

BALLUFF

IO-Link
Portfolio

CONNECTING YOUR EQUIPMENT WITH SENSORS, RFID AND I/O

 *innovating automation*

 **IO-Link**

BALLUFF

**I/O-Link
Portfolio**

**CONNECTING YOUR
EQUIPMENT WITH
SENSORS, RFID AND I/O**

Innovative solutions

BALLUFF IO-LINK PORTFOLIO

 *innovating automation*

SENSORS



RFID



SAFETY



OBJECT DETECTION

- Photoelectric
- Capacitive
- Magnetic field
 - Multiple switch points
 - Adjustable hysteresis
 - C-slot and T-slot



MEASUREMENT

- Magnetostictive linear position sensors
 - In-cylinder rod-style
 - External-mount profile style
 - Measuring lengths up to 4.8 meters
- Magnetic linear encoders
 - Measuring lengths up to 8 meters
 - Flexible tape
 - Can be cut to length
- Short-stroke inductive sensors
 - Measuring lengths from 14...133 mm
 - Detects metal target



DISTANCE MEASUREMENT

- Photoelectric
 - Non-contact up to 6 M range
 - Resolution as low as 10 μ m
 - Laser light
- Inductive
 - Non-contact absolute measurement
 - Low temperature drift
 - Multiple form factors
- Ultrasonic
 - M18 straight and 90° housings
 - Automatic synchronization for multiple sensors



RFID SYSTEMS

- Multiple form factors
- 10 Byte or 32 Byte
- Simple configuration
- Global standard frequency
- IP69 washdown with ECOLAB: Food processing, beverage, meat, pharma and packaging
- High temperature
- Machine access control
- Work in process



SAFETY MODULES

- I/O hub with IN, OUT and OSSD
- I/O hub with isolated output power
- Communicate to most safety devices using PROFIsafe over IO-Link technology



INDUSTRIAL NETWORKING

HUMAN MACHINE INTERFACES

IO-LINK MASTER BLOCKS

EtherNet/IP



EtherCAT

CC-Link IE

DeviceNet



CC-Link

- IO-Link masters for most major fieldbuses and networks
- Application specific families
 - Weld block: Welding or high noise environment
 - IP69 washdown with ECOLAB: Food processing, beverage, meat, pharma and packaging
 - Factory automation IP67
- Capable of up to 240 I/O counts with 8 channel master
- High amperage output support for valve banks or cylinder



IO-LINK HUBS

- Ability to consolidate up to 16 sensors/actuators
- Multiple options
 - M8
 - M12
 - Input only
 - Output only
 - Configurable I/O
 - With expansion port
- Application areas
 - Weld block
 - IP69 washdown
 - IP67 factory automation
 - IP20 inside cabinet



VALVE CONNECTORS

- Enables existing valve banks to use IO-Link
- D-sub connectors – FESTO, SMC, MAC Numatics, Parker, and more



UNIVERSAL I/O INTERFACE

- 8 or 16 freely configurable I/O
- Up to 1. A max total current
- Open coil and short circuit detection diagnostics



TEMPERATURE ANALOG I/O

- Single or multi-channel analog I/O to IO-Link communication
- Every channel is configurable for current/voltage measurement
- Up to 16 bit resolution and ability to add set points per channel



SIGNAL CONVERTER

- RS232 to IO-Link
- Enables bringing scanner printers and other serial devices to IO-Link
- Inline barrel style design with IP67



INDUCTIVE COUPLERS

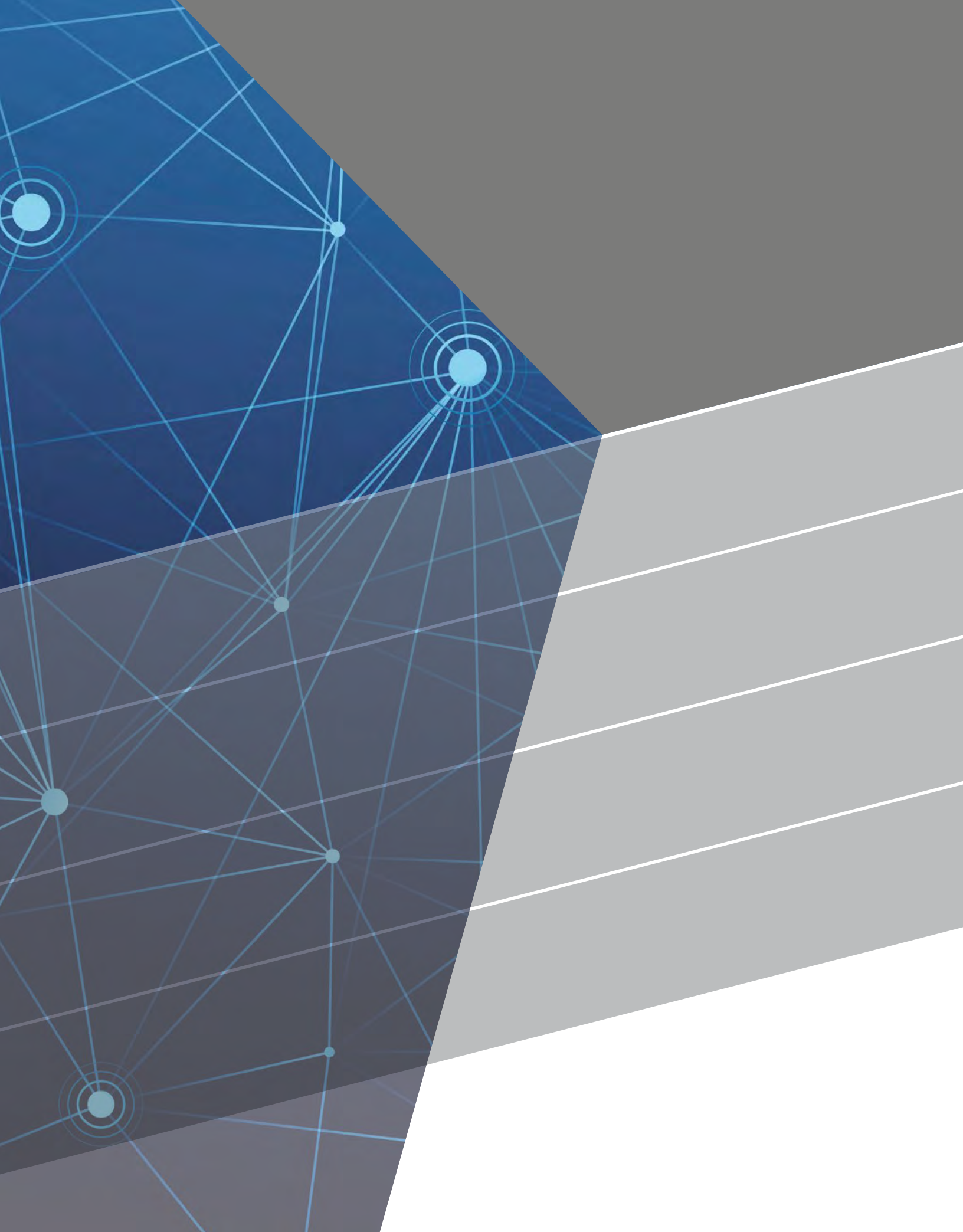
- Non-contact power and data exchange over IO-Link
- Q40 housing with max. 1A power
- M30 housing with max. 1A power
- IO-Link input only
- IO-Link 3-directional connection
- IP67 protection rating



VISUALIZATION DEVICES

- SmartLight tower lights
- SmartLight indicators
- Visualize various states of a process
- Report progress or errors prominently with/without buzzer option





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IO-LINK – THE IDEAL SOLUTION



Fast, flexible and efficient production

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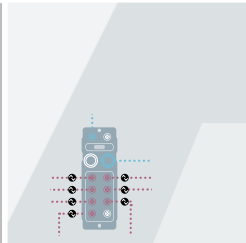
IO-LINK – THE NEXT EVOLUTION

 IO-Link

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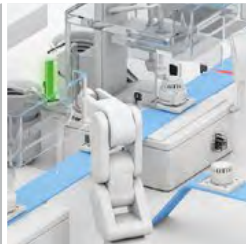
IO-LINK ARCHITECTURES



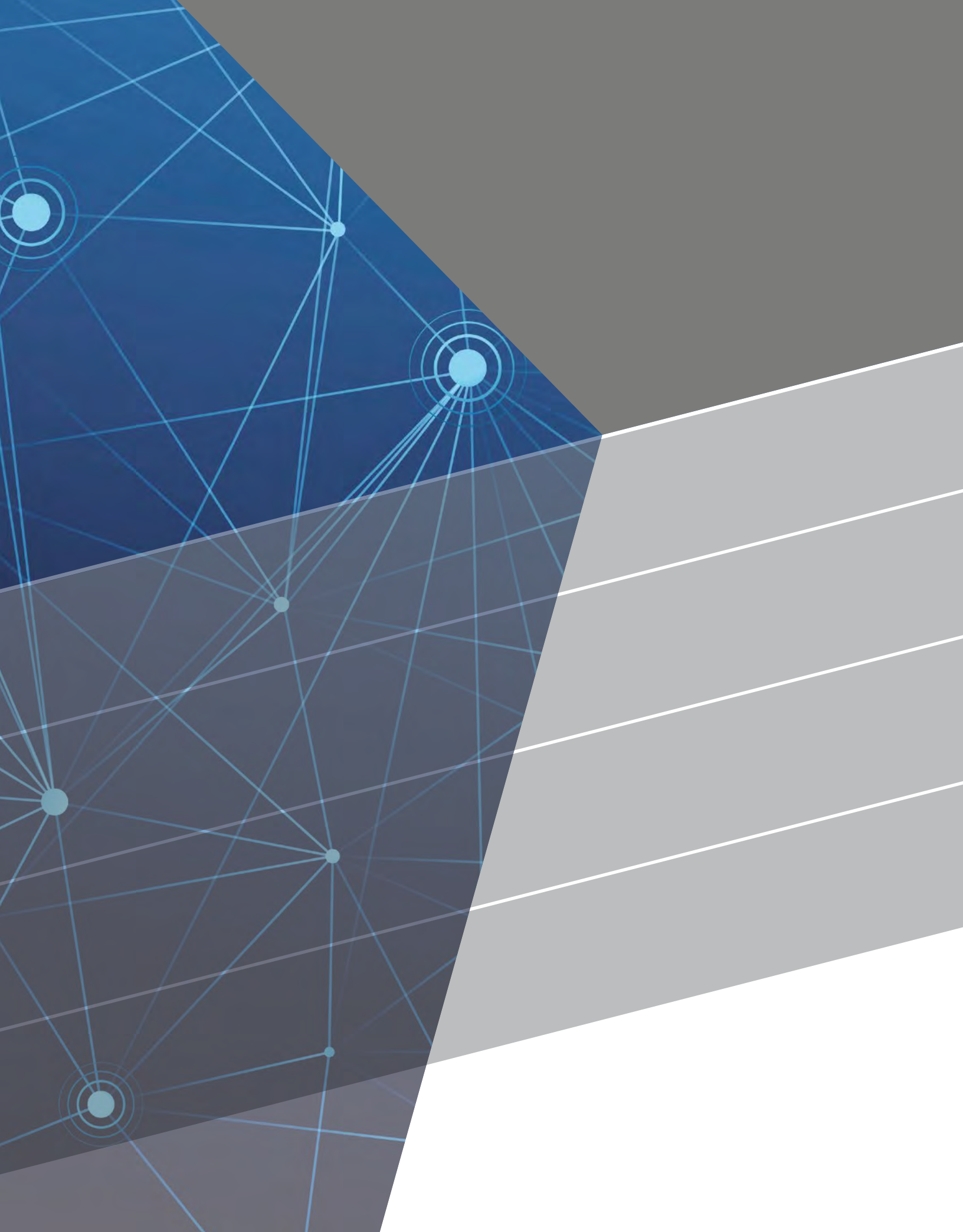
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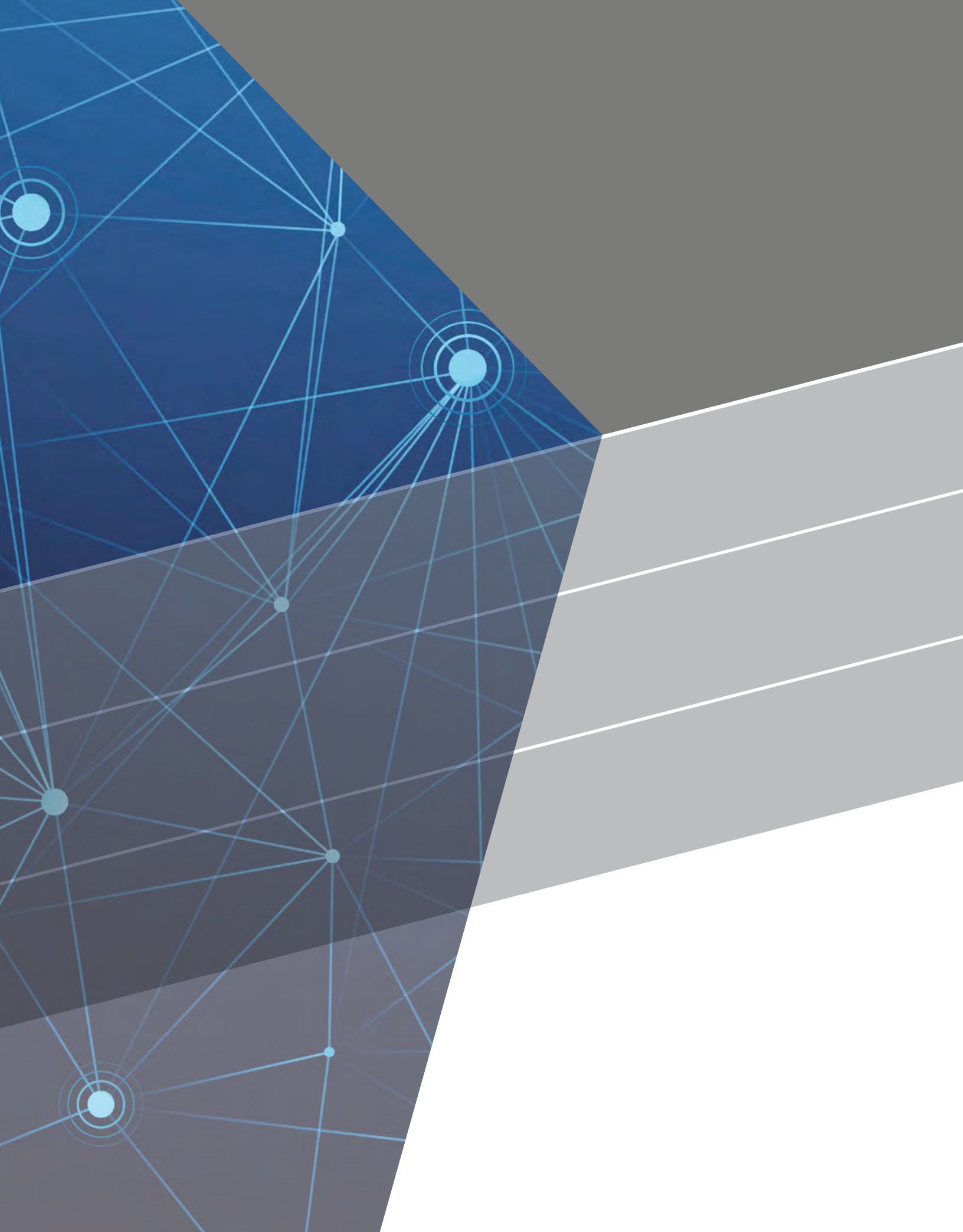


- 128 Safety I/O modules

WARNING

- Read, understand, and follow warnings and manual. Failure to do so could result in serious injury or death.
- NEVER USE AS A SENSING DEVICE FOR PERSONNEL PROTECTION
- Does NOT include self-checking redundancy circuitry required for use in personnel safety applications
- Does NOT meet OSHA and ANSI standards for point-of-operation devices

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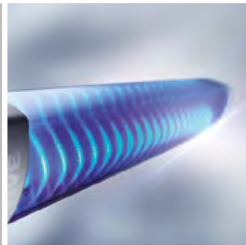
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⚠ WARNING

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Fast, flexible and efficient production

IO-LINK – THE IDEAL SOLUTION



Just one interface for improved process quality

Intelligent combining of industrial network with the IO-Link communication standard is the ideal solution for faster, more flexible, more efficient and more adaptable production. This provides you with a powerful infrastructure for reliably managing the growing volume of data. It transports your data through the entire manufacturing process and enables seamless communication from the sensor into the internet, making IO-Link the ideal enabler for Industry 4.0.

How IO-Link increases the performance of your network

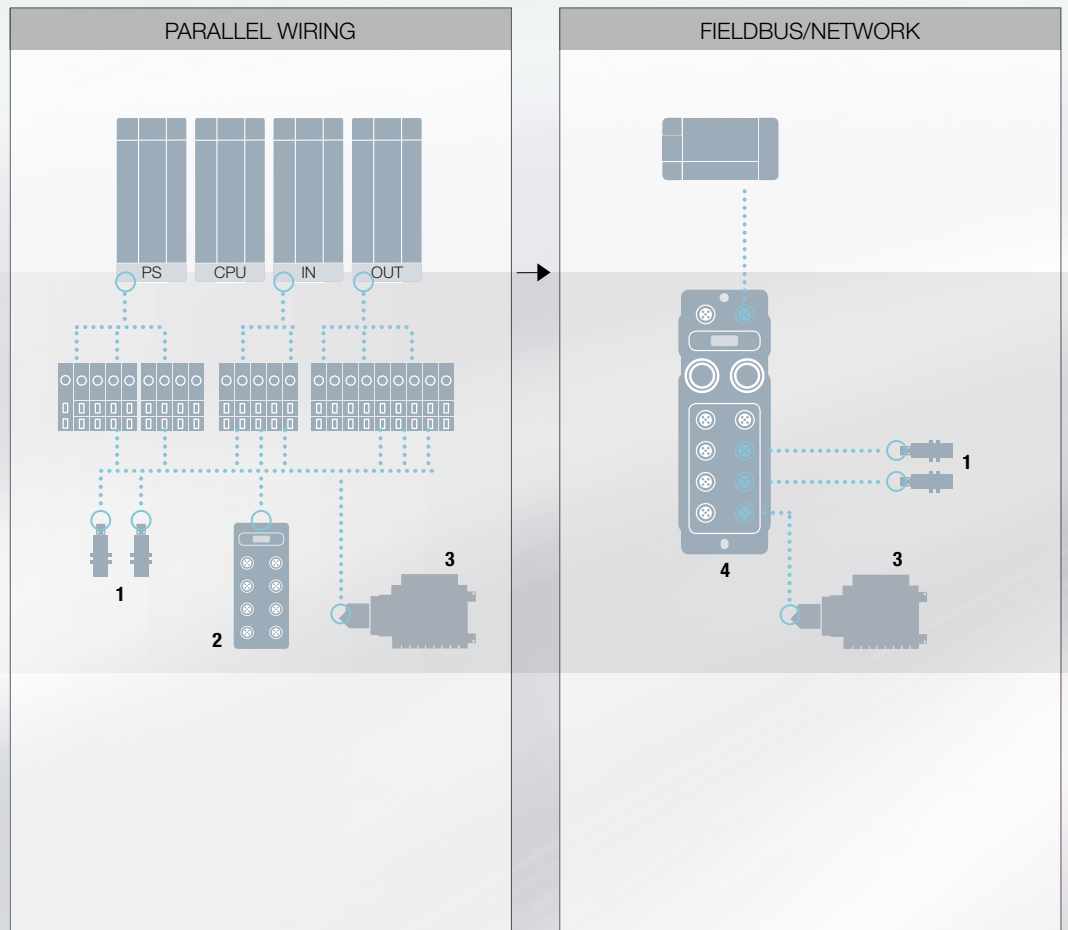
IO-Link is the first globally standardized IO technology (IEC 61131-9) that communicates from the controller down to the lowest automation level. This universally applicable interface is a fieldbus-neutral, point-to-point connection, which uses standard unshielded cables. IO-Link sends all the sensor and actuator signals to the controller and then carries controller data to the sensor/actuator level with revolutionary consequences.

This open standard opens all sensors to the fieldbus level and even transports analog signals noise-free by digitizing them. IO-Link enables fully continuous diagnostics as well as automated configuration of the IO-Link devices via the controller. This means IO-Link is simple to install. In addition to the IO-Link master, all you need is a standard unshielded 3- or 4-conductor cable to connect sensors and actuators.



Modular control concepts

IO-LINK – THE NEXT EVOLUTION



- 1 Terminal block
- 2 Sensors
- 3 Junction blocks
- 4 Valve interfaces
- 5 Fieldbus module
- 6 IO-Link SmartLight
- 7 IO-Link pressure sensor
- 8 Industrial RFID system
- 9 IO-Link master
- 10 IO-Link analog converter
- 11 IO-Link valve interfaces
- 12 IO-Link sensor hubs
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From parallel wiring to the fieldbus protocol

Replacing parallel wiring with fieldbuses was an enormous step because fieldbus protocol has successfully eliminated the immense installation effort associated with copper cables and substantially reduced costs. It is not just that the use of fieldbuses reduces working time because a bus cable replaces numerous parallel strands of wire, since fewer strands are needed, material and space are also conserved. Simultaneously, the bus cable connects the components of different levels, creating a system without the need for a control cabinet.

