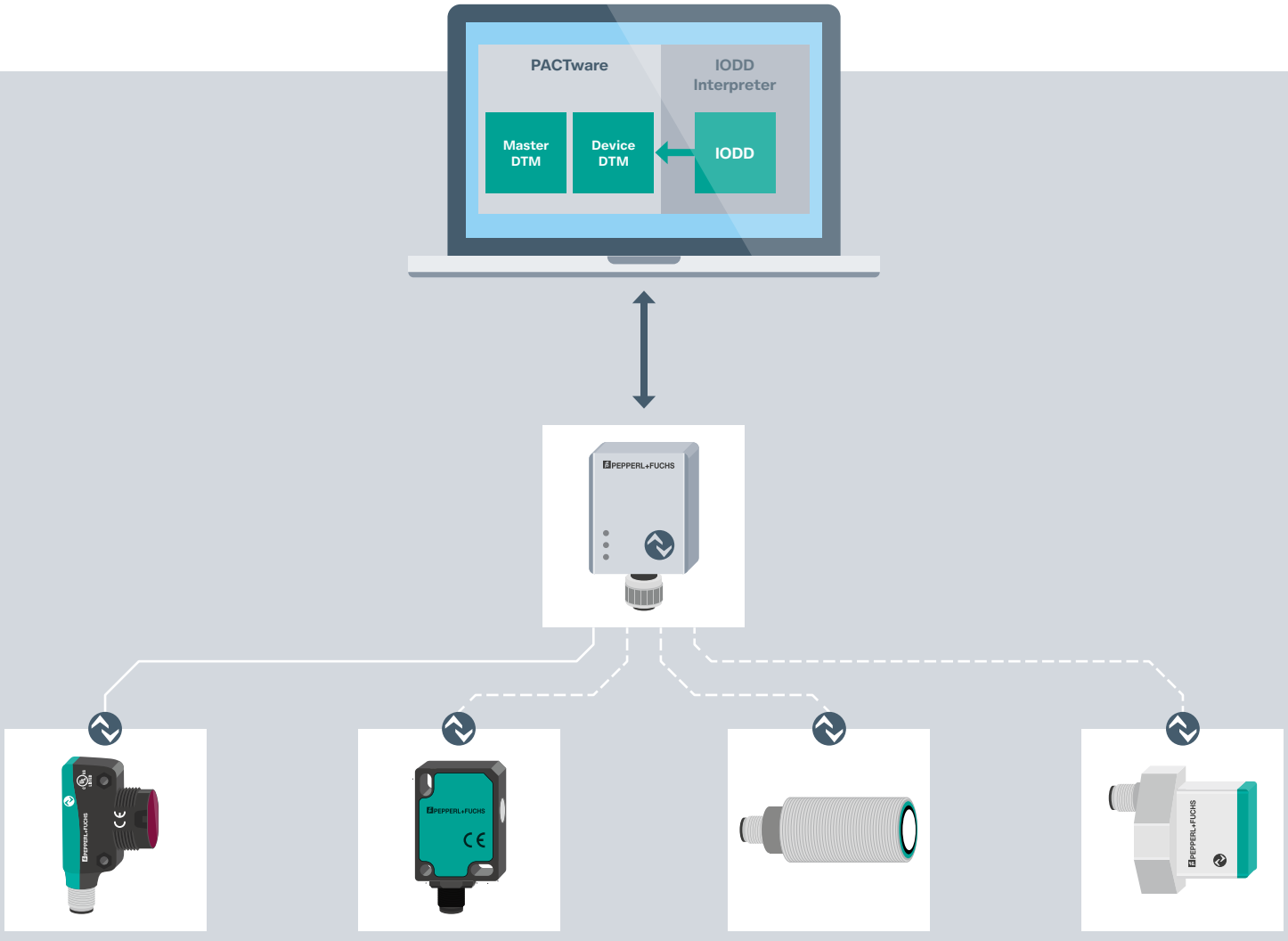
For more information, visit
www.pepperl-fuchs.com/tf-io-master

Small but Mighty

The IO-Link USB master enables any IO-Link device to be preconfigured and tested via the IODD interpreter included in the software package from Pepperl+Fuchs.