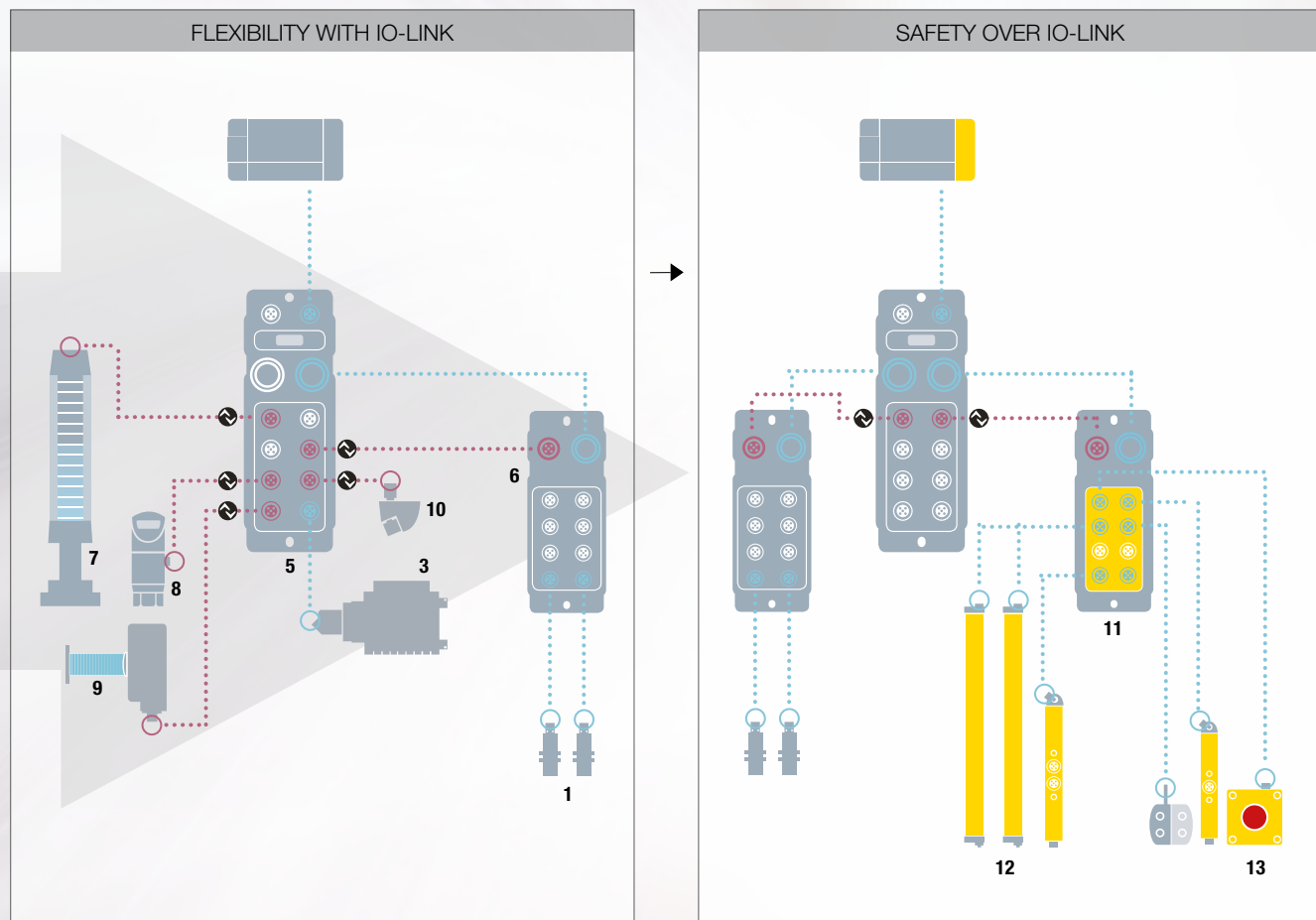
Pitfalls of the fieldbus protocol

Fieldbus cables are not without problems however, even if their protocol is no longer electrical, and the cabling effort goes down by orders of magnitude. Fieldbus cables have a low signal level, are noise-susceptible, inflexible and are expensive because of the shield.

Universal, simple and flexible: IO-Link!

The weaknesses of the fieldbus protocol are now a thing of the past thanks to IO-Link. The standard unshielded, 3- or 4-conductor industrial cables are highly flexible and suitable for many bending cycles, easy to connect, highly economical, and can use M5, M8 or M12 connectors. Therefore, with IO-Link you can rely on an established standard for connecting the widest possible variety of devices. IO-Link ensures extremely flexible control concepts. This versatility, simplicity and performance capability mean IO-Link can be considered a universal interface – like USB – in automation.

But with IO-Link the flexibility is even greater thanks to the inclusion of a safety solution. With Safety over IO-Link, Balluff offers the first safety solution to be integrated with IO-Link for combining safety and automation technology in one system. Safety over IO-Link provides both sensor/actuator details as well as safety information, so that you can benefit from the best of both worlds.



IO-Link Architectures

IO-LINK SAVES TIME AND MONEY.



innovating automation

Easy installation

With IO-Link all you need is an industry-standard 3- or 4-conductor cable. The industry standard interface can be quickly and easily integrated into the fieldbus world to simply link even complex devices. One special feature: the digital communication ensures noise immunity even without the use of expensive shielded cabling. Analog signals are digitized with no conversion losses.

Highest machine availability

IO-Link enables quick, error-free sensor replacement and prompt commissioning. You can significantly reduce downtime since the parameters of a replaced IO-Link sensor are automatically written from the IO-Link master to the new sensor. Commissioning processes, format changes or recipe changes are handled centrally via the controller's function modules. This saves time and greatly reduces the potential for mistakes. Another advantage to you: IO-Link devices cannot be mixed up since they are automatically identifiable via IO-Link.

Requirements-based maintenance

Continuous diagnostic data for the entire process extends your service intervals. Automatic readjustment via IO-Link means you need to maintain equipment and machines much less often. And now predictive error detection is possible because the complete process parameters are consistently displayed in the controller.

More efficient operation

With IO-Link, accessibility of the sensors is no longer a factor; you can position sensors in the machine as the process requires. Process monitoring, configuration and error analysis of the IO-Link devices now takes place in the controller and machine sequences are time-optimized. Signal delays and distortions are reliably eliminated because digital transmission of data ensures high signal quality.

A wide range of application requirements can be easily met with IO-Link because you can use both binary and analog standard devices at the same time along with IO-Link sensors/actuators.

High-performance, consistent network

Controller concepts using IO-Link provide you with simple and universal solutions for a high-performance, consistent network, lower costs and more flexibility than ever.

Review the typical applications presented on the next pages to learn about the possibilities IO-Link opens up for you.

STANDARD
SENSORS/
ACTUATORS

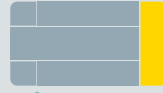
STANDARD PLC

SAFETY PLC



DeviceNet
EtherNet/IP
EtherCAT

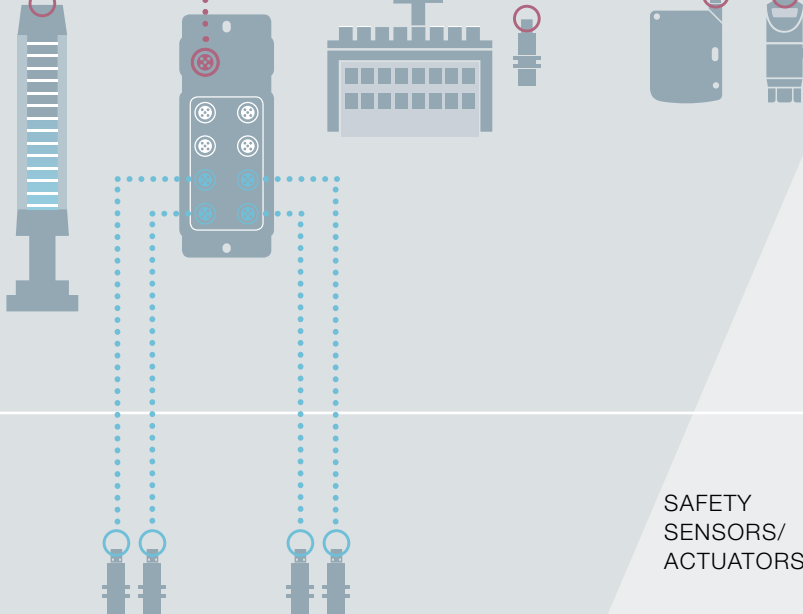
CC-Link
CC-Link IE
Field



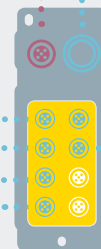
FIELD BUS MASTER WITH IO-LINK INTERFACE



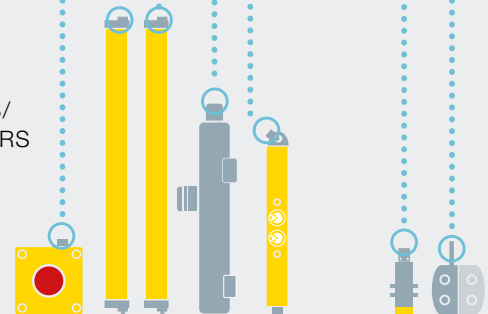
IO-LINK DEVICES



SAFETY-OVER-IO-LINK DEVICE*



SAFETY SENSORS/ACTUATORS



*for use only with Profinet

IO-Link provides a high standardization factor

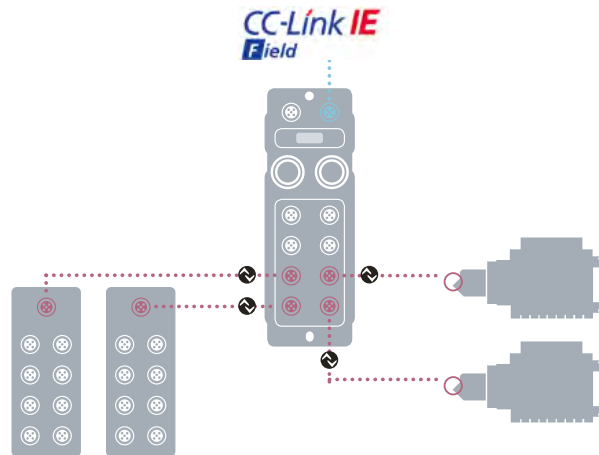
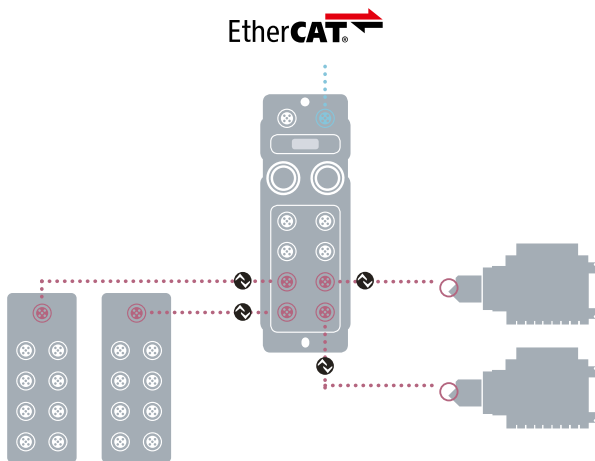
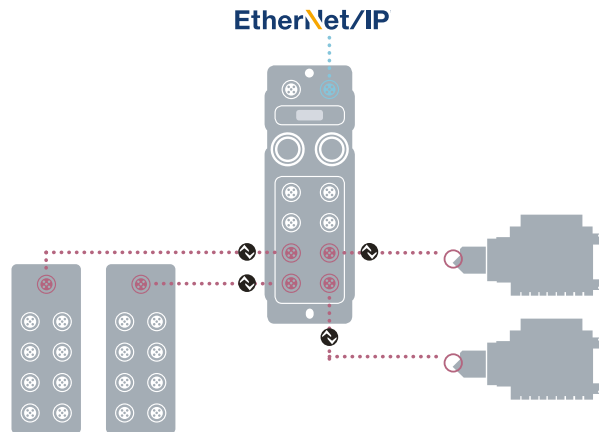
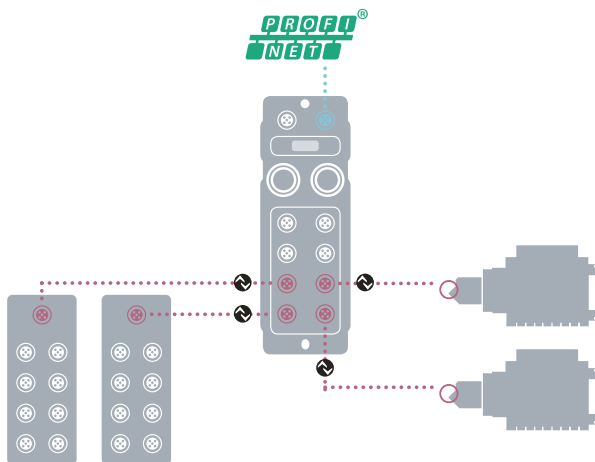
Migrate fieldbuses

Plug and play in all networks

As a systems and machine builder, you market and sell your products around the globe. This means your products have to adapt to the conditions of very different countries and be tuned to very different networks.

No matter what countries you are active in, IO-Link provides one concept for field installation for various markets: Profibus, Profinet, Devicenet, Ethernet/IP, EtherCAT, CC-Link or CC-Link IE/Field.

To adapt the bus system, simply change out the master and continue working seamlessly with virtually identical schematics – without any added effort.



A simple M12 connection is all you need

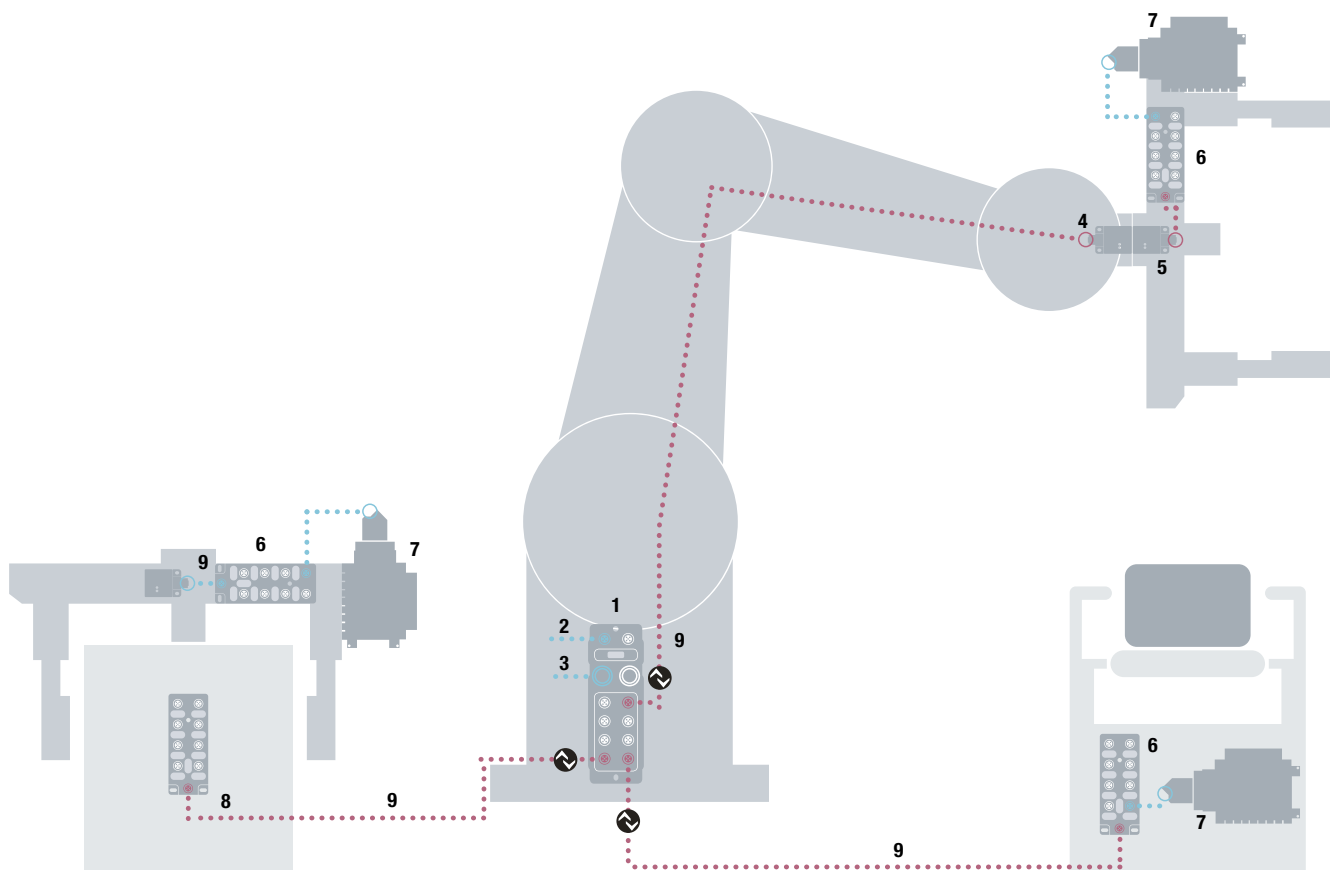
Automate robots

Profit from minimal downtime

Modern robot systems require numerous sensors – particularly robot arms, which only tolerate lightweight sensors in order to maintain proper dynamics. Traditional wiring of multiple cables can make it difficult to achieve high efficiency and increases project costs.

Thanks to IO-Link, difficulties like this are a thing of the past. A standard M12 connection is all you need to ensure the function of the robot – no need for special connectors. An I/O module and valve terminal are easily linked and complexity is reduced.

Inductive couplers provide you with quick tool changes because they send both data and power at the same time over an air gap. The plug-and-play style allows for prompt connection of the new tool and is automatically parameterized by the controller via IO-Link. You no longer struggle with cable breaks, but rather profit from high flexibility and minimal downtime.



- | | |
|---|--|
| 1 IO-Link master | 6 M12 sensor hub, configurable, I/O with expansion |
| 2 Fieldbus cable | 7 IO-Link valve interface (Festo, Bosch Rexroth) |
| 3 Power cable, 7/8" | 8 M12 sensor hub, 16 inputs, PNP |
| 4 Inductive coupler, 40 × 40 mm, Base, IO-Link, bi-directional | 9 Single-ended cordset, M12 → M12, 4-conductor |
| 5 Inductive coupler 40 × 40 mm, Remote, IO-Link, bi-directional | |

Expand decentralization

Consolidate and gather I/O signals

Minimize critical installations

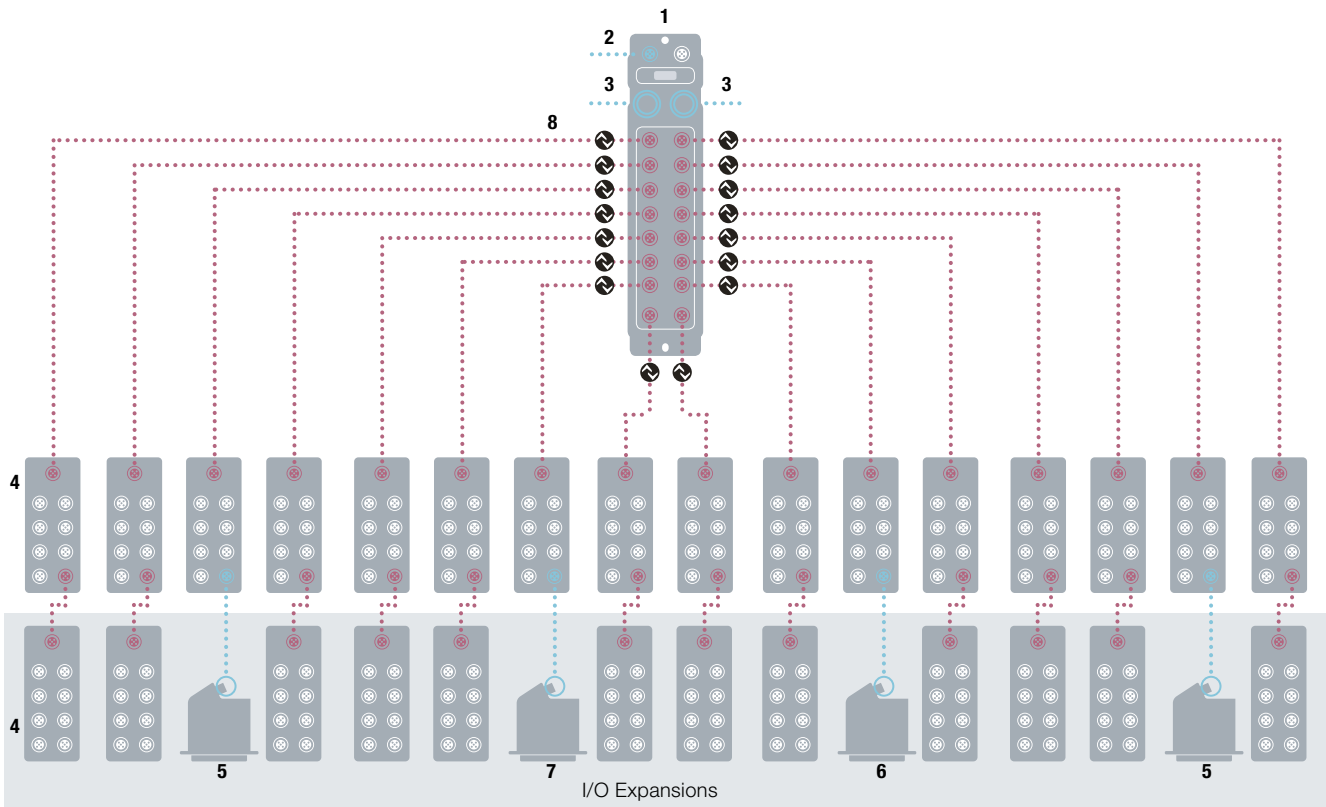
With IO-Link, you need only a node/IP address to transmit the data of up to 496 inputs/outputs. Compression of the data allows you to preserve the valuable addresses and minimize critical installations.

The IO-Link actuator/sensor hub with its expansion port sets the standard. Combined with the IO-Link master, it equips you with completely new options for expanding the decentralized structure of your network topology by using the port to connect valve interfaces or an additional IO-Link hub. Simply, it is plug and play. Additional inputs and outputs are processed this easily as well with no additional master.

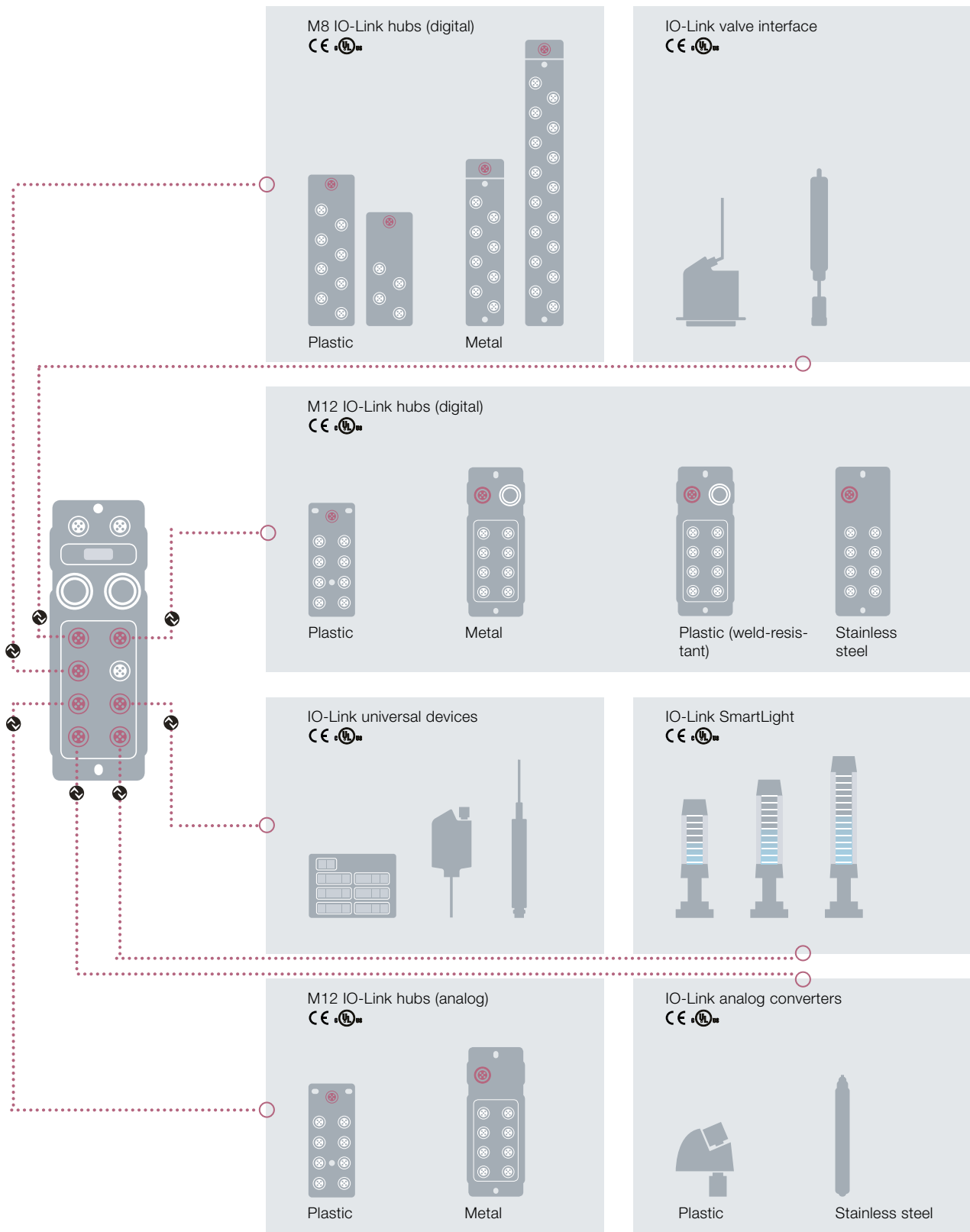
Configure up to 496 I/O's

A 16x IO-Link master allows up to 496 I/Os to be configured. The range is doubled and exponential cost savings are realized.

All you need to implement this network structure is a standard, unshielded cable. You maintain access to the entire IO-Link functionality while reducing your wiring effort and saving money.



- 1 IO-Link master
- 2 Fieldbus cable
- 3 Power cable, 7/8"
- 4 IO-Link sensor hub, configurable, I/O with expansion
- 5 IO-Link valve interface (Festo, Bosch Rexroth)
- 6 IO-Link valve interface (SMC, Parker, Norgren)
- 7 IO-Link valve interface (Numatics)
- 8 Single-ended cordset, M12 → M12, 4-conductor



Maximum transparency for the optimal process

Track data

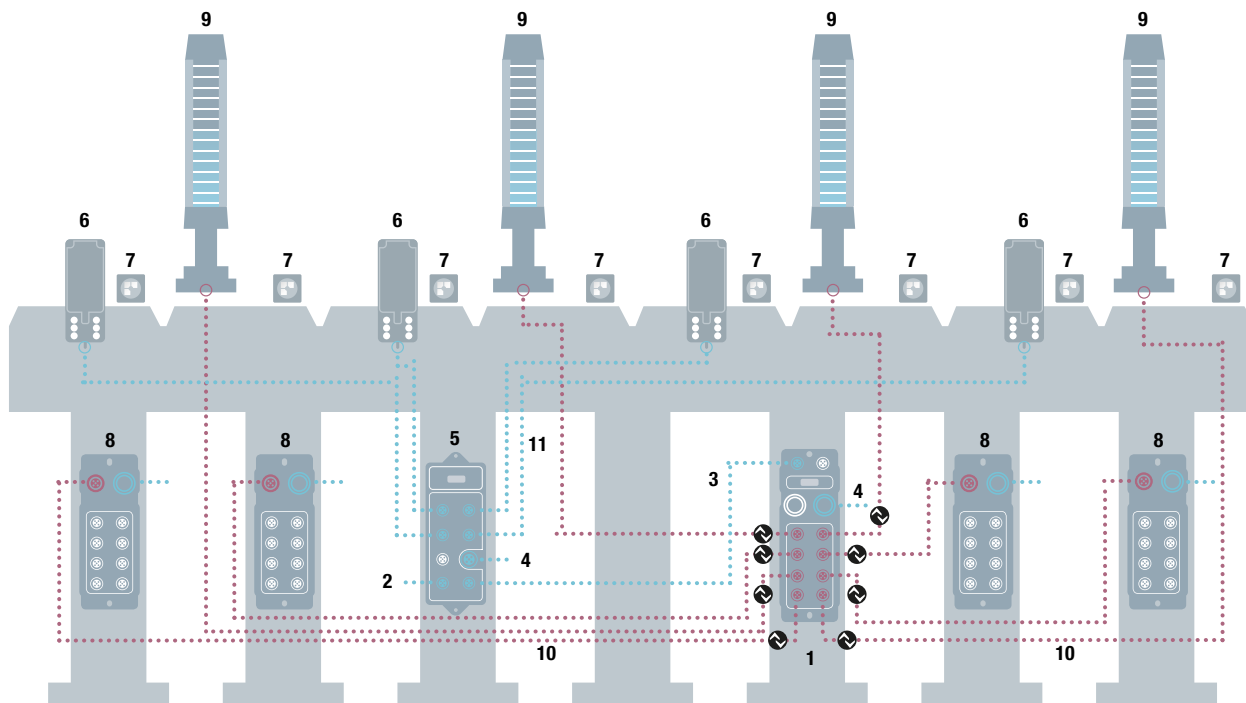
Ensure quality

The intelligent combination of RFID and sensors with IO-Link makes it possible to cost-effectively handle your identification requirements and process signals at the same time.

When it comes to quality assurance, RFID systems record the entire production sequence and make it traceable in real time. The data is documented directly on the workpiece or pallet, regardless of ambient conditions, read distances or technologies (low-frequency – LF, high-frequency – HF, ultra-high frequency – UHF).

Depending on your data volume and speed, we offer different devices including BIS V processor units for fast processing of high data volumes. And if you need to run LF, HF and UHF read/write heads simultaneously, the BIS V lets you process all these RFID technologies at the same time.

An IO-Link master is appropriate for standard ID tasks to connect I/O units or IO-Link-capable sensors/actuators. Each individual production step, for example, can be displayed using the SmartLight tower light.



- 1 Profinet, 8 × IO-Link master
- 2 Profinet cable, M12 → RJ45, shielded
- 3 Profinet cable, M12 → M12, shielded
- 4 Power cable, 7/8", 4-conductor
- 5 Industrial RFID, Profinet processor unit 4x, 1 × IO-Link master
- 6 Industrial RFID, read/write head
- 7 Industrial RFID, data carrier
- 8 M12 sensor hub (metal), 16 I/O, configurable
- 9 IO-Link SmartLight, 3 segments
- 10 Single-ended cordset, M12 → M12, 4-conductor
- 11 RFID single-ended cordset, M12 → M14, shielded, 4-conductor

Correctly feed process media

Measure, control and regulate

Example with oil supply for a hydraulic cylinder

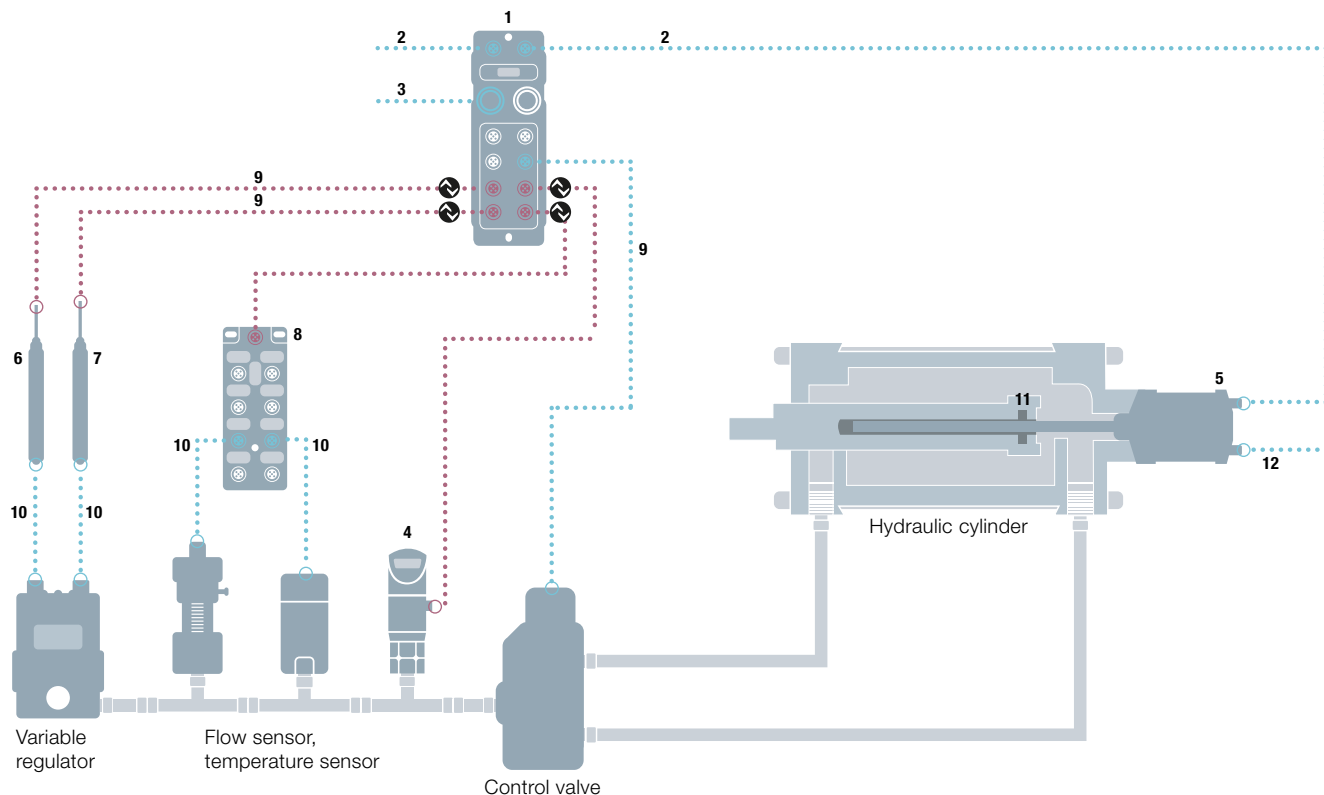
IO-Link and simple, unshielded, standard cables ensure correct feeding of your process media. An IO-Link master is all you need to receive and pass along the data. You can use a single bus address for the entire control circuit of the master assembly.

For example, you can automatically measure, control and regulate all the relevant components for the oil feed of a hydraulic cylinder – pressure, temperature and flow sensors, control valve and the hydraulic cylinder itself – which ensures the optimum oil flow.

The sensors measure the flow, temperature and pressure of the oil. This data is continuously passed to the variable regulator through the master, with the regulator comparing the data with the nominal value and initiating, if necessary, a readjustment and providing feedback to the controller.

Correct control of the hydraulic cylinder by the control valve is now possible. The master also passes this information to the controller, which in turn generates the positioning commands for the hydraulic cylinder. These commands then arrive where they are needed through the master.

Another great feature: you can wire the entire control circuit with unshielded, 3- or 4-conductor cables.



- 1 Profinet, 4 × IO-Link master
- 2 Profinet cable, M12 → M12, shielded
- 3 Power cable, 7/8", 4-conductor
- 4 IO-Link pressure sensor
- 5 Profinet transducer BTL7, length max. 7620 mm
- 6 IO-Link- analog converter, input 0...10 V DC

- 7 IO-Link analog converter, output 0...10 V DC
- 8 M12 sensor hub, analog 0...10 V DC, digital
- 9 Single-ended cordset, M12 → M12, 4-conductor
- 10 Single-ended cordset, M12 → M12, shielded, 4-conductor
- 11 Magnet for transducer
- 12 Power cable, M12, 4-conductor

Continuous diagnostics of the operating states

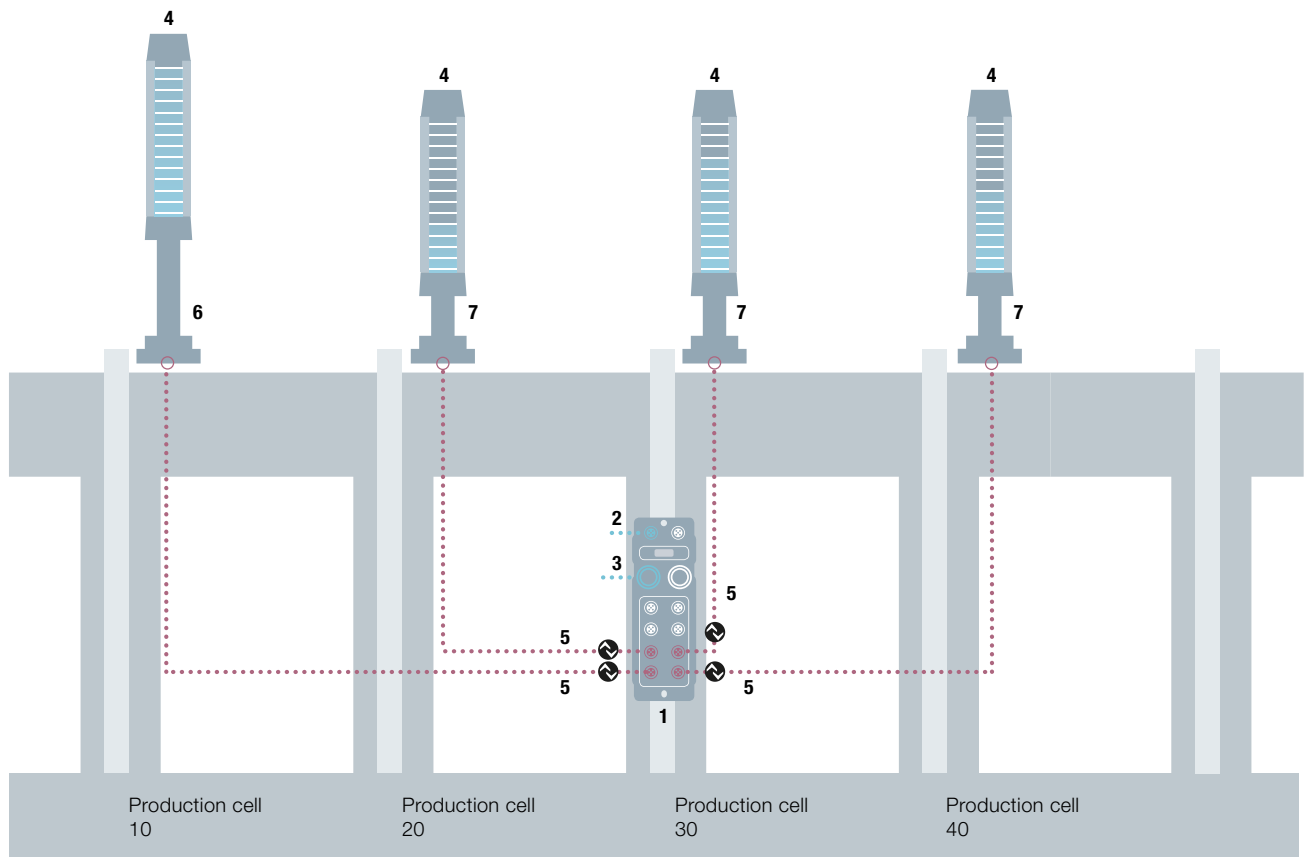
Signaling

Setup without mechanical reconfiguring

If you need seamless visualization of the production sequence on your production line, the SmartLight signal tower light provides the perfect solution. The SmartLight displays trends and tendencies, so that you can continually monitor various stages. This optimizes cycle times and gives early indication of any possible bottlenecks or maintenance duties.

The various modes – run light, stack light and level mode – can be set without making any mechanical changes. Use the controller to choose between running light, color gradient or the display of up to five color segments.

Just as important: the SmartLight is simple to retrofit.



- 1 IO-Link Master
- 2 Fieldbus cable
- 3 Power cable, 7/8"
- 4 IO-Link SmartLight, 5 segments and buzzer
- 5 Single-ended cordset, M12 → M12, 4-conductor
- 6 Stand for SmartLight, 400 mm high
- 7 Stand for SmartLight, 100 mm high

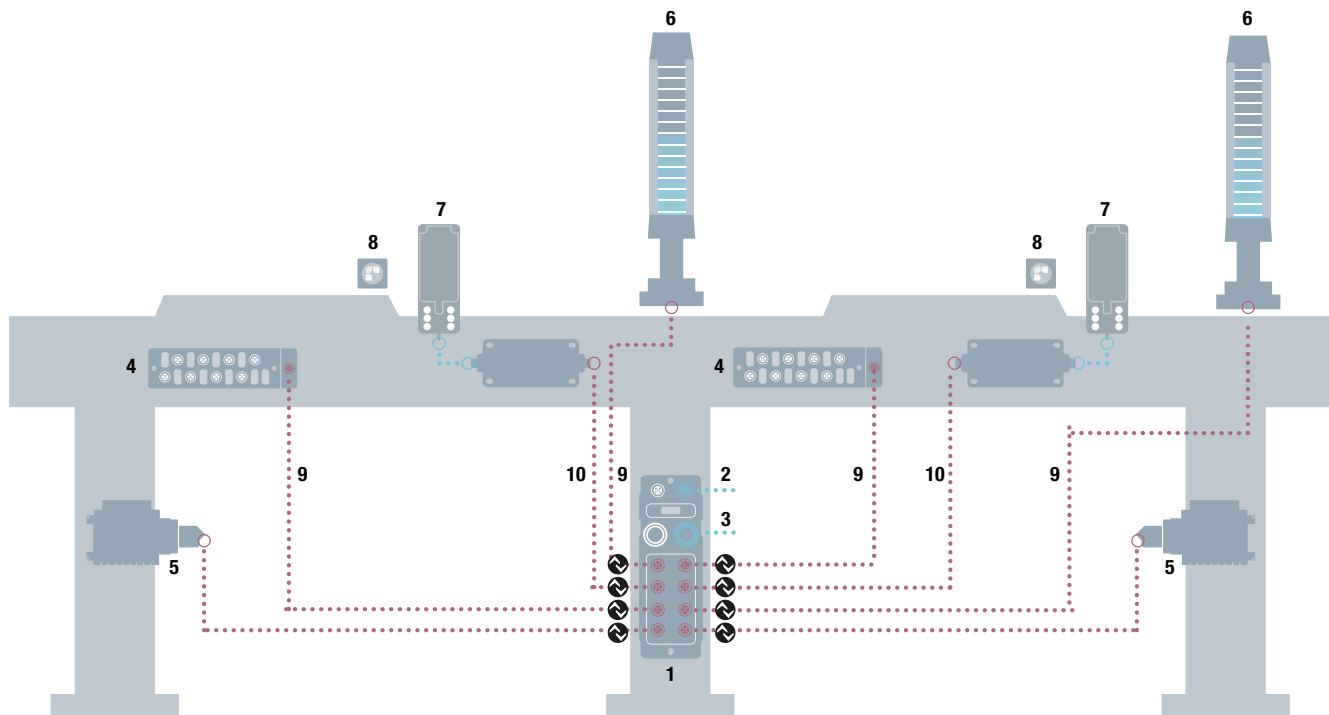
A network distributor for complex tasks

Handling and assembly

Reduce the number of needed modules

Whether you are bundling signals, switching pneumatics, recording and tracking data, or want to display operating conditions with the SmartLight tower light, one network distributor used as a remote data compressor can handle all of your complex tasks.

One IO-Link master per production segment is all you need; it handles all the analog functions, RFID applications, the valve control, signaling and the use of remote I/O. This allows you to reduce various modules and select and deselect equipment options. This affords you great flexibility and saves you cash. At the same time, an IO-Link master is extremely powerful and user-friendly with additional features like a display, integrated switch and web server.



- 1 IO-Link master
- 2 Fieldbus cable
- 3 Power cable, 7/8"
- 4 M8 sensor hub, 16 inputs, PNP
- 5 IO-Link valve interface (Festo, Bosch Rexroth)
- 6 IO-Link SmartLight, 3 segments
- 7 Industrial RFID, read/write head
- 8 Industrial RFID, data carrier
- 9 Single-ended cordset, M12 → M12, 4-conductor
- 10 RFID single-ended cordset, M12 → M14, shielded, 4-conductor

In the entire production process

WE SPEAK IO-LINK

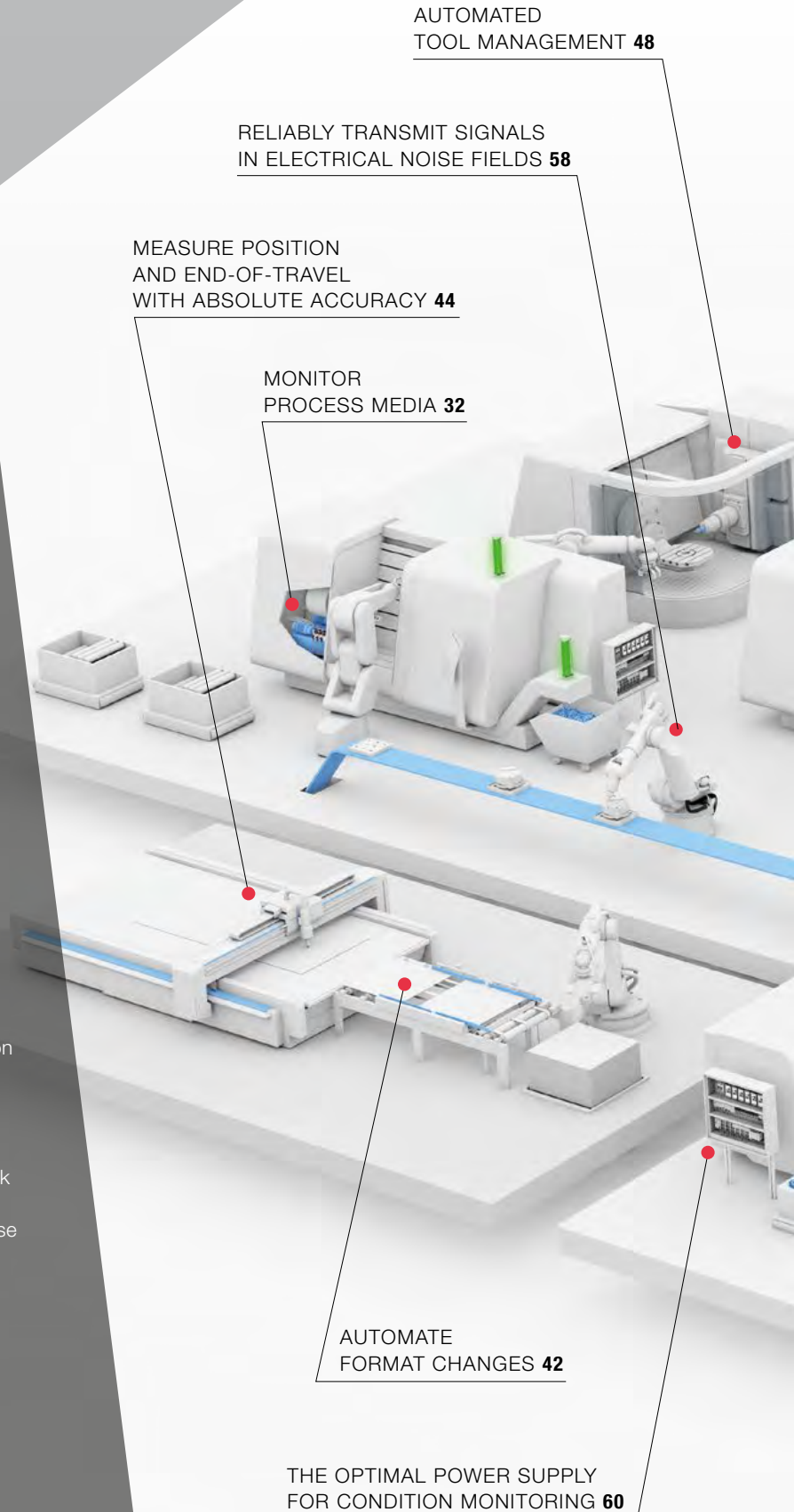
B *innovating automation*

Balluff IO-Link ensures transparency for all areas of automation – logistics, service, production, assembly, inspection and packaging – and for every single application including fluids, identification, travel measurement and object detection.