Read parameter data from an IO-Link device, record changes and save data externally, duplicate and compare device settings—these are only a few of many possibilities. Previous knowledge of control system programming is not necessary.

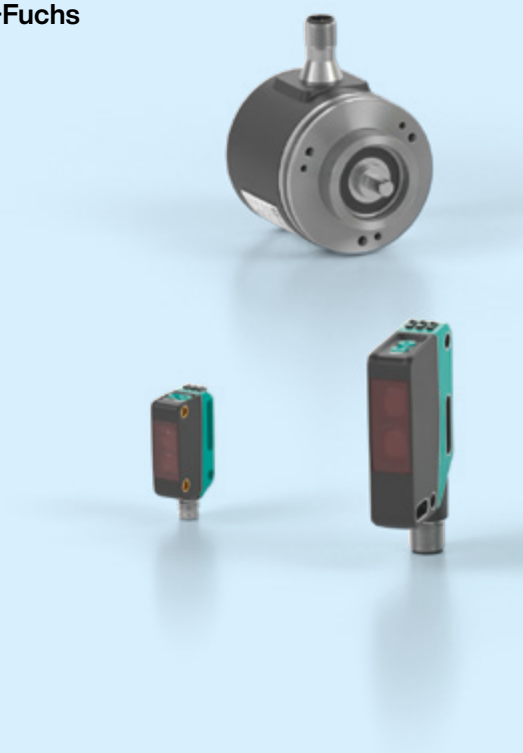
Technical Data	IO-Link-Master02-USB
Dimensions	70 × 41 × 24 mm (L × W × H)
Mass	100 g
Connection	IO-Link port: 1x M12, 5-pin, A-coded Operating voltage: DC-9, 2.1 mm USB 2.0: USB connector type MiniB
Interfaces	IO-Link, USB
Functional principle	Master mode
Standards	IEC 61131-9 (IO-Link Version 1.0 and 1.1)
Power supply	24 V DC/USB 5 V DC



IO-Link USB master for offline parameterization before assembly

The Right Solution for Every Challenge

From photoelectric sensors to ultrasonic and vibration sensors, rotary encoders, and inductive positioning systems—they all combine the advantages of IO-Link and increase the efficiency of your systems. They provide process and diagnostic data, communicate status information, and enable new parameterization options. In this way, they lay the foundation for the seamless networking of components, machines, and systems. With the continuous expansion of the IO-Link portfolio, Pepperl+Fuchs is paving the way for automation technology to the Smart Factory.



- Detection
- Position Detection
- Measuring
- Identification
- Monitoring and Control

Detection

IO-Link devices for reliable object detection form the basis of automated processes. Inductive distance sensors in cylindrical and cubic designs detect objects with high dynamics at speeds of up to 3 m/s. Photoelectric sensors such as the R305 retroreflective area sensor enable precise height measurements, flexible beam blanking, and individual contrast settings—ideal for demanding detection tasks.

Position Detection

High-performance IO-Link devices are available for precise position determination. Inductive positioning systems such as the PMI and position encoder systems (WCS) provide reliable position data even in harsh environments. The portfolio is complemented by flexible and cost-effective rotary encoders that can be easily integrated into a wide variety of applications.



Measuring

IO-Link devices for measurement tasks deliver exact values even under demanding conditions. Photoelectric sensors such as the R200 with Pulse Ranging Technology achieve ranges of up to 60 m and enable precise distance measurements. Ultrasonic sensors such as the F42 feature adjustable sound beams and a robust design compliant with IP67 degree of protection—ideal for a wide range of industrial measurement applications.