At Balluff you get holistic IO-Link solutions with high performance IO-Link sensors and the best IO-Link network and connectivity. Balluff speaks IO-Link in every field and with all principles of operation, so you have access to these IO-Link advantages throughout the entire system.

- Easy to install
- Requirements-based maintenance
- Efficient operation
- Highest machine availability

This lets you exploit all the possibilities of this digital communication standard. In the following you will see specifically all the ways you can use IO-Link performance.



AUTOMATED
TOOL MANAGEMENT **48**

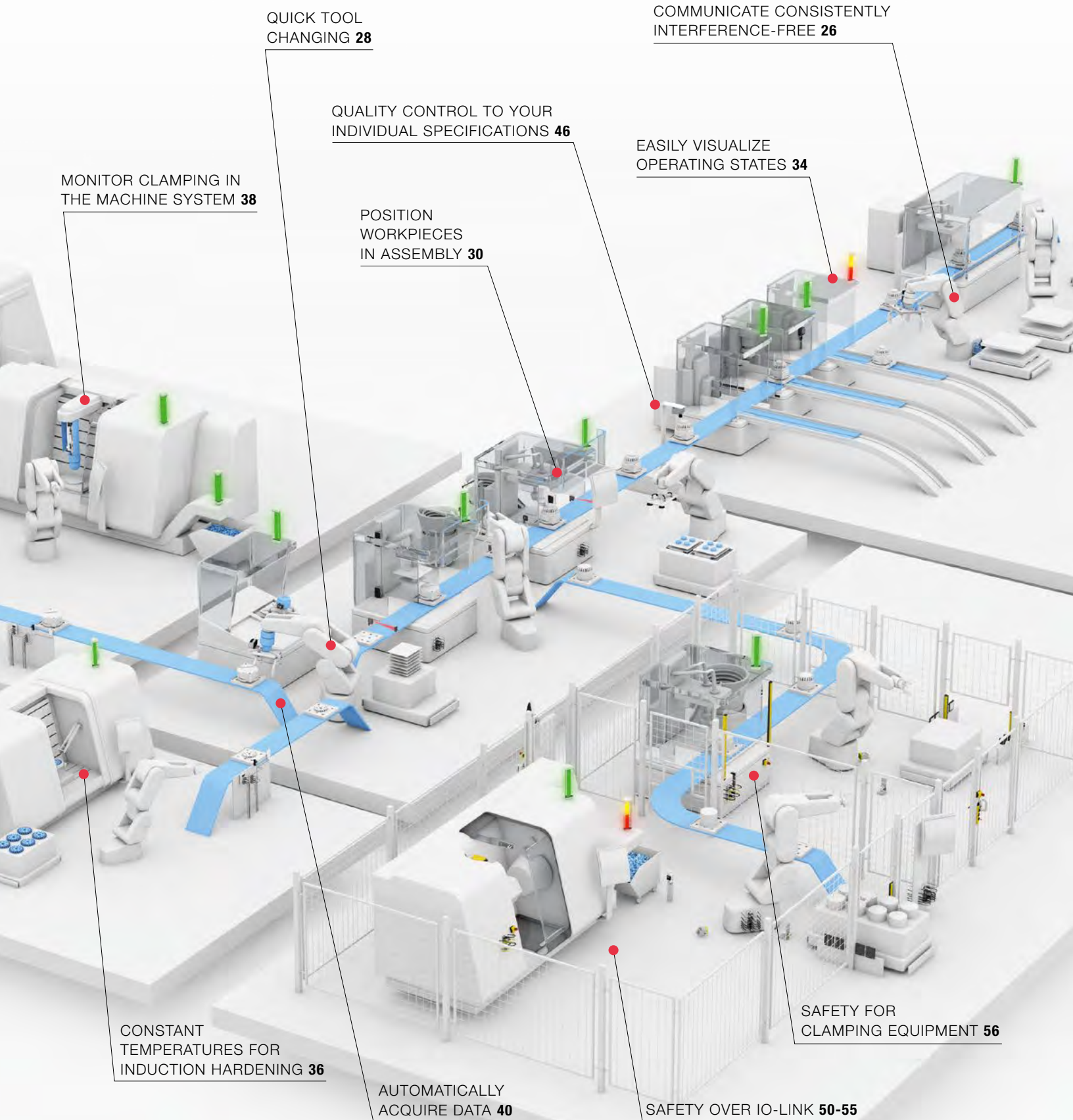
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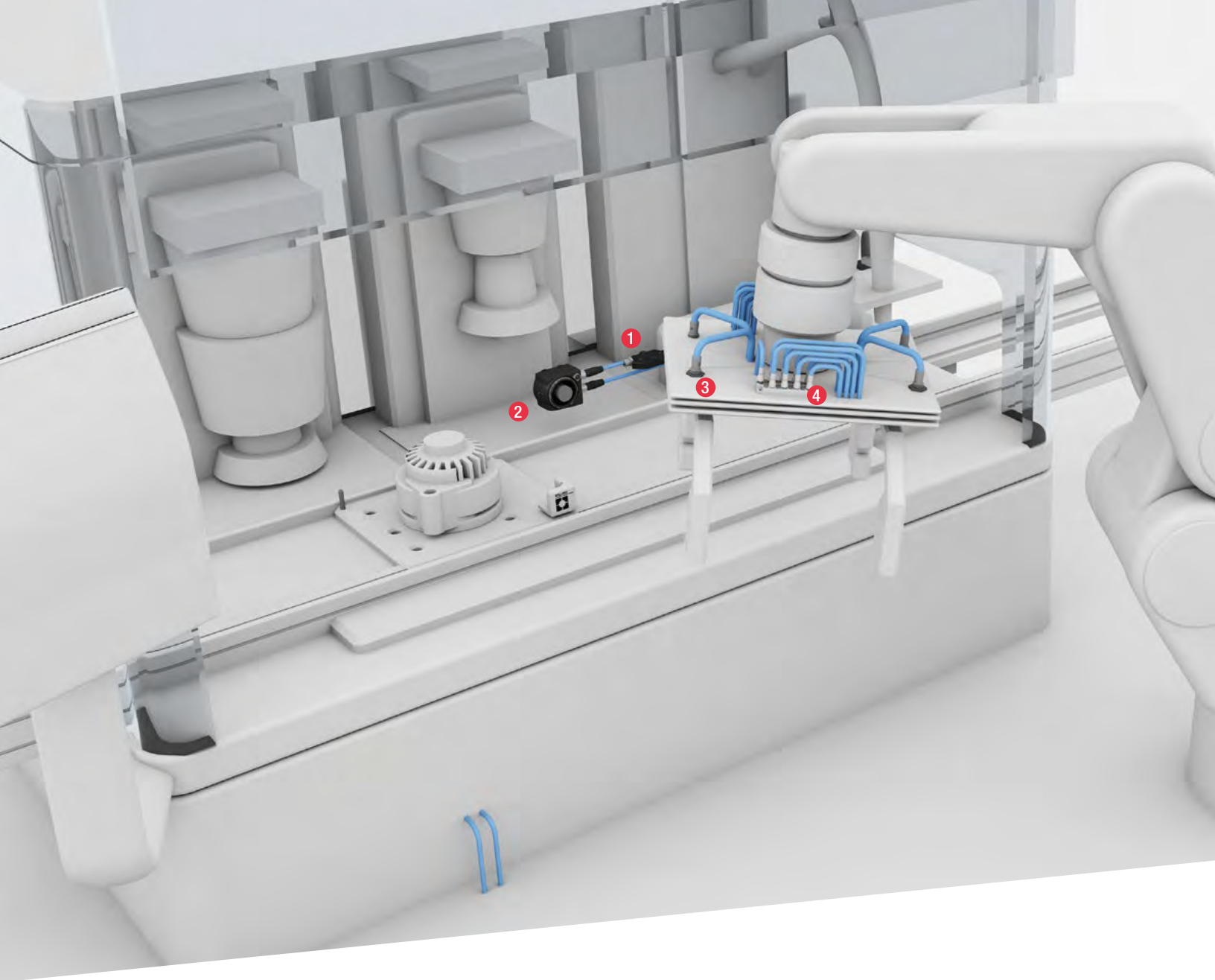
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AUTOMATICALLY
ACQUIRE DATA **40**

SAFETY OVER IO-LINK **50-55**

SAFETY FOR
CLAMPING EQUIPMENT **56**



All devices become IO-Link capable

Modern robotics equipment requires many sensors – especially in the robot arm which, because of the dynamics and energy consumption, still needs to have as little mass as possible. Another difficulty is the cumbersome wiring of multi-conductor cables.

Not so with IO-Link because this digital communication standard requires only a traditional industrial cable which is simple to install. IO-Link also ensures noise immunity with intelligent devices without the need for shielded cables.

Whether you use Profibus/Profinet over CC-Link/CC-Link IE-Field, DeviceNet or Ethernet/IP and EtherCAT, our IO-Link masters let you use IO-Link with any controller. After all, IO-Link is fieldbus-neutral. With IO-Link you can bring a wide variety of devices together so that even the most complex tasks, including robotics and beyond, can be simply mastered with the greatest possible flexibility.

The universal IO-Link interface integrates intelligent devices into the controller. You can also integrate standard analog sensors into the controller using our IO-Link analog converters. Or you can simply connect them to our IO-Link hubs, which can digitize the analog input signals and pass them on to the IO-Link master. With the IO-Link master you can also control actuators and valve terminals. Simply use the valve interface to connect the valve terminal to the IO-Link master. Here again, all you need is a standard cable to make use of the full functionality.

A Balluff IO-Link sensor hub bundles the signals from up to 16 sensors or actuators. With our cascadable hubs with expansion port you can connect an additional sensor hub or a valve terminal. If these hubs are cascaded with an additional hub and connected to our 16x IO-Link master, a module transmits up to 496 inputs/outputs.



Simplify network topology

Communicate consistently interference-free

- 1 Universal IO-Link interfaces
- 2 Vision sensors
- 3 IO-Link ultrasonic sensors
- 4 IO-Link sensor/actuator hubs
- 5 IO-Link masters
- 6 IO-Link valve interface
- 7 Photoelectric IO-Link multifunction sensors

Contactlessly transmit power and data

Quick tool changing

Maximum flexibility since the robot radius is increased to 360 degrees

Inductive couplers are a windfall for robotics because they send both data and power at the same time over an air gap. How do you benefit? Greatly, and in many ways – the risk of cable breaks is fully precluded, mechanical contacting of mechanical connectors is eliminated, and the robot has a continuous radius of movement of 360 degrees.

Our inductive couplers with IO-Link guarantee you fast gripper changes and increase the up-time of your system. This is because the signal is transmitted directly following the gripper change so that production can continue without interruption. The speed and flexibility support frequent format changes. The result is that you can produce even small batches efficiently. Another attractive feature: no mechanical wear means inductive couplers are maintenance-free.

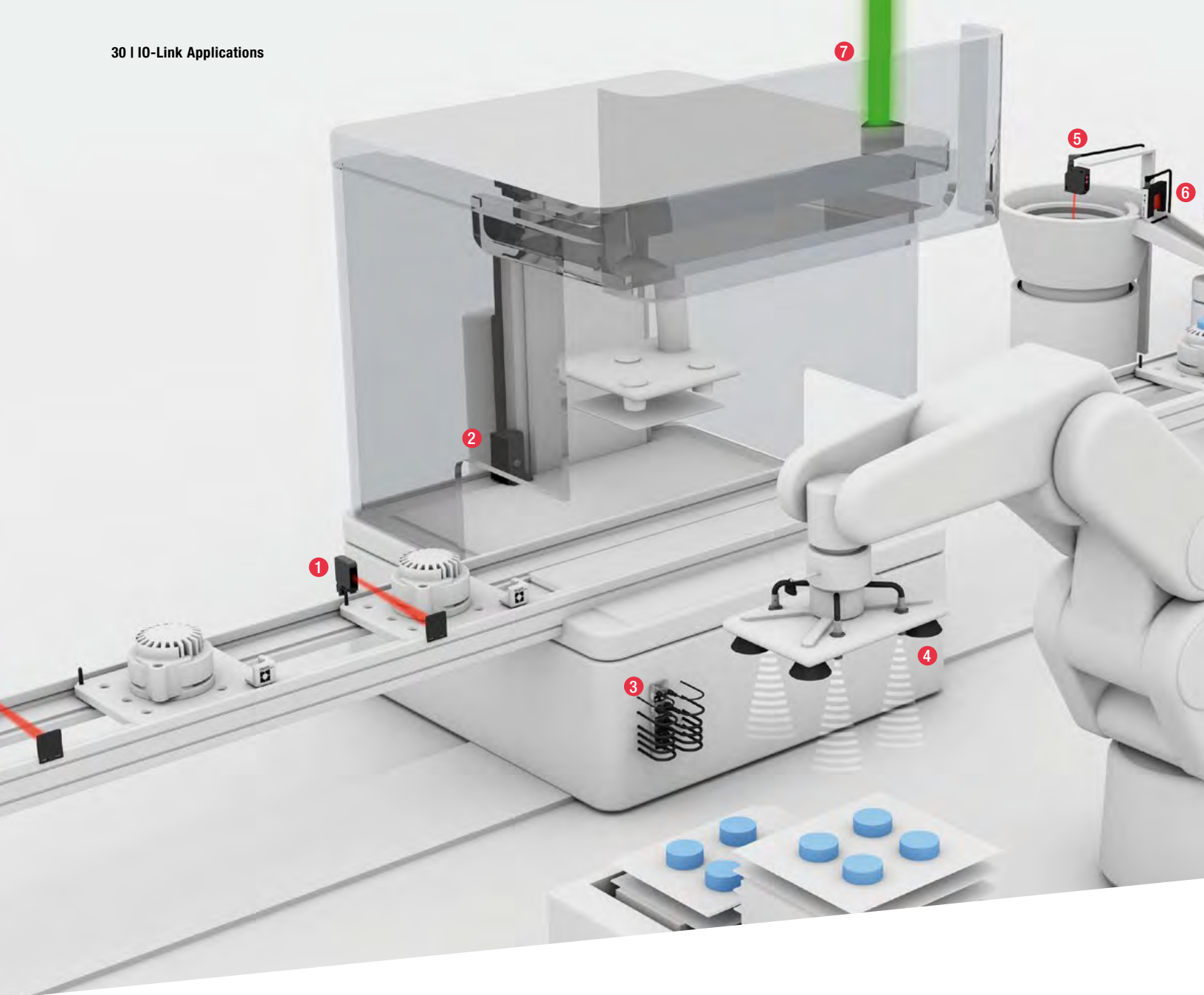
The quick-disconnect units provide the greatest flexibility for your machine design. Even hard-to-access components are simple to connect with IO-Link. This is because all IO-Link-capable devices now connect to the IO-Link master and to the controller flexibly and without contact.

The bi-directional inductive data couplers allow the data to be sent in both directions, and you can simultaneously control actuators and valve terminals while collecting signals. These variants support the full IO-Link functionality so that intelligent sensors and actuators can be configured and diagnosed without contact.

- 1 Inductive couplers (style Q40)
- 2 IO-Link SmartLight







Smart diagnostics increase reliability

When it comes to Industry 4.0, generating, transporting and processing information are indispensable parts of the process. This makes local, intelligent sensors all the more important. Our photoelectric, multi-function sensors detect actual operating states while collecting and processing information. And via IO-Link they provide far more data than just the switching signal.

The BOS 21M ADCAP multi-function sensor with red light is ideal for optimally positioning your workpieces for assembly. For the best functionality, you can use IO-Link to conveniently select between four different sensor modes. This allows you to utilize the best and most reliable detection method depending on your application.

The sensor simultaneously sends diagnostic data as well. Now you can evaluate the light emissivity value provided and detect increasing contamination of the sensor. This permits

maintenance and cleaning schedules to be designed so the sensor is always cleaned at just the right time before failures can occur. You also know whether the sensors are still optimally adjusted after a cleaning.

The BOS 21M ADCAP can do even more: it continuously monitors light intensity and brightness of the LED emitter beam so that faulty switching of the sensor is virtually eliminated. The built-in count function with various counting and reset modes also allows the quantity to be checked in the controller without any additional programming effort.

If your detection requirements are even more demanding, we offer our photoelectric, high-precision laser BOS 21M HPL with numerous additional functions. Thanks to various detection and processing modes, this high-performer also detects complex objects and the smallest details with absolute precision.



Full transparency all the time

Position workpieces in assembly

- 1 Photoelectric IO-Link multifunction sensors
- 2 Multiple position switches
- 3 IO-Link masters
- 4 IO-Link ultrasonic sensors
- 5 IO-Link color sensor
- 6 IO-Link fork sensor
- 7 IO-Link SmartLight



For high production quality

Monitor process media

Plug-and-play sensor replacement: high machine availability

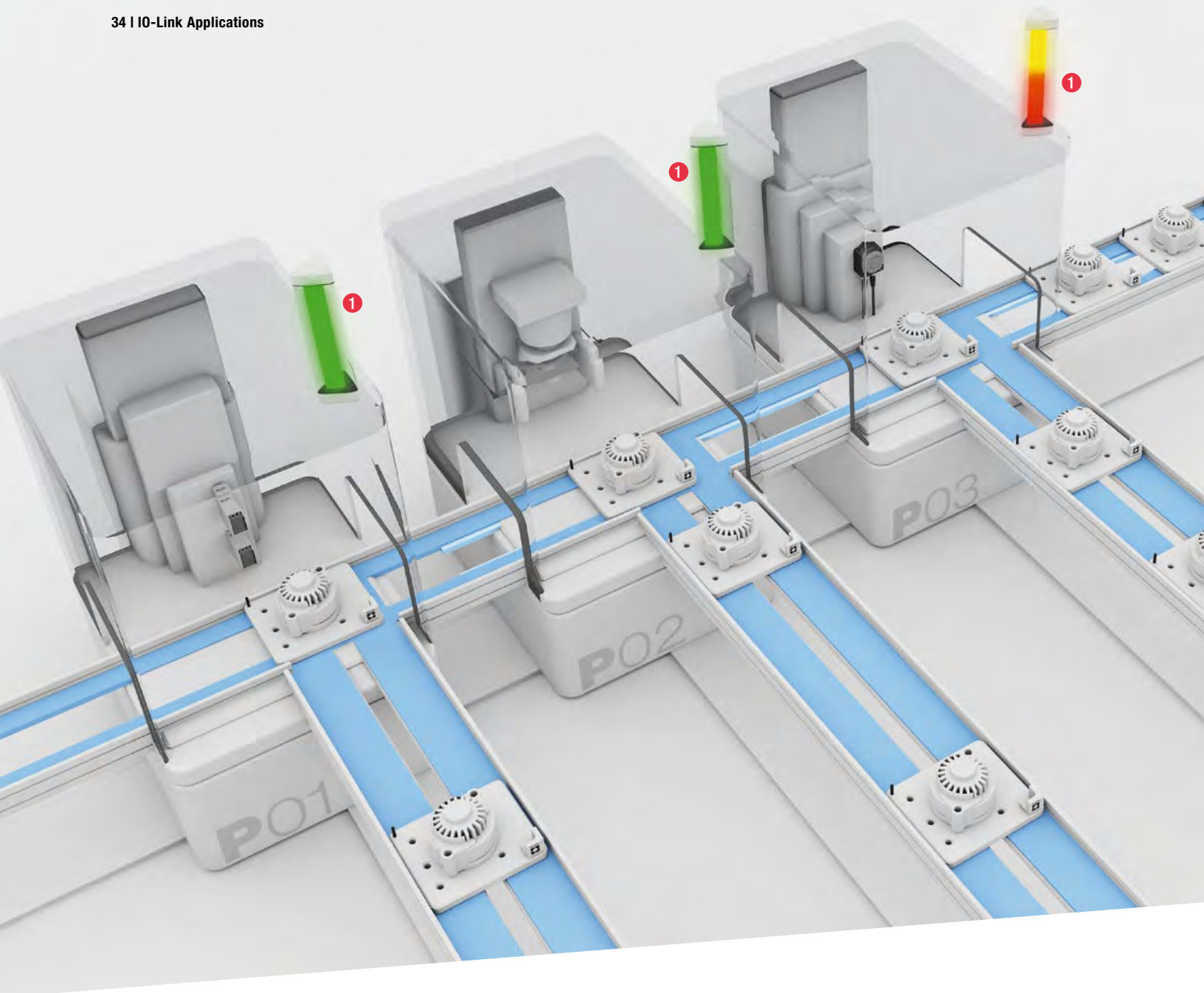
Pressure sensors are indispensable when you need to monitor process media such as coolants and lubricants, hydraulic fluids and pneumatics. The system pressure affects things such as the surface quality when processing workpieces. Continuous and exact regulation of the pressure is provided by our IO-Link pressure sensors, which are continuously transmitting their measurement values and data to the controller.

Pressure sensors also ensure the best results on a machining center where they provide clamping distance monitoring to guarantee secure holding of the workpiece and tool in the lathe.

IO-Link pressure sensors are configured via the controller, so that they can be installed where the action is or in hard-to-reach places for measurements and perfectly matched to the machine design. This guarantees you fast and precise results and reduces your costs, since you can now reduce cumbersome mechanical installation of hydraulic lines to a minimum.

IO-Link pressure sensors ensure that you enjoy the greatest possible machine up-time. Replacing a sensor is plug-and-play, since the data for the replaced sensor is automatically loaded into the IO-Link master.

Depending on your requirements, you can choose between IO-Link pressure sensors with display and IO-Link pressure transmitters without display. This ensures you the best and most economical solution for your workplace.



One light. Many functions. Unlimited uses.

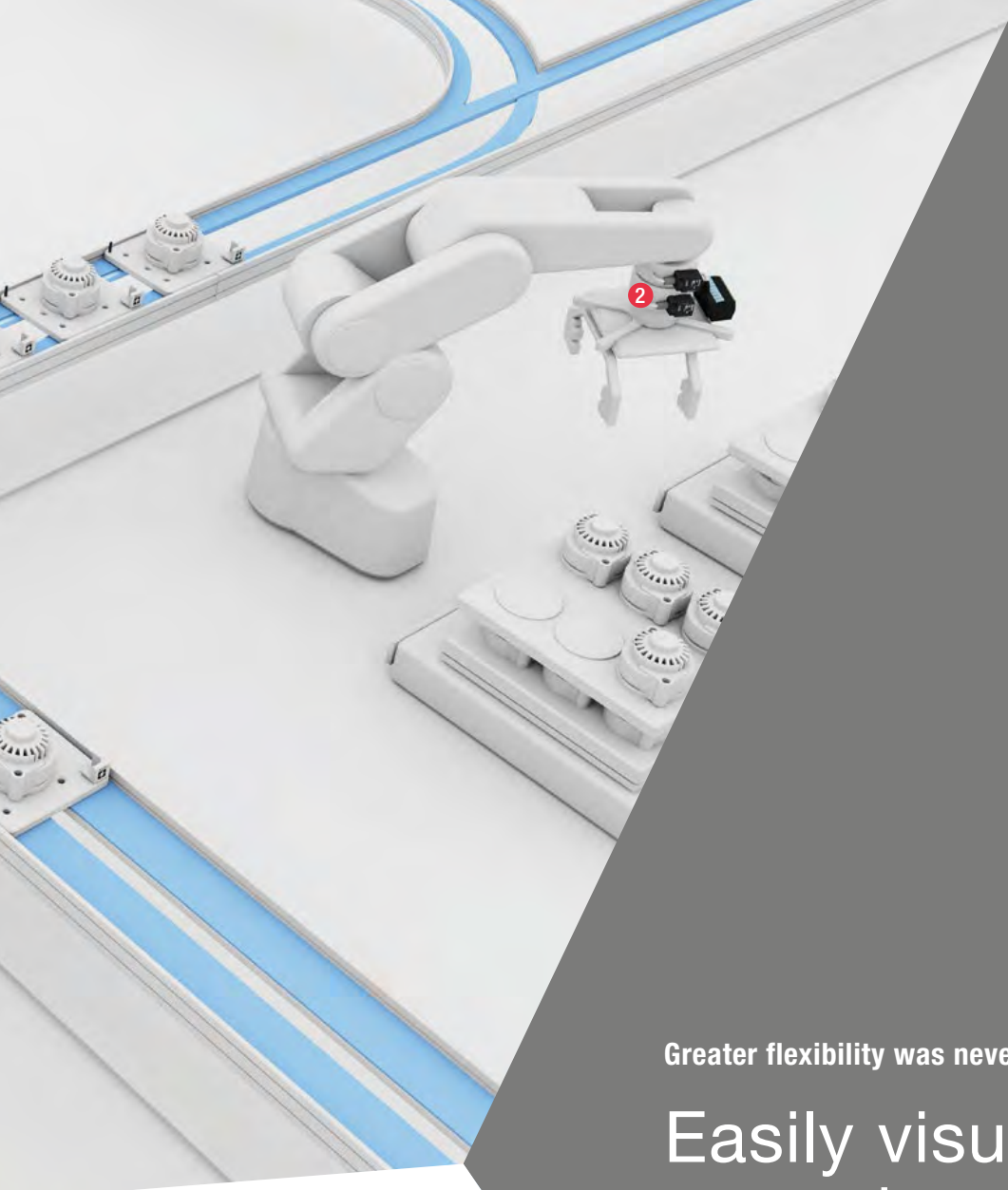
It's not yet possible to foresee all the demands of the smart factory. But to visualize your automation, you can get a modern IO-Link device today that has virtually unlimited application and is ideally equipped for the future.

The LED stack light with IO-Link interface offers you a previously unimagined flexibility because with the Balluff SmartLight you can represent operating states in detail. In addition, you can even see trends and progressions. The SmartLight features three different modes:

- Segment mode: Display a wide range of color signals in freely configurable segments
- Level mode: Color progression display for representing variables such as level, position or temperature
- Run light mode: An automatic run light with freely programmable foreground and background color

The best part is you can change to any mode on the fly. Colors can also be changed while running because you configure the SmartLight simply from the controller. So forget the cumbersome mechanical reconfiguration of traditional stack lights. Unlike those older systems, you can individually specify the colors and zones for number, size and color definition.

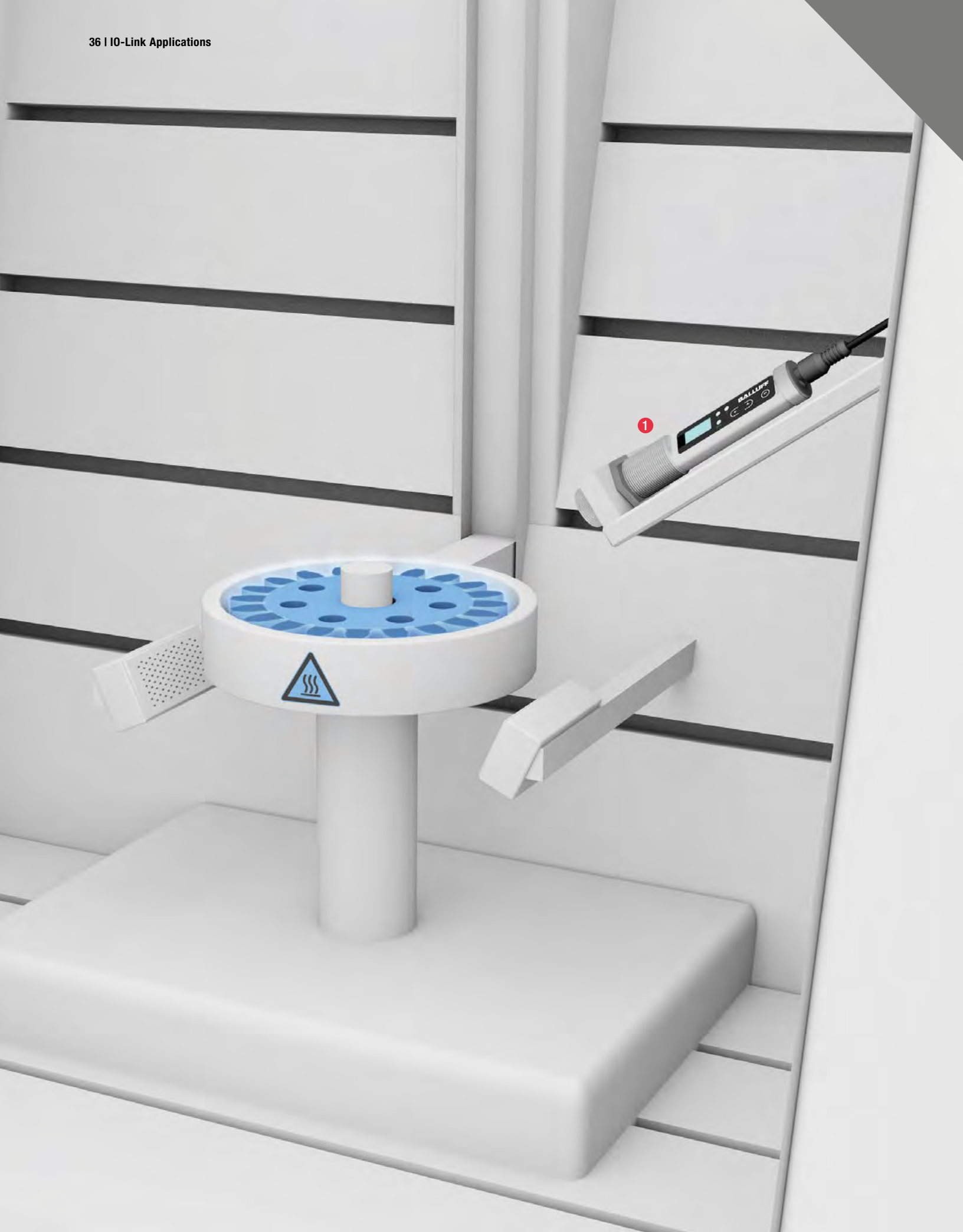
Like all IO-Link devices, the SmartLight is simple to connect and install. A 3-conductor sensor cable is all you need to quickly connect it to your system and have immediate access to the full functionality.



Greater flexibility was never easier

Easily visualize operating states

- 1 IO-Link SmartLight
- 2 Inductive couplers (style Q40)



Reliable condition monitoring: high product quality

Constant temperatures for induction hardening

Sensor right where the action is

Monitoring temperatures during the hardening process is extremely important for not damaging the workpiece and ensuring the required product quality. Whether you process your parts by annealing or induction hardening, our infrared temperature sensors will help give you full control over your quality. Our sensors in the rugged M30 stainless steel housing handle this job reliably and without contact. And at a temperature range from 250 to 1250 °C, they detect hot objects even while moving. Our temperature sensors make it possible to significantly reduce the process time.

An important value in non-contact temperature detection is the emissivity. You can teach this with just a key press if you know the object temperature. This is simpler than determining the exact emissivity values and adds the advantage of setting up the machine in a much shorter time.

IO-Link lets you install the non-contact sensors just where they are needed, since you can configure all the functions and parameters remotely from the controller. No setting changes are necessary at the sensor location when products are changed. The appropriate configuration sets can be updated and loaded at any time via IO-Link.

This communication standard enables consistent diagnostics. You can query the device status at any time through the IO-Link interface. In addition, the information related to ambient conditions provided by the sensor via IO-Link can be logged and documented, including the temperature values for the hot workpieces.

Continual, non-contact linear position measurement

Monitoring clamping in the machine system

Greatest process security – even in a harsh industrial environment

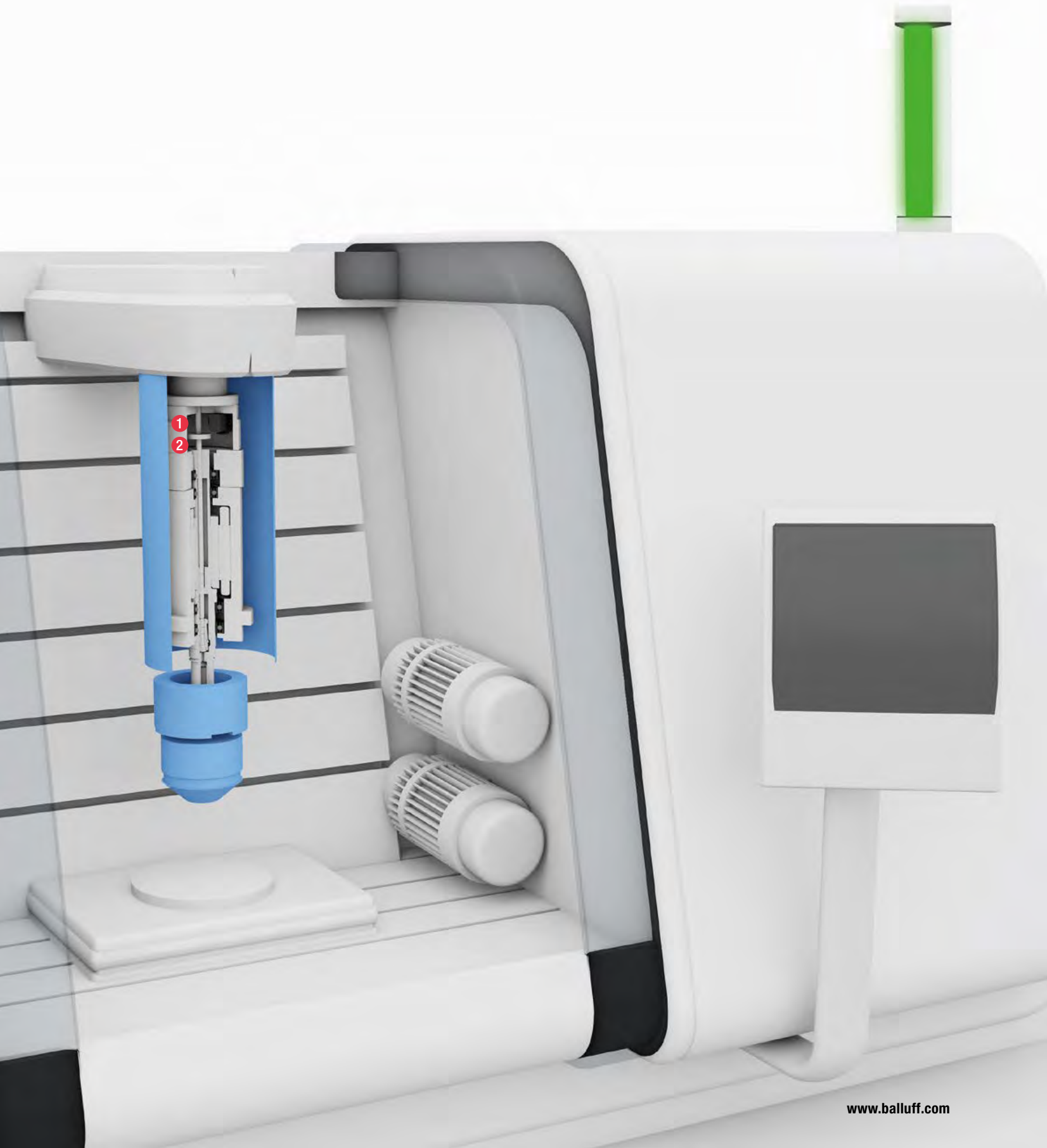
Compact, precise tool spindles, clamping cylinders and tool changers on a machining center play a central role in the work process. This is why reliable and wear-free monitoring of the ongoing clamping process in the machine system is so critical.

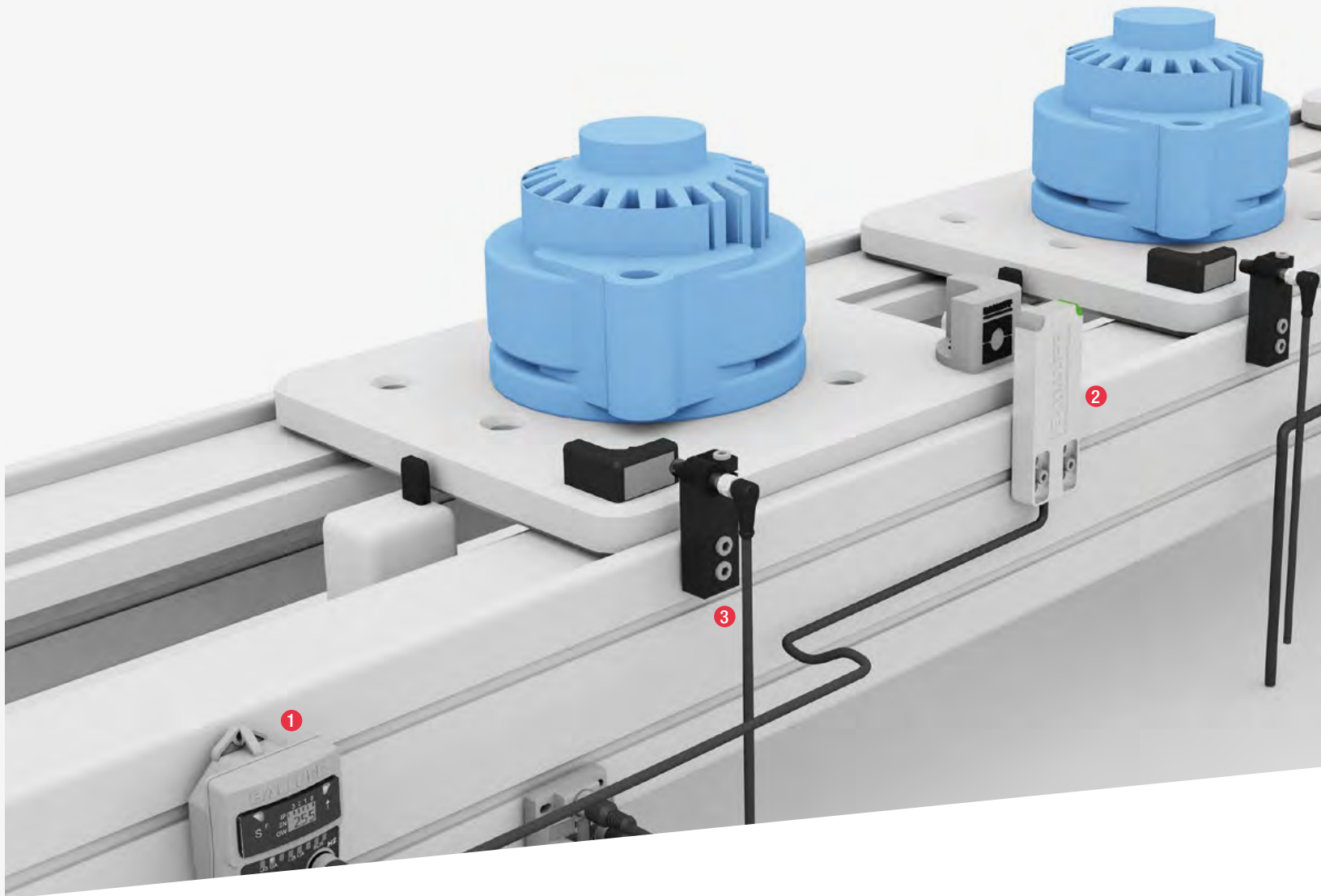
Meet this demanding challenge simply with the new IO-Link positioning system. It features an absolute measuring principle and transmits an additional out-of-range bit. This tells the controller that the target has left the measuring range, thereby increasing reliability. You can set up to three switching signals and internal temperature detection is also possible. The high linearity and precise repeat accuracy of the measuring system give you reliable results.

The non-contact measuring system in the fully potted housing will ensure the highest process reliability and automation quality even in the harshest industrial environments. Also advantageous here is the high level of electromagnetic compatibility. You can use our inductive IO-Link positioning system in many different ways thanks to its configurable measuring range. And the compact size means it can be installed even where space is at a premium.

Its digital IO-Link signal means the positioning system is guaranteed to be noise-immune even when using unshielded cables. Thanks to IO-Link, you can eliminate an analog input card.

- 1 IO-Link inductive positioning systems
- 2 IO-Link inductive distance sensors





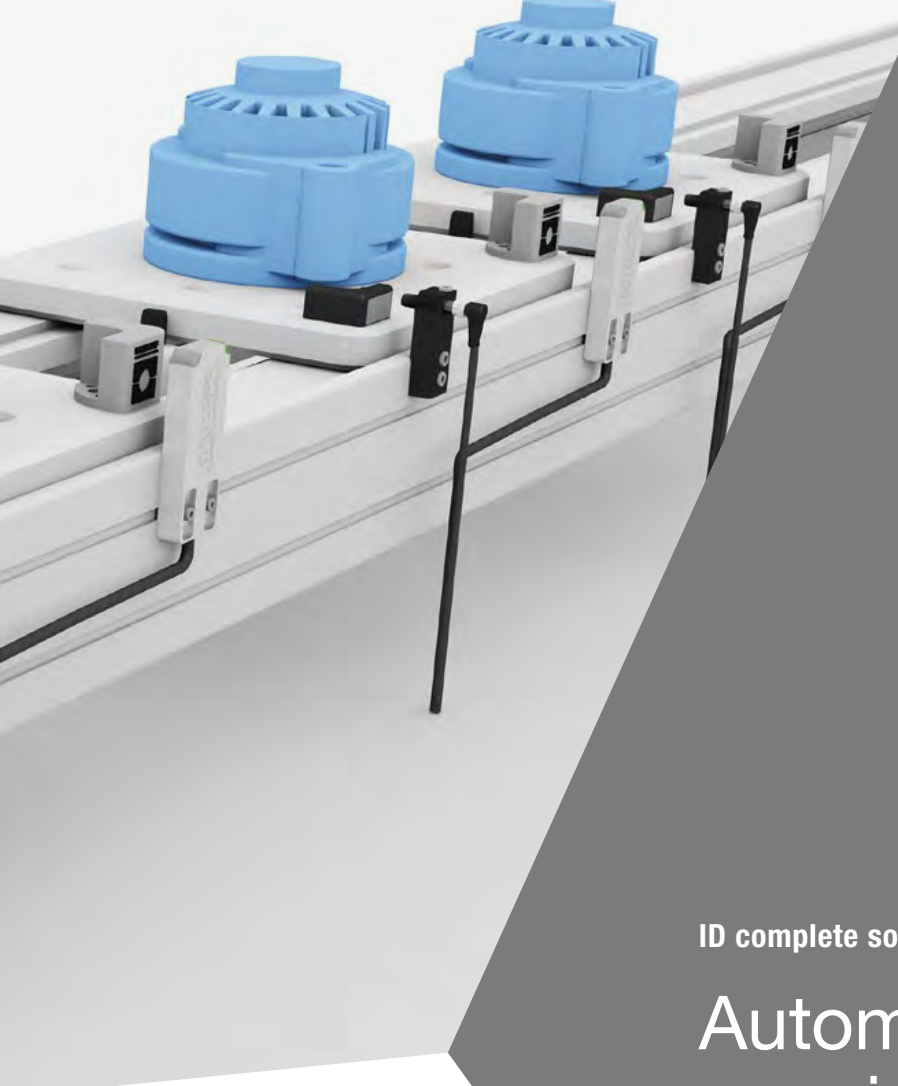
Increases product quality, optimizes the process

When your automation calls for parts tracking, there is no alternative to RFID. These self-controlling systems record and document all the data in real time. They make every production step, material used and operating resource traceable, so that corrections are possible while the process is still running. The comprehensive transparency provided by RFID represents the prerequisite for process optimization while ensuring high product quality.

Our rugged BIS V processor unit provides fast data transmission, short cycle times and increased data security in all applications. This lets you use different RFID technologies – LF, HF and UHF – at the same time on a single processor unit. Just one type of processor unit is all you need to handle any application. Whatever industry you are in, this high-performer features perfect electromagnetic compatibility and works with all common bus systems.

BIS V comes with four ports which can be individually configured and operated simultaneously with up to four read/write heads. In addition, you can connect IO-Link capable sensors and actuators or a sensor hub with up to 16 sensors to the integrated IO-Link master port. Now you can bundle sensor data in the simplest way possible in any network technology. Your network structure becomes more efficient, while you save time and money.

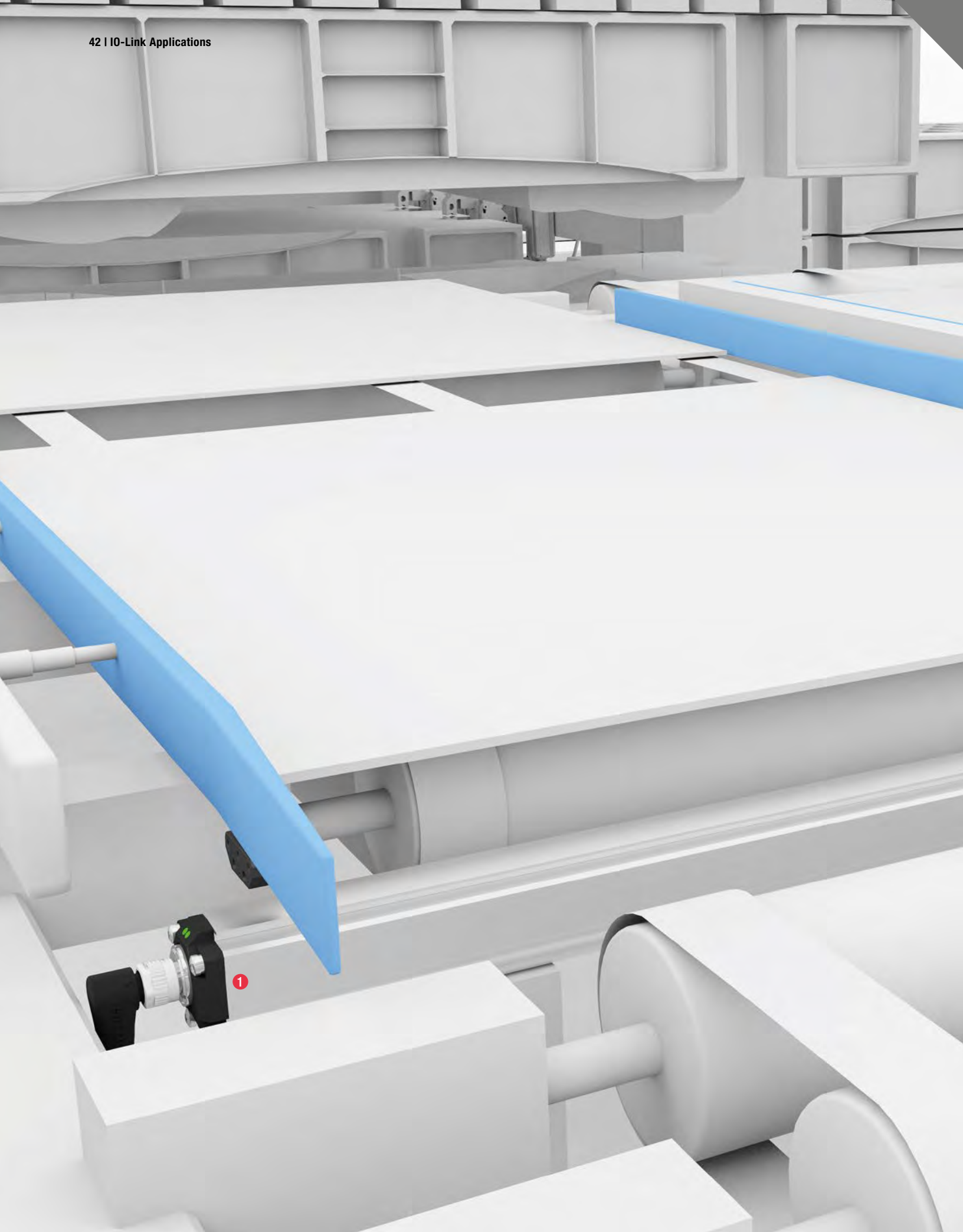
Alternately, you can use IO-Link ID systems. As easy to connect to the IO-Link master as a sensor, they require no processor unit. The bottom line: IO-Link makes parts tracking especially economical.