Identification, Monitoring, and Control

For identification tasks, Pepperl+Fuchs offers high-performance RFID solutions. UHF read/write devices enable long ranges and easy commissioning via plug-and-play functionality. HF systems are particularly suitable for guided applications and can detect multiple tags simultaneously. This ensures reliable and efficient identification of objects in a wide variety of processes.

IO-Link devices for monitoring and control ensure maximum transparency and efficient processes. For example, vibration sensors provide comprehensive condition data for predictive maintenance. Flexible signal lights visualize conditions individually, and motor control modules enable direct and simple control of systems.

Inductive Distance Sensors

Inductive Meets Speed

Integrated condition monitoring functions enable continuous monitoring of speed and acceleration of actuators. This supports predictive maintenance of shock absorbers, hydraulic cylinders, and valves. Measurement speeds of up to 3 m/s ensure short cycle times and high productivity. In-house development and production, combined with many years of market experience, ensure expert consulting and continuous innovation.

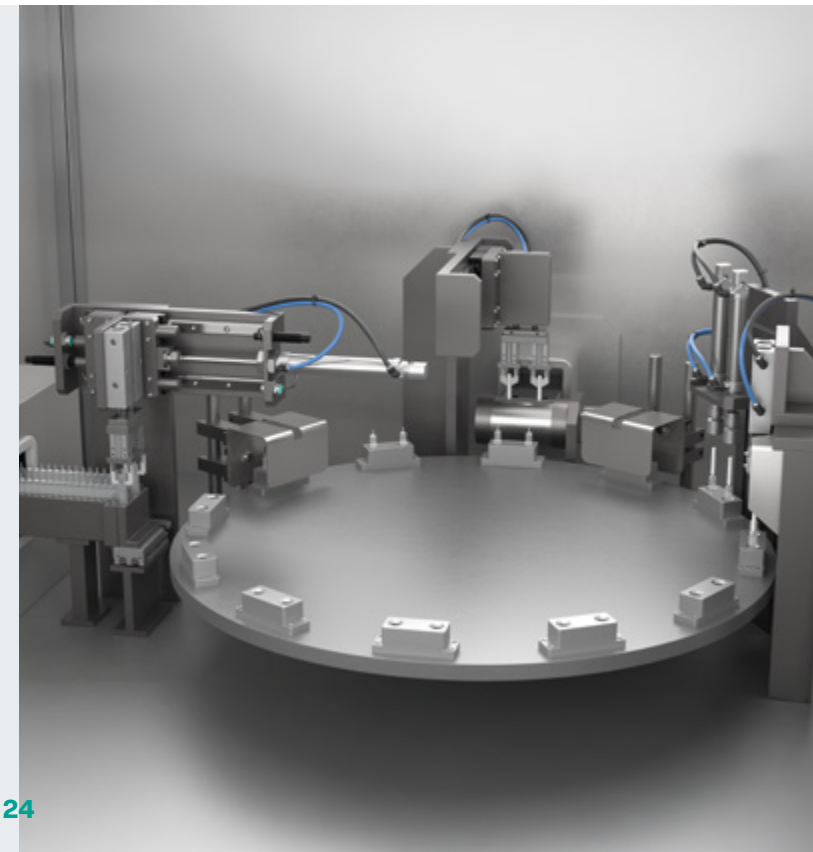
Extract of Technical Data	M8 Series	M12 Series	M18 Series	M30 Series	F33 Series	L2 Series
Search term	NAB*-8GM* NAN*-8GM*	NAB*-12GM* NAN*-12GM*	NAB*-18GM* NAN*-18GM*	NAB*-30GM* NAN*-30GM*	NAB8-F33*	NAN30-L2*
Max. switching distance **Flush** **Nonflush**	 2 mm 4 mm	 4 mm 7 mm	 8 mm 12 mm	 10 mm 20 mm	 8 mm	 30 mm
Measurable velocity **Flush** **Nonflush**	 0.7 m/s 1.1 m/s	 1.4 m/s 2.1 m/s	 2.7 m/s 3.0 m/s	 2.4 m/s 3.0 m/s	 2.7 m/s	 3.0 m/s
Connection	Cable, M8 plug	Cable, M12 plug	Cable, M12 plug	Cable, M12 plug	Cable	M12 plug
Output type	IO-Link	Voltage (0–10 V), current (4–20 mA), IO-Link				
Linearity	±3 %					
Repeat accuracy	±5 %					