ID complete solutions for transfer systems

Automatically acquire data

- 1 BIS V processor unit with IO-Link master
- 2 BIS L IO-Link read/write heads
- 3 BIS M-Link IO-Link read/write heads



A background image showing industrial machinery, likely a conveyor system, with white and blue components. The image is partially obscured by a dark grey diagonal shape in the top right corner.

Fast parameter replacement, minimum scrap

Automate format changes

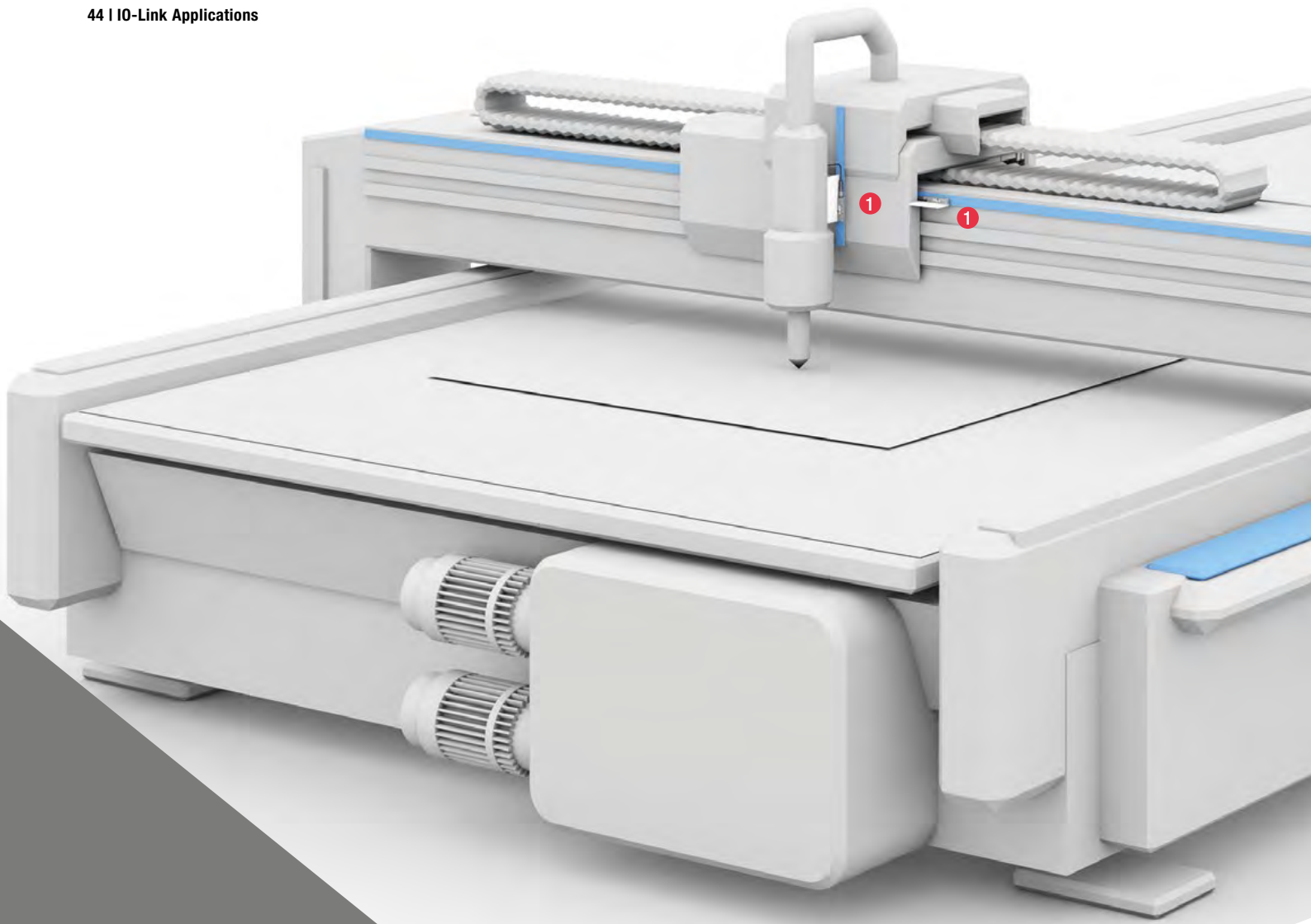
React quickly and flexibly to changing requirements

Ever smaller lot sizes mean your production has to be able to respond ever faster to changing customer demands and in a flexible way, since different sizes and formats are involved in feeding, processing and packaging the material.

The position and spacing of the adjustment points, such as transport belts and guide rails, need to be reset each time the product format is changed. Using position measuring systems for format changing shortens the change time, increases product quality and reduces scrap to a minimum.

Our magnetostrictive linear position sensors with IO-Link interface provide high-precision, fast and absolute position detection for your individual format settings. The rugged design with a hermetically sealed housing makes it completely impervious to contamination, shock and vibration. You will profit from high machine and system up-time even under extreme ambient conditions. Simultaneously querying multiple positions with a single positioning system saves you additional integration effort and cost.

IO-Link gives you multiple benefits. Incorporation into the control system and replacing the parameters using the defined protocols is simple and time-saving. Plug-and-play makes system interchanging quick and easy. The system is up and ready again immediately with no homing move for a maximum stroke length of 4572 mm.



Simple handling, versatile application – economical!

Measure position and end-of-travel with absolute accuracy



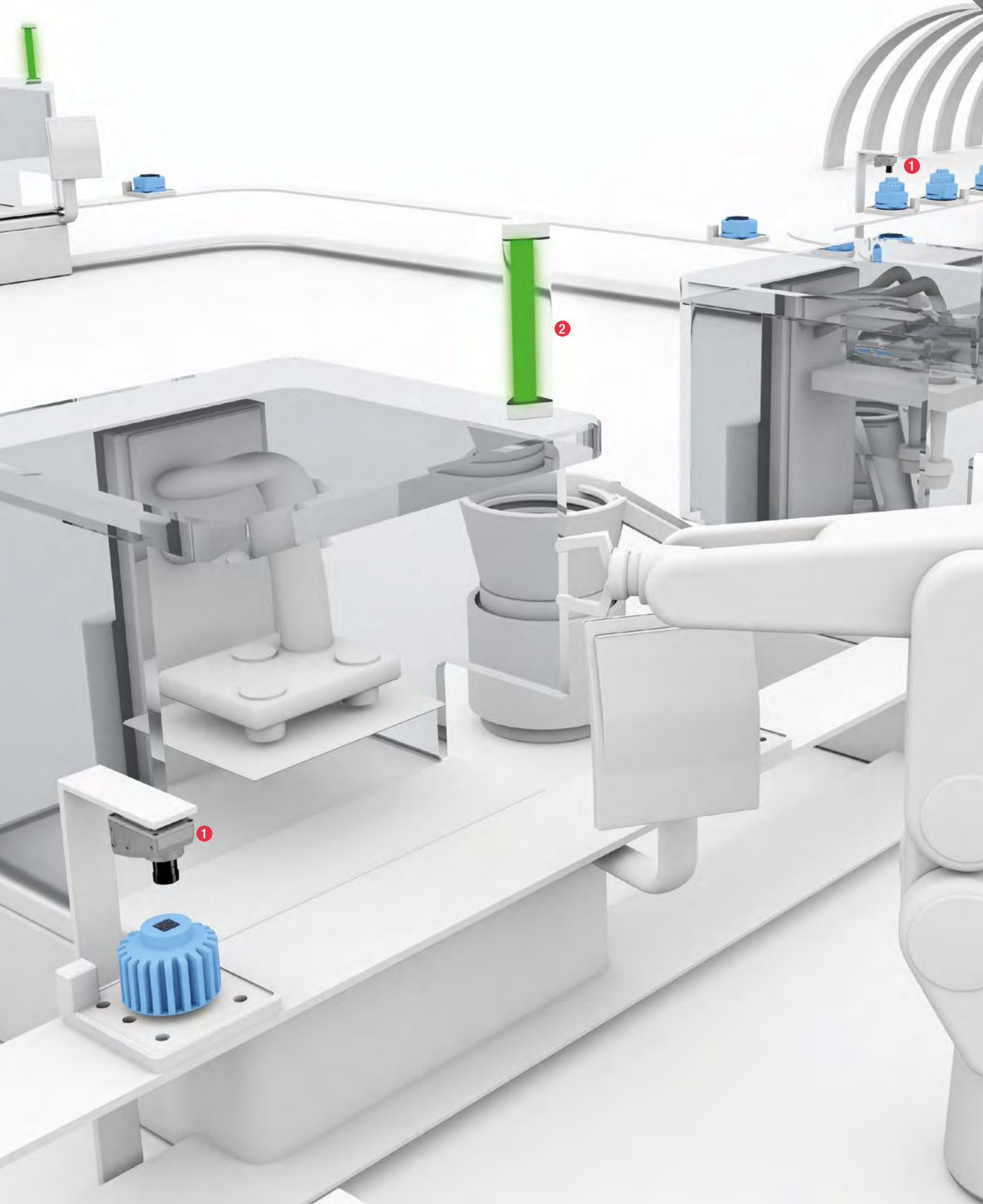
Continuously monitor position during movement

When other travel measuring systems are too large, too slow, too imprecise, or too inflexible, you can count on the BML-SL1 absolute magnetic encoder. It stands out wherever you need absolute accuracy of positions and end-of-travel. Specifically developed for measuring and positioning tasks, it is fast, highly precise and can be used in any industry. The encoder is simple to use, extremely cost-effective and compact, making it easy to integrate.

Special flexibility comes from its built-in IO-Link interface. Additionally, IO-Link allows you to conveniently connect the measuring system; format setup and adjustment are also fast and easy using this communication standard because you can easily enter all the parameters from a central location. Using IO-Link you can output position information and easily view it on the controller. You can monitor the target position and continually check positions during the move.

With the BML SL1 you get all the advantages of a magnetic tape system and the innovative interface of the controller world.

1 BML SL 1 absolute linear magnetic encoder system





Simplify industrial vision applications

Quality control to your individual specifications

Well-positioned for Industry 4.0

For modern, flexible manufacturing our SmartCamera with fieldbuses and IO-Link offers you a wide range of applications. It takes care of visual quality controls of the finished parts including their production steps by, for example, checking whether size, distance and orientation are correct or whether the parts are complete and flawless. This means you can discover and correct process errors early in each individual production step. The result is less scrap and reduced follow-on costs.

To ensure an optimal process, the IO-Link interface allows additional sensors to be incorporated into the overall solution, so that with our camera you are well equipped to meet the challenges of Industry 4.0.

For example, through the IO-Link master interface you can also directly – without a PLC – display process control states using our IO-Link SmartLight stack light. The SmartCamera enables intelligent data management and provides for modern information storage. All the data is formatted as desired and passed on to the host control system.

The user-friendly interface ensures that all the tasks can be simply and quickly taught according to your individual specifications. The complete software with online help, as well as graphical interface, tool aids and the manual, are already integrated. We think you should be able to take brilliant images for granted.

You also stabilize your entire production process with our SmartCamera because it can be configured so that only the information needed for the controller flows through the process network. All the other data is directed to a separate Gigabit Ethernet network. This minimizes data load and secures your process network.

- 1 SmartCamera BVS SC with IO-Link master
- 2 IO-Link SmartLight

Automated tool management with RFID

Automated tool management

All the tools at a glance

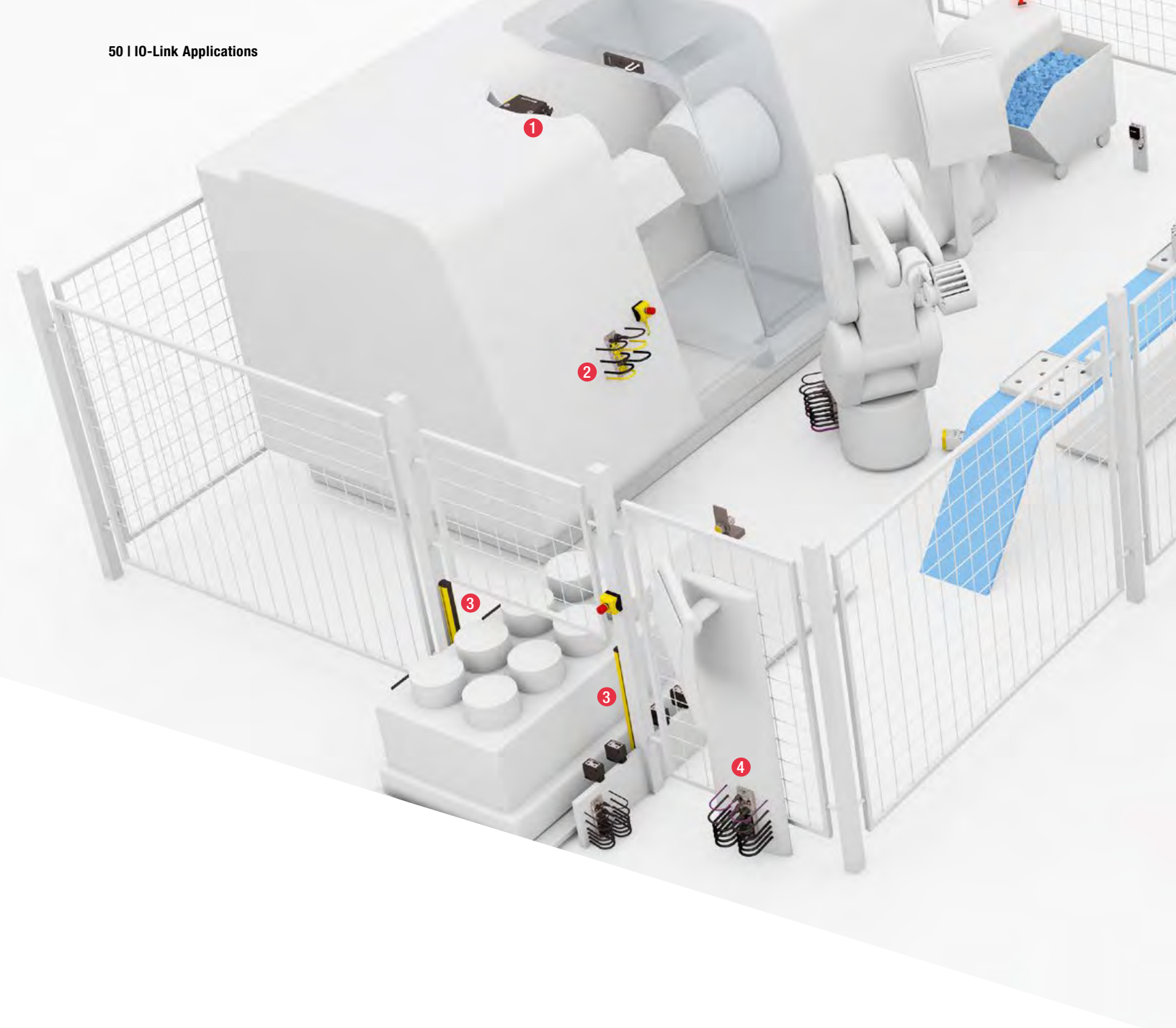
When it comes to industrial automation and rugged RFID systems, Balluff has, for more than 30 years, secured the highest quality of tools and optimized their utilization. We offer systems which always provide the correct tool data to the CNC controller in milling machines and machining centers.

With RFID the right tool can be assigned to the right machine for any upcoming process. Each individual tool is independently directed through production, checked and, if necessary, reworked and returned. RFID guarantees you unique, unambiguous identification of every tool used, since the unique ID on the data carrier fixed to the tool holder is unmistakable. All tool-relevant data can be displayed via IO-link in the controller. This gives you high machining quality and optimal tool utilization. In this way RFID-assisted tool management contributes to greater value creation.

At Balluff you can choose from low-frequency (LF) and high-frequency (HF) systems which, thanks to the great variety of data carriers and read heads, lets you fulfill a wide range of applications even under challenging conditions. Our low-frequency BIS C has, over the years, established itself as a standard. With our high-frequency BIS M you can handle large data volumes. And if you need to work with both LF and HF, our solutions also provide reliable mixed operation of both frequencies. With Balluff you can choose a frequency-independent, cross-technology processor unit.

- 1 Easy Tool-ID
- 2 SmartCamera BVS SC with IO-Link master





IO-Link supplies both sensor/actuator details and secure information

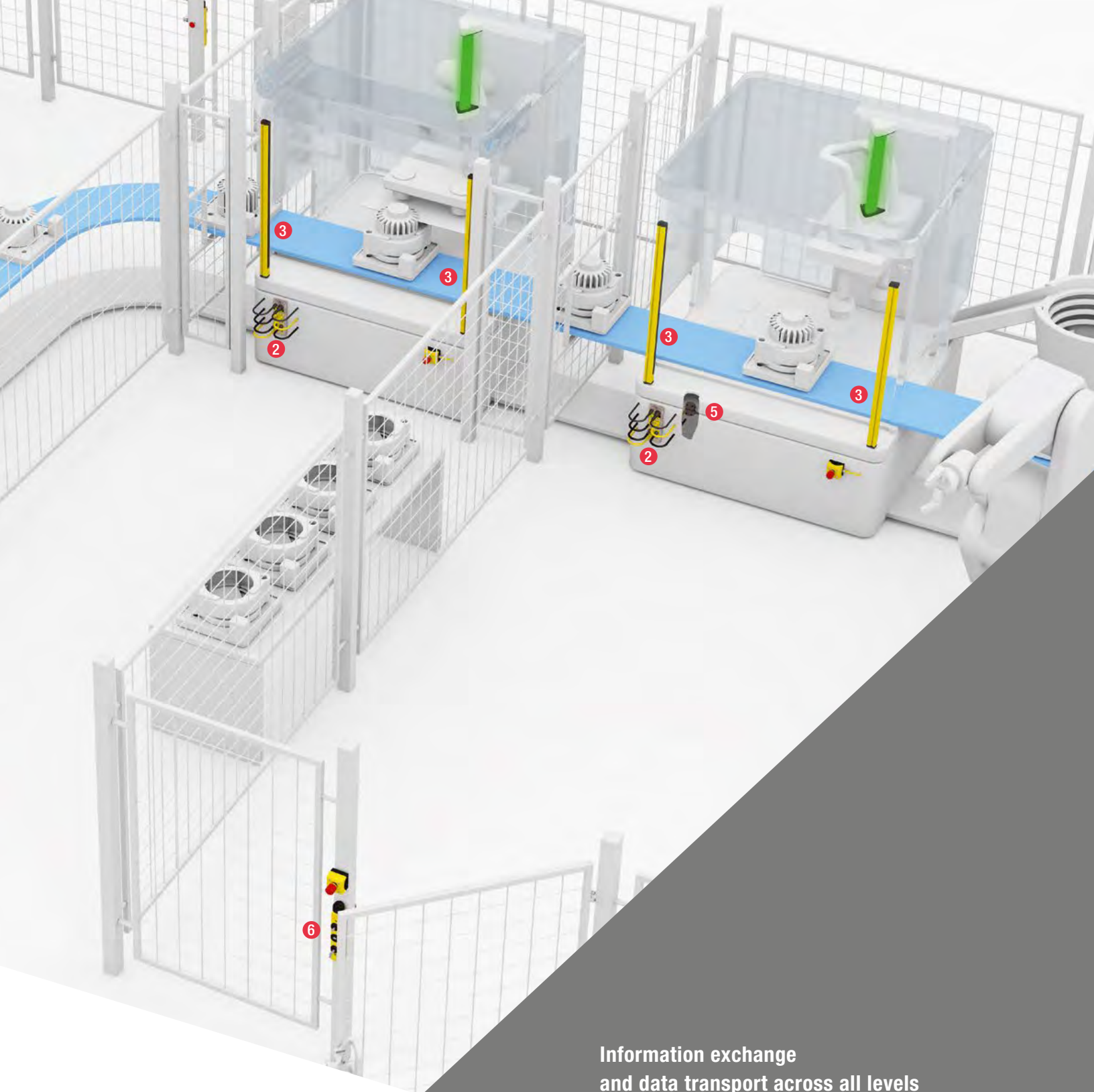
Robotics is indispensable to modern automation, but it demands safety in order to enable the fast interaction between man and machine. Safety technology is, thus, a given for automation; only with it can, for example, fast applications with pick-and-place be realized.

We offer solutions which will work precisely and safely over years. And the best part is that these are also quite easy to implement because safety technology from Balluff offers the advantages of IO-Link.

Safety with IO-Link is simple to integrate and reacts quickly. It communicates down to the last meter and provides both sensor/actuator details as well as safety information. This lets you realize reliable, flexible information exchange and data transport across all levels.

Integration is as simple as connecting the safe I/O module to the IO-Link master. You can connect nearly any safety device to this system, which is open all the way to the sensor level, and bundle the signals from binary standard sensors. The parameterization is done centrally via the controller. The safety-relevant information is sent through the master to the controller.

- 1 RFID interlocks
- 2 Safe IO-Link I/O modules
- 3 Opto-electronic protective devices
- 4 IO-Link masters
- 5 Transponder-coded safety sensors
- 6 Electromechanical safety switches



Information exchange
and data transport across all levels

Safety over IO-Link

For the fast interaction of man and machine

Safe personal protection

Economically securing hazardous locations

An economical solution for securing hazardous locations is our safety light curtains. These non-contact, protective devices reliably detect fingers, hands or the body and stop all hazard-inducing movements of machines. They ensure personal safety and eliminate the expense of guard fence constructions, so that you can better use the available space. Additionally, you profit from high anti-tamper protection. Simply connect the light grid to the safe I/O module that is connected to the IO-Link master. You have now produced the safety function and reduced costs because the connectivity is through the familiar M12 standard.

To be able to reliably feed material to the robot, our safety light curtains can also be used at material locks so that the muting applications can be implemented. There the safety function is temporarily jumpered when the material is transported through the protective field. Safety is, however, still maintained in case a person inadvertently attempts to enter the hazardous zone.

In the worst case, you can use our emergency stop device to trigger the stop command to halt the hazardous movement. Our emergency stop is simple to install and versatile in its use. Its compact housing makes it ideal for a wide range of machines and systems while its high protection rating means it is impervious to dust and water.

- 1 Opto-electronic protective devices
- 2 Safe IO-Link I/O modules
- 3 Emergency stop device
- 4 IO-Link SmartLight





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Wear-free and tamper-proof

Safety for people and systems

Direct querying of robot position and end-of-travel with metal

Our inductive safety sensors offer you safety for people and equipment. These detect the approach of metallic objects without contact and provide you with the needed safe signals for position or end-of-travel. Now you can safely monitor robots and workpiece carriers. Unlike traditional safety switches, inductive safety sensors require no special mating part, making it easy to directly query robot position and end-of-travel of metallic workpiece carriers. Simply connect the sensors to the safe I/O module, which bundles all the signals and passes them to the processor through the IO-Link master.

An economical solution to access security

Our REED safety switches ensure wear-free access security. This economical solution is insensitive to door shifting and highly rugged. Another plus: the spacer even makes it possible to install in ferromagnetic surroundings.

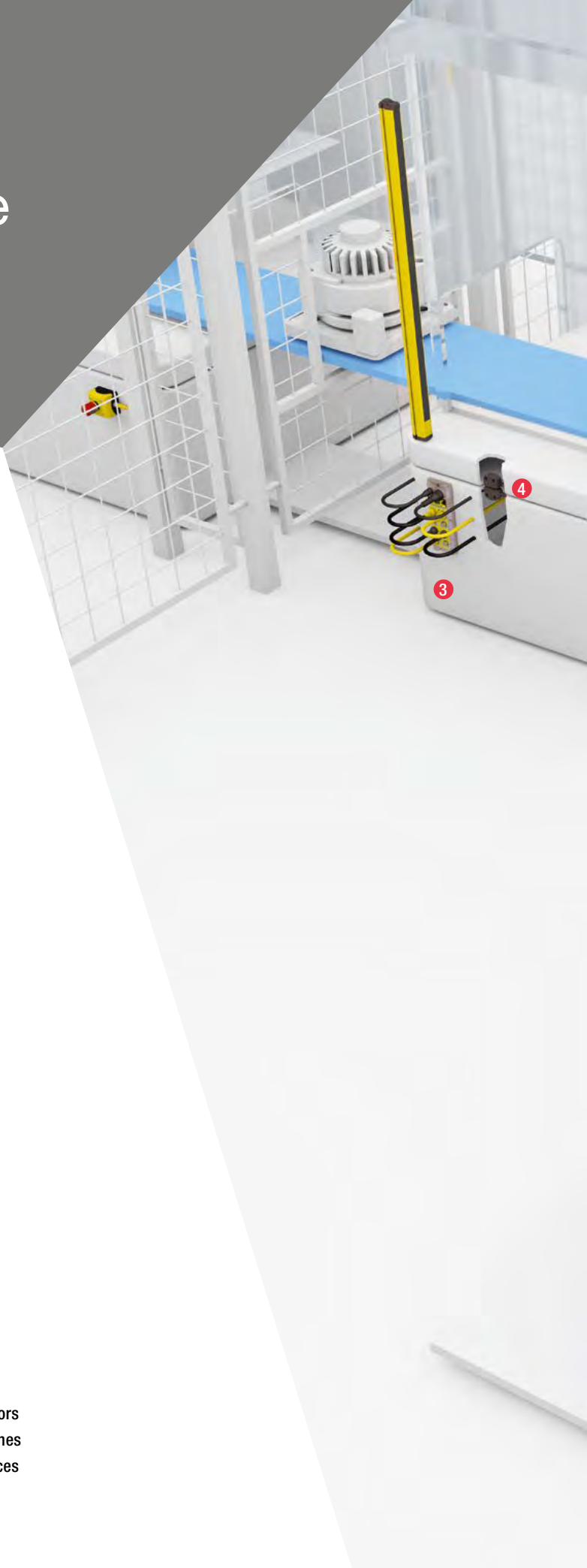
When there is strong vibration

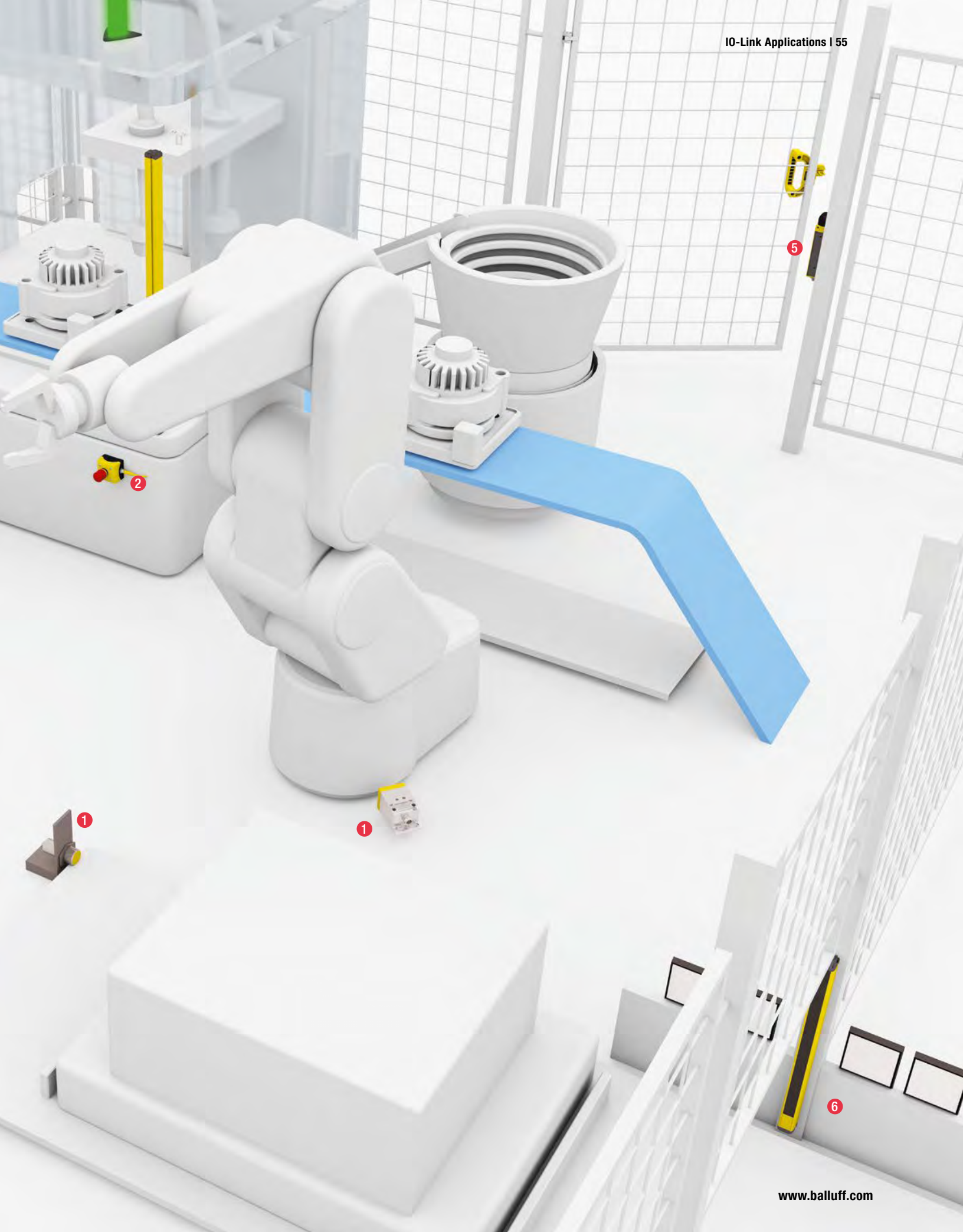
To meet higher demands, transponder-coded safety sensors are indispensable. Our RFID safety sensors ensure safe monitoring of guard doors which are subjected to strong vibration. You enjoy the benefits of both high coding levels and high anti-tamper protection because the passive RFID transponders are uniquely identifiable.

The contamination-resistant sensors, with a generous detection range, are ideal when doors settle or are imprecisely guided. This also means they offer great room to play for installation. And to save on door fittings, you can choose versions with integrated magnetic clamps.

- 1 Inductive safety sensors
- 2 Emergency stop device
- 3 Safe IO-Link I/O modules

- 4 Transponder-coded safety sensors
- 5 Electromechanical safety switches
- 6 Opto-electronic protective devices





For pneumatics and hydraulics

Safety for clamping equipment

All-in-one solution for connecting galvanically isolated sensors and actuators

Our galvanically isolated sensor/actuator hub ensures safety on the workpiece holder. This all-in-one solution allows you to connect both sensors and actuators to just one module. The sensor segment provides the position feedback. At the same time, you can safely turn off the actuator segment using its separately switchable safety circuit, since the IO-Link I/O hub is divided into two galvanically isolated segments.

To safely interrupt the supply voltage to the actuator segment, you need an external safety device to implement safety functions up to SIL2, in accordance with EN62061. The rugged IP67 metal housing is designed even for the harshest surroundings. Diagnostics are provided by IO-Link and status LEDs and can also reliably monitor the signal quality.

Up to eight digital inputs and outputs can be controlled with the module. If the IO-Link connection is interrupted, the outputs assume predefined states which remain until the IO-Link connection is restored. Because of this clear machine status, you can continue to produce without a reference move and save valuable time once the connection is made again.

- 1 Magnetic field sensors
- 2 IO-Link master
- 3 IO-Link I/O module with galvanic isolation
- 4 Emergency stop device

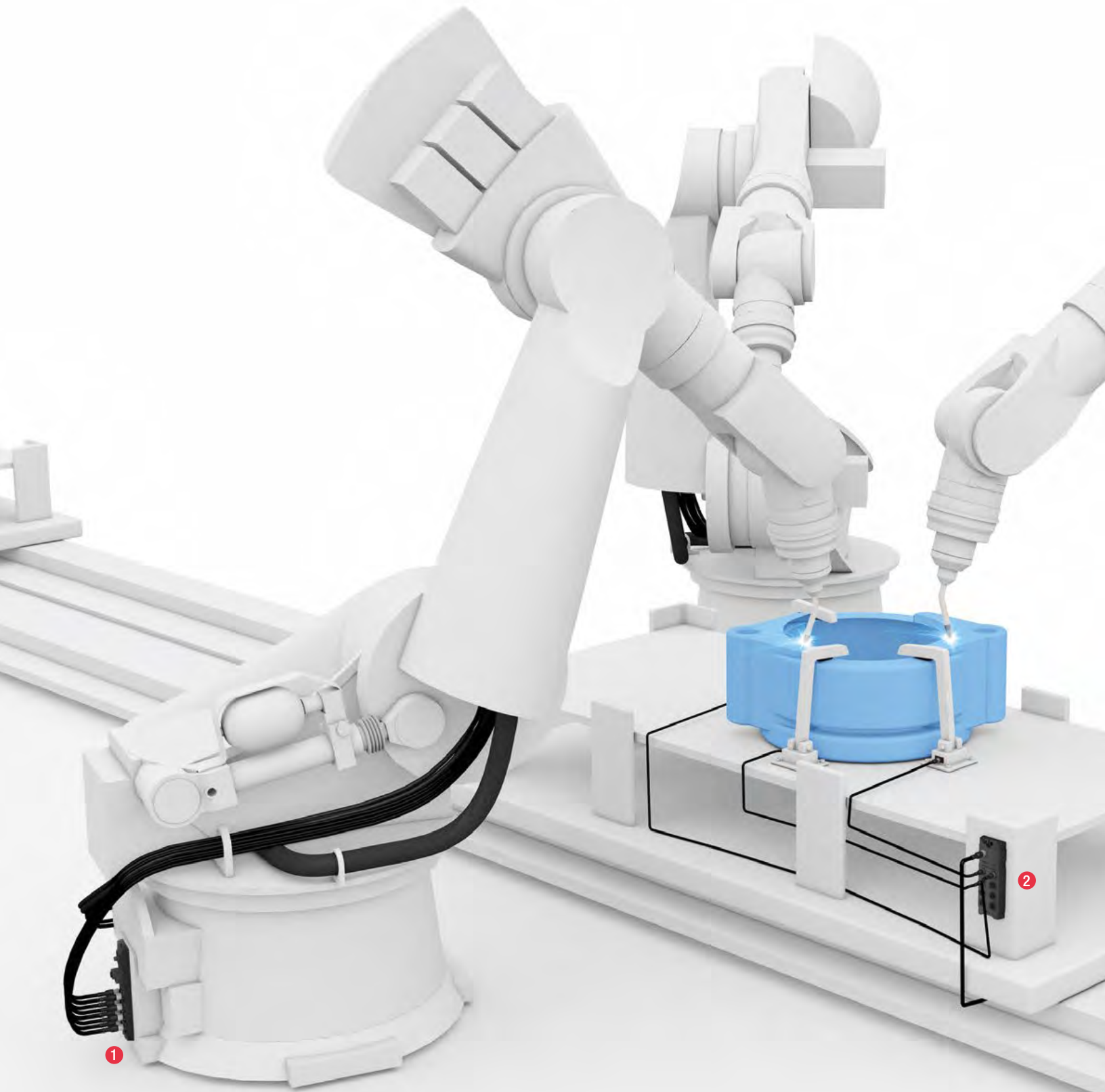




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For the extreme conditions of welding

Reliably transmit signals in electrical noise fields

Decentralized system architecture in the welding booth

For the extreme conditions of welding, Balluff offers rugged modules for reliable signal transmission even in the presence of interfering ambient influences. Our weld-immune modules, made of fiberglass-reinforced plastic, can reliably handle weld spatter, welding currents and electromagnetic fields.

The easy to install modules are available as IO-Link masters and IO-Link sensor/actuator hubs, each with 8 IO-Link ports for 16 inputs and outputs. Each input is short-circuit proof while each output is protected from overload. In addition, our IO-Link sensor/actuator hubs offer an expansion port for connecting an IO-Link valve interface or another IO-Link sensor/actuator hub, allowing you to use up to 30 inputs and outputs. This lets you flexibly integrate innovative fieldbus solutions.

The efficient point-to-point wiring of IO-Link allows construction of a decentralized system architecture in the welding booth outside the control cabinet. Network nodes equipped with an IO-Link master communicate via Ethernet/IP directly with the main controller or control device on the machine.

You can connect a wide variety of intelligent sensors or I/O modules with IO-Link interface to the IO-Link ports. These simple structures are highly flexible and the parameters are also simple to transmit. Continuous diagnostics ensure reliable monitoring and the affordable, three-core, unshielded industrial cables reduce wiring time.

- 1 IO-Link masters (weld-immune)
- 2 IO-Link sensor/actuator hubs (weld-immune)

The optimal power supply for condition monitoring

For noise-free operation

Our IO-Link Heartbeat power supplies, used to deliver reliable and efficient voltage, stand out thanks to their quality and long service life. They are manufactured from the highest quality components and offer you adjustable output voltage with low ripple.

Especially notable is their clever diagnostics capability which supports predictive maintenance and condition monitoring for Industry 4.0 requirements.

Integrated monitoring provides information for load level, stress level and lifetime via IO-Link. This gives you reliable information about the current electrical and thermal load, the degree of wear and the remaining lifetime of the power supply. You can also find this information locally on the status indicator using the 3-color LEDs that work like a traffic light.

You can use IO-Link to call up further detailed diagnostics and status information for the unit as well as operating parameters and history. This allows you to see the data in the higher level control and diagnostics system. You increase system up-time by knowing at all times when you need to replace a unit.

Specially developed for controller units, Balluff power supplies can be perfectly integrated into your control package. The extra narrow IP20 housing enables a resource-optimized control cabinet design. IP67 variants are also available for supplying power to the modules in decentralized structures in direct proximity to the consumer.

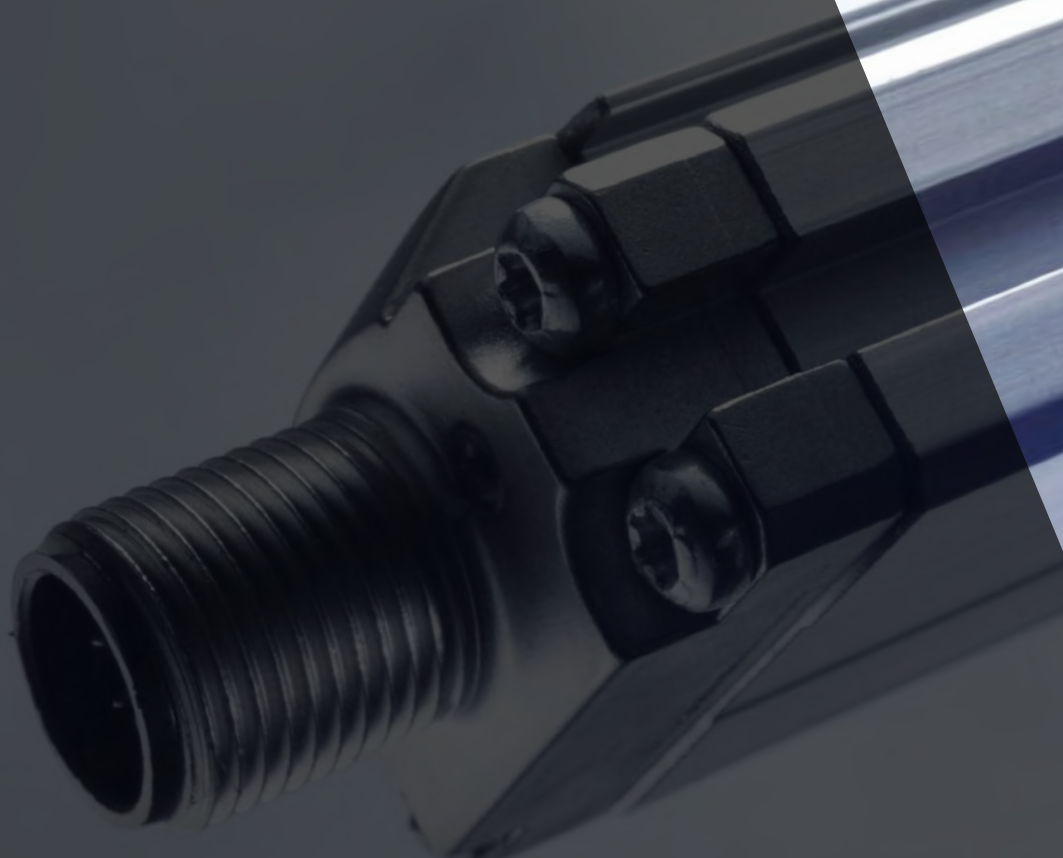
- 1 Heartbeat power supplies with IO-Link IP20
- 2 Heartbeat power supplies with IO-Link IP67





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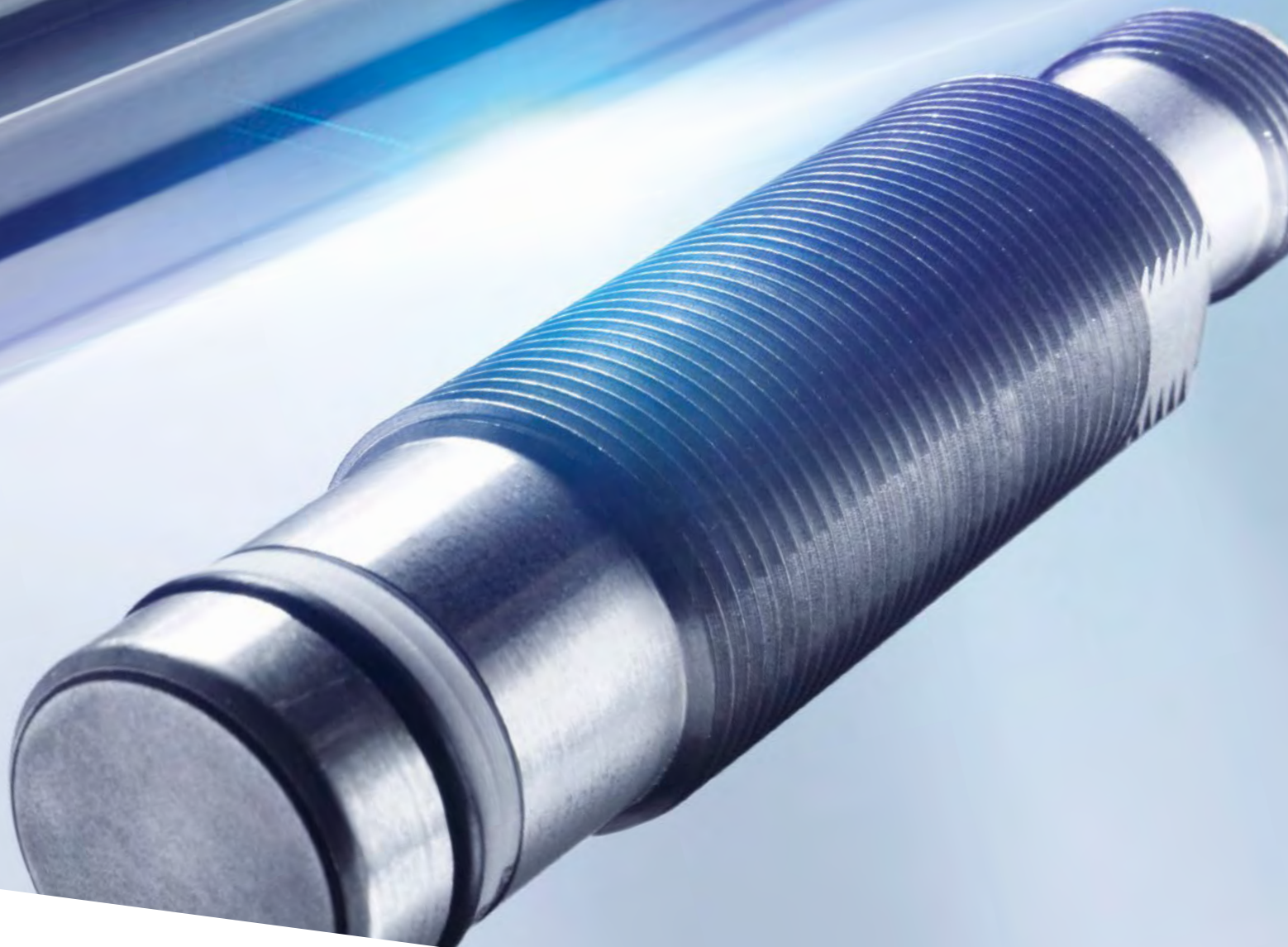
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Comprehensive solutions for food and beverage industry

SENSORS.

 *innovating automation*



In the field of sensor technology, Balluff handles the entire range of technological diversity with its various operating principles. We provide you with high-quality sensors for any application or requirement – distance measurement to object detection and level, temperature and pressure monitoring. For everyday industrial uses as well as for tough applications in critical environments, Balluff's solution expertise in automation is truly comprehensive.

Our quality management regime is DIN EN ISO 9001:2008 certified. All Balluff sensors are tested in our in-house, accredited laboratory. Balluff sensors meet regional as well as international standards and are used throughout the world.