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-inductive





Photelectric Sensors—R305 Series

Detection Guaranteed

The R305 retroreflective area sensor reliably detects objects across a wide detection range, regardless of shape and size. Standard and High Resolution modes, height measurement, individual beam suppression, and contrast adjustment enable flexible use. Conveyor suppression prevents false triggering caused by vibrations or wear. The alignment LED ensures easy commissioning, while Auto-Teach and Smart Signal Compensation guarantee consistent signal quality.

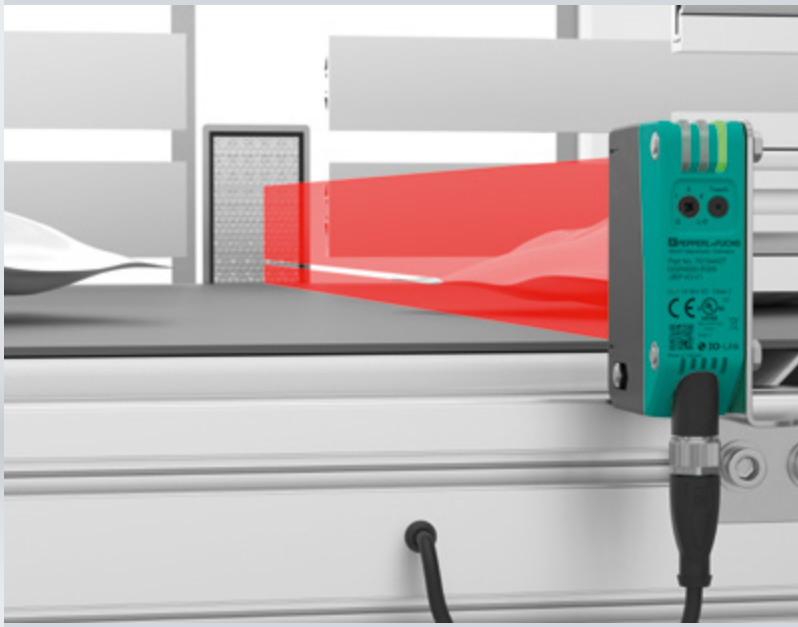
Extract of Technical Data	OGR4000-R305-*
Dimensions (W × H × D)	28.5 × 89 × 59.5 mm
Measurement range	High Resolution Mode: 0 ... 2 m Standard Resolution Mode: 0 ... 4 m
Object size	High Resolution Mode: 2 mm at 0 ... 1.5 m range 3 mm at 0 ... 2 m range Standard Resolution Mode: 5 mm at 0 ... 2 m range 8 mm at 0 ... 3 m range 10 mm at 0 ... 4 m range
Resolution	2 mm
Interface	IO-Link, push-pull output



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-r305





Absolute Rotary Encoder—ENA*TL

Designed for Flexibility and Cost Efficiency

In addition to an exceptionally wide range of mechanical variants, the IO-Link rotary encoder offers a wide variety of configuration parameters. When configured via software to meet specific application requirements, a single device variant can be used to address a wide range of applications, thereby reducing inventory costs. Its measured values provide information on the absolute position (single-turn and multi-turn) and the direction of rotation. The configuration index allows for particularly easy interpretation of the delivered data, especially when accessing the device via remote maintenance.

Extract of Technical Data	ENA**TL—IO-Link
Accuracy	0.1°
Resolution	16 bit (single turn), 15 bit (multiturn)
Direction of rotation	Clockwise or counterclockwise
Shaft type	Solid or recess hollow
Flange	Servo, clamping, or spring-plate mounting
Housing dimensions	36 mm, 58 mm
Degree of protection	IP65, IP67

IP67

COM 3

IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-encoder





Positioning Systems—PMI Series F90, F112, and F166

Patented Technology for Precise Position Detection

The PMI inductive positioning system combines the ruggedness of a proximity sensor with the precision of modern position and angle measurement. The patented technology enables highly accurate results with maximum flexibility through simple steel actuators. The F90 series detects two elements simultaneously and integrates measurement and switching functions, including in Zone 2/22. The F112 series provides precise position data to within 0.033 mm, with IP67 degree of protection in a metal housing. Meanwhile, the F166 series stands out for its compact design.

Extract of Technical Data	PMI*F90-IU-IO	PMI*F90-3EP-IO	PMI*F90-IU2EP-IO-V15	PMI*F112-U-IO	PMI*F112-2EP-IO	PMI*F112-2EPE2-IO	PMI*F166-EP-IO
Measurement length	40, 80, 120 mm	40, 80, 120 mm	40, 80, 120 mm	14 mm	14 mm	14 mm	15 mm
Output type	1 analog output (current or voltage)	3 switching outputs (push-pull)	1 analog output 2 switching outputs (push-pull)	1 analog output (voltage)	2 switching outputs (push-pull)	2 switching outputs (push-pull) 1 switching output (PNP)	1 switching output (push-pull)

IO-Link 1.1

IP67
IP69K

Zone 2/22
(3G ec, 3D tc)

Measuring and switching in one device

For more information, visit
pepperl-fuchs.com/tf-io-positioning





The Gold Standard in Positioning

The position encoding system consists of a metal or plastic encoder rail equipped with photoelectric sensors for scanning, ensuring precise positioning even in harsh environments. The position value is detected non-contact and absolutely. With its modular design, the system can be perfectly adapted to any application and environmental situation. Adverse conditions, such as extreme weather, dirt, aggressive environments, have no effect on accuracy.

Extract of Technical Data	WCS3BLS810DS
Resolution	±0.40 mm (1,250 positions/m)
Travel speed (vmax)	12.5 m/s
Measuring length	Up to 314.5 m
Options	Outdoor, display, switching output for velocity and position ranges



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-wcs





Positioning Systems—PXV*F213*IO

Non-Contact Absolute Positioning over Distances of up to 100,000 m

With its unique combination of a 2-D camera system and multi-redundant Data Matrix code tape, the PXV provides maximum precision in position detection and absolutely uncompromising process safety.

The high-tech read head has an integrated illumination unit and is therefore extremely reliable at detecting position marks printed on the self-adhesive tape as 2-D Data Matrix codes, regardless of the ambient light conditions. The use of several Data Matrix codes as information carriers allows data to be displayed in a highly redundant manner—a level of multiple redundancy that makes the PXV extremely resistant to interference.

Extract of Technical Data	PXV*F213*IO
Max. route length	0 ... 100 km
Reading distance z (tolerance)	100 mm (±30 mm)
Position accuracy	0.2 mm
Housing dimensions	80 × 70 × 35 mm

IO-Link 1.1.5 Cost efficient

For more information, visit
pepperl-fuchs.com/tf-io-pxv





Small But Powerful

Precise distance measurement over long distances poses a particular challenge when installation space is limited. Modern sensor solutions open up new possibilities in this area: Using advanced Pulse Ranging Technology, distances of up to 10 m—and even up to 60 m with a reflector—can be reliably measured. At the same time, the compact design ensures maximum flexibility for integration into machines and systems. A repeat accuracy of ≤ 3 mm ensures precise results, while the standardized IO-Link interface enables seamless integration into future-oriented automation environments.

Extract of Technical Data	OMD10M-R200-*	OMR60M-R200-*
Measuring range	10 m	60 m
Repeatability	≤ 3 mm	≤ 6 mm
Dimensions	50.6 × 41.7 × 15 mm	
Resolution	1 mm	
Ambient temperature	–30 °C ... +60 °C	



IO-Link 1.1









Laser class 1

For more information, visit
pepperl-fuchs.com/tf-io-opto





Ultrasonic Sensors—F42

Cubical All-Rounder

The UB*-F42 series devices offer a wide range of benefits, features, and configuration options. These include a variable beam diameter, a particularly small dead band, automatic synchronization, a teach-in input, and IP67 degree of protection. The sensors can be used universally in a wide variety of applications: The spectrum ranges from vehicle detection at entrances to the consumption of roll stock in sheet metal cutting systems to inventory measurement in building material silos.

Extract of Technical Data	UB500-F42(S)	UB2000-F42(S)	UB4000-F42(S)	UB6000-F42(S)
Operating principle	Reflective sensor	Reflective sensor	Reflective sensor	Reflective sensor
Detection range	30 ... 500 mm	60 ... 2,000 mm	200 ... 4,000 mm	350 ... 6,000 mm
Operating voltage	10 ... 30 V DC			
Output type	1 push-pull output with IO-Link 2 push-pull outputs with IO-Link 1 analog output (current or voltage)			


IO-Link 1.1.4

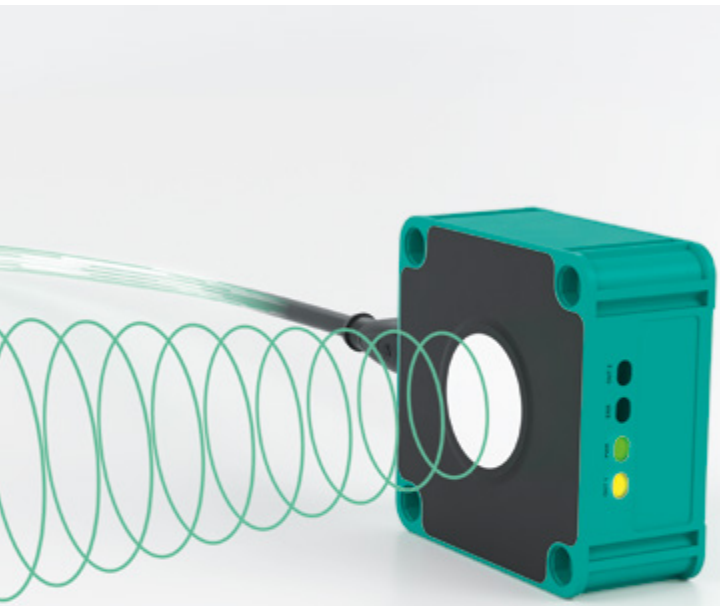



Max. 6 m


Adjustable sound beam


Synchronizable

For more information, visit
pepperl-fuchs.com/tf-io-ubf42





At Long Distance

Seamlessly identify and track parts and goods using the “track and trace” principle. Establish transparency throughout the entire manufacturing process. Create the information foundation for implementing Industry 4.0 concepts. The F191 RFID reader/writer combines the advantages of mature industrial UHF technology with a standardized interface for IO-Link communication—making it a cost-effective enabler component for a wide range of standard applications in sectors such as intralogistics, automotive, and material handling. With Easy Mode based on the plug-and-play principle, there is no need for programming.

Extract of Technical Data	IUT-F191-IO-V1-FR*
Frequency range	UHF 865–928 MHz
Typical read/write distance	1 m
Antenna polarization	Circular
Radiated power	3 ... 100 mW ERP adjustable 150 mW EIRP adjustable
Dimensions	165 × 165 × 47 mm
Temperature range	–25 ... +70 °C (operation with transmission pauses) –25 ... +60 °C (continuous transmission)
Degree of protection	IP67

IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-f191





Identification Systems—IQT3

Unmatched Range, Maximum Flexibility

The IQT3-FP-IO-V1 RFID read/write device is particularly well-suited for guided industrial applications. It offers a read range of up to 30 cm (adjustable) and supports multitag detection, allowing up to 20 tags to be detected simultaneously in a single read operation. By checking the resonance frequency, the device can detect interference—caused by the installation environment, surrounding materials, or interfering radiation—and automatically adjust itself. Any errors are clearly indicated by a red status LED and can be viewed in detail via software parameters. The output of RSSI values (RSSI = Received Signal Strength Indicator) enables the early replacement of defective tags.

Extract of Technical Data	IQT3-FP-IO-V1
Frequency range	HF 13.56 MHz
Read/write distance	0 ... 300 mm
Mechanical interface	M12 × 1
Conformity	ISO 15693 NFC type 5
Dimensions	80 × 80 × 40 mm (L × W × H)
Temperature range	–25 ... +70 °C (operation with transmission pauses) –25 ... +55 °C (continuous transmission)
Degree of protection	IP67



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-iqt3





G20 Motor Control Module

For the Most Demanding Process Requirements

The G20 motor control modules feature a slim, application-optimized design that allows for direct installation on the mounting rail of the roller conveyor line. These modules enable you to control the start/stop function, direction of rotation, acceleration/deceleration, and speed of the motors within your conveyor system. All connection cables for sensors and motor rollers are already integrated into the module. The flat cable for communication and/or power supply can be easily plugged in as the final step.

Extract of Technical Data	ICA-8*IO-4M4-G20-IO-P14
Communication interface	IO-Link V1.1.3 (Class A device)
Supported motor rollers	■ Interroll EC310/Interroll EC5000 24 V/48 V AI (20 W/35 W/50 W) ■ Rulmeca BL3 ■ Itoh Denki PM500XK/Itoh Denki PM500XC ■ PULSEROLLER Senergy-IDC ■ Unidrive One (Pancake motor)
Inputs/Outputs	8 digital inputs/outputs + 4 motor roller outputs + encoder input
Current capacity	■ 3.5 A (continuous), 5 A (< 2 s), max. 7.5 A (< 0.3 s) per motor ■ Total current (continuous) ■ Max. 10 A per device (TB ≤ 50 °C) ■ Max. 6 A per device (TB ≤ 70 °C)
Modes	Standard (speed, direction... as parameters)/Extended (speed, direction... in process data)
Dimensions (H × W × L)	27.5 × 131.5 × 54 mm



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-20





Vibration Sensors—VIM3

Comprehensive Machine Condition Data, Reliable Analysis

The IO-Link vibration sensor VIM3*IO* provides a wide range of different measured values and output data. These are transmitted cyclically to the controller via the process data. This valuable information enables a well-founded analysis of the current machine condition at any time. This ensures predictive maintenance, allowing the plant operator to promptly implement tailored measures. The wide range of information output by the sensor includes data on temperature, bearing condition parameters, operating hour counters, and measurement value scaling, which enables remote data interpretation.

Extract of Technical Data	VIM3
Interface	IO-Link/analog 4 ... 20 mA
Temperature range	–40 ... +85 °C
Output values	Speed/acceleration/temperature/ bearing condition index
Switch	Switching output



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-vim





Unmatched Flexibility and Exceptional Durability

The signal tower features up to nine segments that can be individually configured and controlled. In addition to flexible color selection within the RGB spectrum, you can choose between steady, flashing, strobe, or rotation modes. Brightness can also be easily adjusted via software. For additional personal and property protection, the 105 dB siren provides an audible alarm with ten configurable tones and four volume levels.

The signal light tower, with a diameter of just 55 mm, offers eight predefined colors as well as user-friendly touch functionality for easy signal confirmation right on-site.

Extract of Technical Data	ICA-SL-*MCS-70MM-IO-V1	ICA-SB-*-55MM-*
Interface	IO-Link V1.1 (COM 3/Class A)	
Number of segments	6/9	1
Optical data	LED Multicolor (>1,000,000 colors configurable)	LED Multicolor (8 predefined colors)
Acoustic data	Multitone (105 dB/10 tones)	85 dB
Touch functionality	–	optional
Degree of protection	IP66/IP69K	IP66/IP69K
Temperature range	–30 ... +60 °C	–20 ... +50 °C
Dimensions (W × H)	72.5 × 271 mm	55 × 79 mm



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-link-light





Push Button Box

Seamless Integration

The push button box can be easily connected to an M12 connector. This eliminates the need for complex and error-prone wiring. The particularly compact housing is mounted directly on the system using a mounting clip. Additionally, the push button box features a modern design and ensures perfect visibility of the buttons, even from a distance. Depending on the application requirements, numerous software-based configurations are available: five standard colors to choose from or custom RGB color configuration, four different flashing modes, or night mode with various brightness levels.

Extract of Technical Data	ICA-F85E2-MC-IO-V1
Interface	IO-Link 1.1.2 (COM 2)
Illumination color of push buttons	RGB (configuration via IO-Link)
Dimensions	123.2 × 40 × 35.6 mm
Temperature range	–30 °C ... +60 °C
Degree of protection	IP65



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/tf-io-link-box





The Perfect Complement: Connection Technology and Accessories

Perfectly matched connection and mounting technology ensures the optimal integration of a sensor. Pepperl+Fuchs' comprehensive range of accessories provides all the necessary components for a ready-to-install solution tailored exactly to your needs.

Connection Technology from Pepperl+Fuchs

- Sensor-actuator cables—numerous connection and cable types suitable for worldwide use
- Assembled connectors—wide range of connectors suitable for a wide variety of applications
- Passive distributors—M8 and M12 distributors with molded-in trunk cables for reduced installation effort
- Sensor-actuator distributors—for easily combining two signals into a single slot
- Mounting adapter—Signal routing from the control cabinet directly to the field
- Data connectors—for long-term, reliable networking of various components in an automation system

A Wide Selection of Available Cable Types

- PVC—robust and cost-effective
- PUR—durable and highly flexible
- PUR-U—highly flexible with UL approval
- PUR-A—weld-spark resistant for the automotive industry
- PUR-O—robust for demanding outdoor applications
- POC—specifically for welding areas

For more information, visit
pepperl-fuchs.com/tf-connectiontechnology



Comprehensive Diagnostic Data for Reliable Condition Monitoring

The Form A valve connector is easily integrated into an IO-Link network using the preassembled M12 connector. This provides access to a wide range of digital diagnostic data, delivering reliable information on the status of the connected valve.

Pulse Width Modulation Mode (PWM)

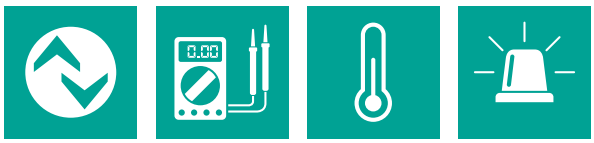
In PWM mode, the average current required by the connected valve is reduced, thereby significantly limiting the temperature increase. This not only increases the valve service life, but also allows an overall energy saving of up to 70 %.

Digital Diagnostic Data:

- Current switching status
- Switching cycle counter
- Voltage and current measurement
- DC resistance of the valve coil
- Temperature
- Valve motion detection

Highlights

- Increased plant availability: reliable condition monitoring due to various digital diagnostic data via IO-Link
- Individual control of the output current in PWM mode enables energy reduction of up to 70 %
- Short response times in the event of maintenance due to configurable alarm function when defined limit values are exceeded
- Event-related LED for fast status display and identification of faulty valves directly in the plant
- Complete solution from a single source—extensive IO-Link portfolio for any requirement



IO-Link 1.1

For more information, visit
pepperl-fuchs.com/pf-smart-valve-connector



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