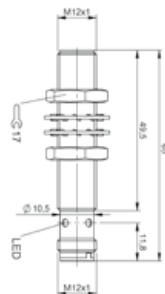
Your Balluff solutions

- Inductive sensors
- Photoelectric sensors
- Capacitive sensors
- Magnetic field sensors
- Ultrasonic sensors
- Mechanical switches
- Magnetostrictive sensors
- Magnetic encoders
- Pressure sensors
- Temperature sensor



STANDARD INDUCTIVE SENSORS

	BES04FK BES M12MI-PSIC20C-S04G		
Dimension	Ø 12 x 65 mm		
Style	M12x1		
Installation	for flush mounting		
Range	0.5...2 mm		
Interface	IO-Link 1.1		
Switching output	PNP Normally open		
Switching frequency	2000 Hz		
Repeat accuracy	5.0 % FS		
Housing material	Brass		
Surface protection	Nickel-free coated		
Material sensing surface	LCP		
Connection	Connector, M12x1-Male, 4-pole		
Operating voltage U_b	12...30 VDC		
Ambient temperature	-25...85 °C		
IP rating	IP68		
Approval/conformity	cULus, CE, EAC		
Process data	Switch point, Target uncertainty		

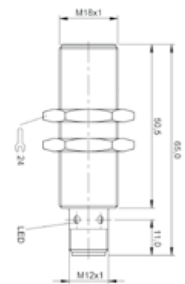
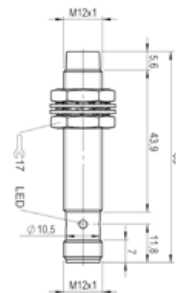
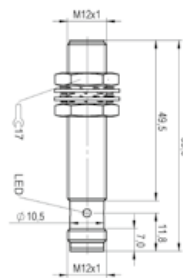


Housing material definitions:
LCP Liquid Crystalline Polymer

INDUCTIVE DISTANCE SENSORS



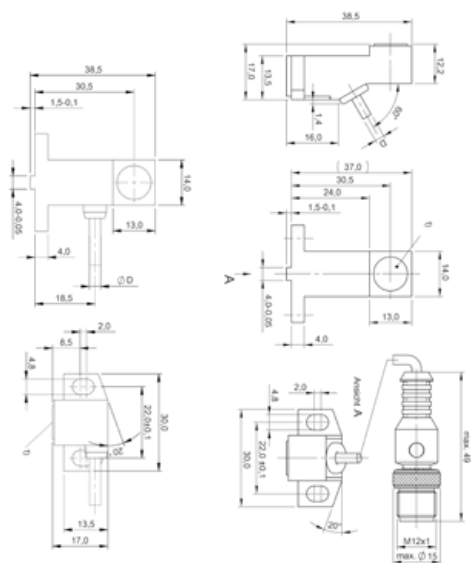
	BAW004M BAW M12MI-BLC35C-S04G	BAW0056 BAW M12MH-BLC70G-S04G	BAW002F BAW M18MI-BLC50B-S04G	
Dimension	Ø 12 x 65 mm	Ø 12 x 65 mm	Ø 18 x 65 mm	
Style	M12x1	M12x1	M18x1	
Installation	for flush mounting	non-flush	for flush mounting	
Range	0.2...3.5 mm	0.2...7 mm	1...5 mm	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.0	
Analog output	falling on approach	falling on approach	falling on approach	
Repeat accuracy	0.2 % FS	0.2 % FS	3.0 % FS	
Non-linearity max.	±35 µm	±70 µm	±120 µm	
Housing material	Brass	Brass	Brass	
Surface protection	Nickel-free coated	Nickel-free coated	nickel plates	
Material sensing surface	PBT	LCP	PBT	
Connection	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	
Operating voltage U_b	18...30 VDC	18...30 VDC	18...30 VDC	
Ambient temperature	-40...80 °C	-25...70 °C	-10...70 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC	
Process data	Position value 3x Switch points Out of range	Position value 3x Switch points Out of range	Position value	



Housing material definitions:
 LCP Liquid Crystalline Polymer
 PBT Polybuteneterephthalate



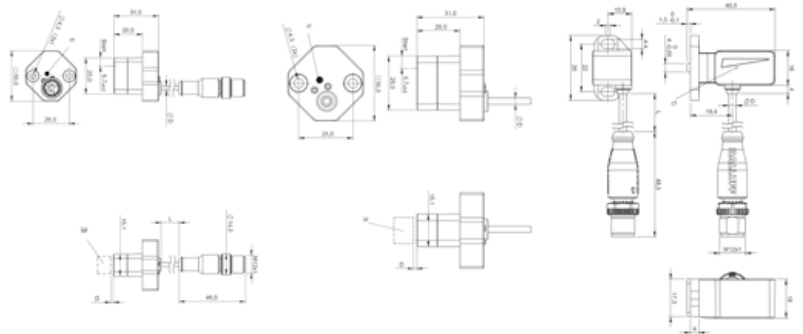
BAW003A BAW Z01AC-BLD50B-DP03	BAW003W BAW Z05AC-BLD50B-BP00,75-GS04			
38.5 x 14 x 17 mm	30 x 38.5 x 16.5 mm			
block style	block style			
non-flush	non-flush			
1...5 mm	1...5 mm			
IO-Link 1.0	IO-Link 1.0			
falling on approach	falling on approach			
1.0 % FS	1.0 % FS			
±150 µm	±150 µm			
Aluminum	Aluminum			
Anodized	Anodized			
LCP	LCP			
Cable, 3.00 m, PUR	Cable with connector, M12x1-Male, 4-pole, 0.75 m, PUR			
18...30 VDC	18...30 VDC			
-10...60 °C	-10...60 °C			
IP67	IP67			
CE, cULus, EAC	CE, cULus, EAC			
Position value 3x Switch points Error code	Position value 3x Switch points Error code			



INDUCTIVE LINEAR POSITIONING SENSORS



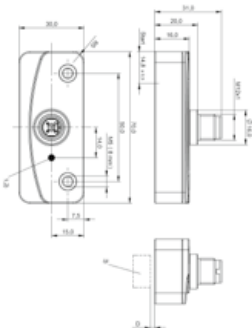
	BIP000F BIP LD2-T014-01-EP01-S4	BIP0007 BIP LD2-T014-01-EP02	BIP001M BIP LD2-T017-04-BP00,5-S4	
Dimension	35 x 35 x 31 mm	35 x 35 x 31 mm	30 x 18 x 40.5 mm	
Style	block style	block style	block style	
Connection	Cable with connector, M12x1-Male, 4-pole, 1.00 m, PUR	Cable, 2.00 m, PUR	Cable with connector, M12x1-Male, 3-pole, 0.5 m, PUR	
Housing material	PA	PA	PA	
Measuring range	0...14 mm	0...14 mm	0...17 mm	
Installation	non-flush	non-flush	flush	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	
Repeat accuracy per BWN	±80.0 µm	±80.0 µm	±40 µm	
Non-linearity max.	±250 µm	±250 µm	±250 µm	
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE, IO-Link, EAC, UR	CE, UR, EAC	CE, cURus, EAC	
Process data	Position value Out of range	Position value Out of range	Position value 3 x Switch points Out of range	



Housing material definitions:
PA Polyamide



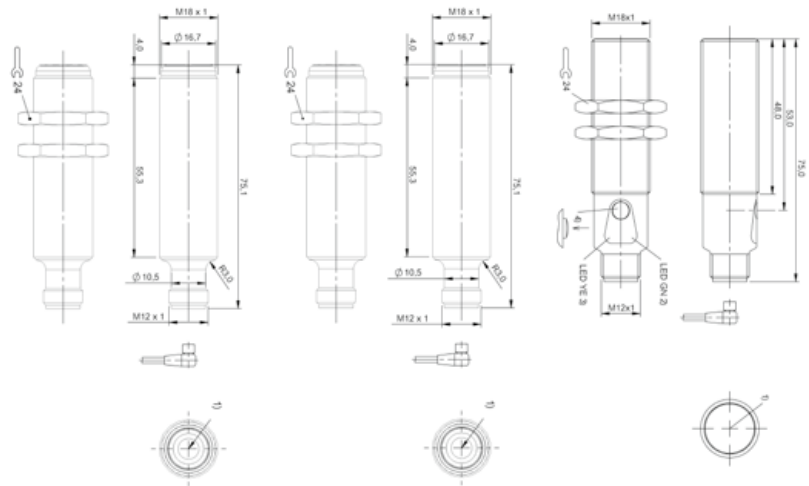
BIP0004 BIP LD2-T040-02-S4				
70 x 30 x 31 mm				
block style				
Connector, M12x1-Male, 4-pole				
PA				
0...40 mm				
flush				
IO-Link 1.0				
±100.0 µm				
±500 µm				
18...30 VDC				
-25...85 °C				
IP67				
CE, UR, EAC				
Position value Out of range				



PHOTOELECTRIC
THROUGH-BEAM SENSORS



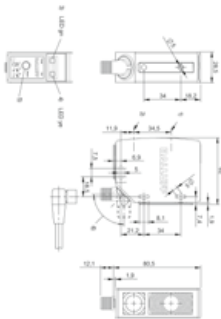
	BOS023H BOS 18E-PI-RE30-S4	BOS023J BOS 18E-XI-RS30-S4	BOS01UC BOS 18M-PI-RE30-S4
Series	18E	18E	18M
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
Interface	IO-Link 1.1 PNP NO/NC	IO-Link 1.1	IO-Link 1.1 PNP NO/NC
Principle of operation	Photoelectric Sensor	Photoelectric Sensor	Photoelectric Sensor
Principle of optical operation	Through-beam sensor (Receiver)	Through-beam sensor (Emitter)	Through-beam sensor (Receiver)
Beam characteristic			
Light type	Red light	Red light	LED, red light
Light spot size			
Range	0...20 m	0...20 m	0...20 m
Connection	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material	Stainless steel (1.4571), Glass	Stainless steel (1.4571), Glass	Brass, Glass
Operating voltage U_b	18...30 VDC	18...30 VDC	18...30 VDC
Approval/conformity	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC
Process data	1x Switch point uncertainty	Emitter defect	1x Switch point uncertainty



Housing material definitions:
 ABS Acrylonitrile Butadiene Styrene
 PC Polycarbonate



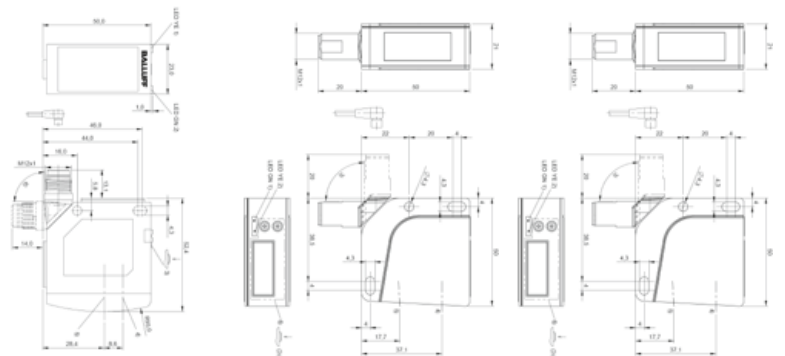
BOS01JJ BOS 50K-PI-RD11-S4				
50K				
28.5 x 80.5 x 62 mm				
IO-Link 1.1 PNP NO/NC				
Photoelectric Sensor				
Diffuse sensor, (energetic)				
Divergent				
LED, red light				
80 x 80 mm at Sr				
1...3500 mm				
Connector, M12x1-Male, 4-pole				
PC ABS				
10...30 VDC				
CE, cULus, EAC				
2x Switch point, Light intensity value				





PHOTOELECTRIC DISTANCE SENSORS

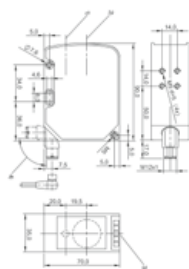
	BOD0020 BOD 23K-LI01-S4	BOD0023 BOD 24K-LI04-S92	BOD0026 BOD 24K-LI05-S92	
Series	23K	24K	24K	
Dimension	51 x 23 x 52.4 mm	50 x 21 x 50 mm	50 x 21 x 50 mm	
Interface	PNP/NPN/Auto-Detect NO/NC IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Principle of operation	Photoelectric Distance Sensor BOD	Photoelectric Distance Sensor BOD	Photoelectric Distance Sensor BOD	
Principle of optical operation	Light time-of-flight	Triangulation	Triangulation	
Beam characteristic				
Light type	Laser red light	Laser red light	Laser red light	
Light spot size	5.5 x 7 mm at 5 m	1 x 1 mm at 100 mm	1 x 1 mm at 450 mm	
Range	100...5000 mm	50...100 mm	50...650 mm	
Repeat accuracy	0.024 % FS	0.25 % FS	0.5 % FS	
Resolution	≤ 5 mm	≤ 10 µm	≤ 500 µm	
Connection	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 5-pole	Connector, M12x1-Male, 5-pole	
Housing material	ABS	Plastic	Plastic	
Operating voltage U _b	18...30 VDC	18...30 VDC	18...30 VDC	
Approval/conformity	CE, cULus, Ecolab	CE, CDRH, EAC	CE, CDRH, EAC	
Trademark	2x Switch point, Distance value, Signal quality	Distance value, Signal quality	Distance value, Signal quality	



Housing material definitions:
 ABS Acrylonitrile Butadiene Styrene



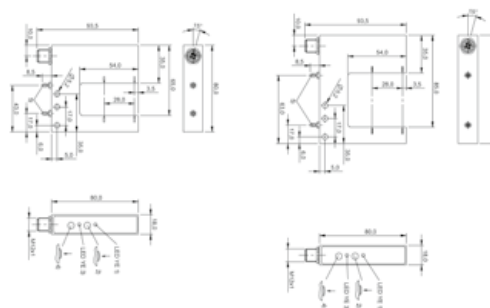
BOD0012 BOD 63M-LI06-S4				
63M				
35 x 70 x 90 mm				
2x PNP Normally open (NO) IO-Link 1.0				
Photoelectric Distance Sensor BOD				
Light time-of-flight				
Collimated				
Laser red light				
Ø 10 mm at 6 m				
200...6000 mm				
0.067 % FS				
≤ 1.0 mm				
Connector, M12x1-Male, 4-pole				
Die-cast aluminum				
18...30 VDC				
CE, cULus, EAC				
Distance value, 4x Switch point, Error, Laser on/off control, Button on/off control				





PHOTOELECTRIC FORK SENSORS

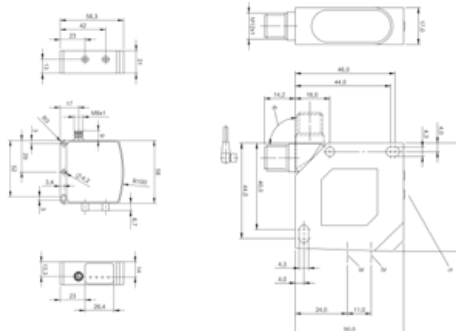
	BGL0035 BGL 30C-007-S4	BGL003F BGL 50C-007-S4	
Series	C	C	
Dimension	18 x 80 x 93.5 mm	18 x 100 x 93.5 mm	
Fork opening	30 mm	50 mm	
Interface	IO-Link NO/NC	IO-Link NO/NC	
Principle of operation	Fork sensor	Fork sensor	
Principle of optical operation	Through-beam sensor	Through-beam sensor	
Special optical feature	Light array	Light array	
Beam characteristic	Divergent	Divergent	
Light type	LED, red light	LED, red light	
Light spot size	3 x 28 mm Light exit	3 x 28 mm Light exit	
Connection	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	
Housing material	Aluminum	Aluminum	
Operating voltage U_b	18...30 VDC	18...30 VDC	
Approval/conformity	CE	CE	
Process data	Position value, 4x Switching points, Emitter error, Contamination warning	Position value, 4x Switching points, Emitter error, Contamination warning	



PHOTOELECTRIC COLOR SENSORS



	BFS000M BFS 33M-GSI-F01-S75	BFS000F BFS 26K-GI-L04-S92	
Series	33M	26K	
Dimension	21 x 58.3 x 58 mm	17 x 50 x 50 mm	
Interface	2x NO/NC IO-Link 1.1	PNP/NPN NO/NC IO-Link 1.0	
Principle of operation	Color sensor	Color sensor	
Principle of optical operation	Diffuse sensor, Amplifier	Diffuse sensor, Fixed focus	
Beam characteristic	Depends on fiber	Focused	
Light type	White light	White light	
Light spot size	Various lens available	Ø 4 mm at 22 mm	
Range	Depends on fiber	12...32 mm	
Connection	Connector, M8x1-Male, 4-pole	Connector, M12x1-Male	
Housing material	Aluminum	ABS	
Operating voltage Ub	21.6...26.4 VDC	18...30 VDC	
Approval/conformity	CE	CE, EAC	
Process data	255x Color switch points, Error codes	5x Color switch points	

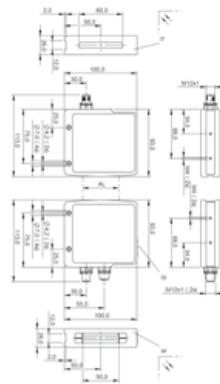


Housing material definitions:
 ABS Acrylonitrile Butadiene Styrene



PHOTOELECTRIC
LIGHT BAND SENSORS

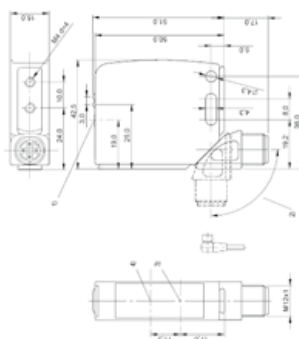
	BLA0003 BLA 50A-002-S4		
Series	A		
Dimension	100 x 26 x 113 mm		
Interface	IO-Link 1.1		
Principle of operation	Light array		
Special optical feature	CCD technology		
Beam characteristic	Collimated light strip, width 54 mm		
Light type	Laser red light		
Light spot size	60 mm		
Range	0...2 m		
Connection 1	M12x1-Male, 4-pole		
Connection 2	M12x1-Female, 4-pole		
Connection 3	M12x1-Male, 4-pole		
Housing material	Aluminum		
Operating voltage U_b	18...30 VDC		
Approval/conformity	CE		
Process data	2x Measurement values (mm) 6x Switching points Count value		





PHOTOELECTRIC
LIGHT SWITCH AND BARRIER SENSORS

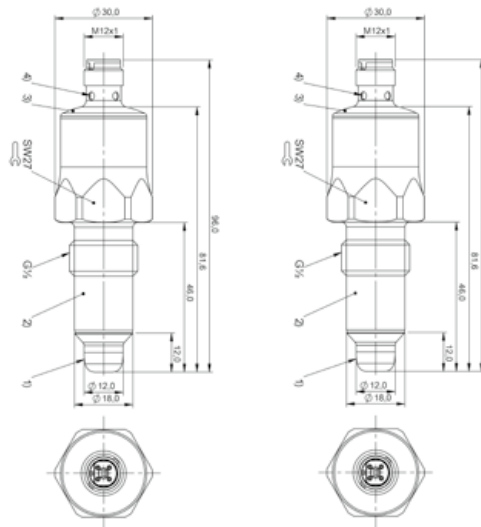
	BOS026R BOS 21M-UUI-RP30-S4	
Series	21M	
Dimension	15 x 51 x 42.5 mm	
Interface	2x PNP/NPN/Push-pull, NO/NC, IO-Link 1.1	
Principle of operation	Photoelectric Sensor	
Principle of optical operation	Diffuse sensor, Diffuse sensor with background suppression, Retroreflective sensor, Through-beam sensor (Emitter), Through-beam sensor (receiver) depending on setting	
Special optical feature	Multi-functional	
Beam characteristic	Divergent	
Light type	LED, red light	
Light spot size	Ø 50 mm at 1 m	
Range	Diffuse sensor with background suppression 8...200 mm, Diffuse sensor 1...600 mm, Retroreflective sensor 0...7 m, Through-beam sensor 0...10 m	
Connection	Connector, M12x1-Male, 4-pole	
Housing material	Die-cast zinc, Aluminum, Glass, PC	
Operating voltage U_b	10...30 VDC	
Approval/conformity	CE; EAC	
Process data	1x Switch point, Stability, Count Value, Count Status, Emitter on/off	



Housing material definitions:
PC Polycarbonate

CAPACITIVE LEVEL SENSOR
WITH CONTACT

	BCS011E BCS S04K501-PICFNG-S04G-T50	BCS011L BCS S04K501-PICFNG-S04G-T51	
Dimension	Ø 30 x 96 mm	Ø 30 x 96 mm	
Connection	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	
Switching output	PNP Normally open (NO)	PNP Normally open (NO)	
Switching frequency	5 Hz	5 Hz	
Interface	IO-Link 1.1	IO-Link 1.1	
Range	basic	oil-based media	
Sensitivity	teachable depending on media	teachable depending on media	
Installation	non-flush	non-flush	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	
Ambient temperature	-40...85 °C	-10...85 °C	
Operating voltage U_b	18...30 VDC	18...30 VDC	
Approval/conformity	CE, FDA compliant, EHEDG conformal, IO-Link	IO-Link, EHEDG conformal, FDA compliant, CE	
IP rating	IP68	IP68	
Process data	Switch Point Sensor Value 0...4095	Switch Point Sensor Value 0...4095	



CAPACITIVE LEVEL SENSOR
WITHOUT CONTACT



	BCS012P BCS R08RRE-PIMFHC-EP00,3-GS04		
Dimension	34 x 16 x 8 mm		
Connection	Cable with connector, M12x1-Male, 4-pole, 0.30 m, PUR		
Switching output	PNP Normally open (NO)		
Switching frequency	10 Hz		
Interface	IO-Link 1.1		
Range	Smart Level		
Sensitivity	teachable depending on media		
Installation	flush with container outer wall		
Housing material	PP		
Ambient temperature	-25...70 °C		
Operating voltage Ub	18...30 VDC		
Approval/conformity	UL Listed, IO-Link, CE		
IP rating	IP67		
Process data	Switch Point Sensor Value 0...4095		



Housing material definitions:
PP Polypropylene



CAPACITIVE SENSOR
FOR OBJECT DETECTION

	BCS012N BCS R08RRE-PIM80C-EP00,3-GS04		
Dimension	34 x 16 x 8 mm		
Connection	Cable with connector, M12x1-Male, 4-pole, 0.30 m, PUR		
Switching output	PNP Normally open (NO)		
Switching frequency	50 Hz		
Interface	IO-Link 1.1		
Range	1...8 mm		
Sensitivity	Switching distance adjustable		
Installation	for flush mounting		
Housing material	PP		
Ambient temperature	-25...70 °C		
Operating voltage U_b	18...30 VDC		
Approval/conformity	UL Listed, CE, IO-Link		
IP rating	IP67		
Process data	Switch Point Sensor Value 0...4095		

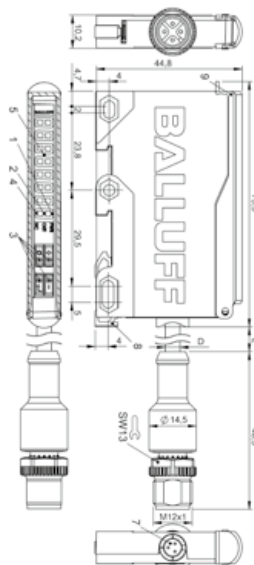


Housing material definitions:
PP Polypropylene

CAPACITIVE SENSOR
AMPLIFIER



	BAE00LC BAE SA-CS-027-YI-BP00,3-GS04		
Dimension	10.5 x 45 x 75.5 mm		
Connection	M12x1-Male, 4-pole, A-coded		
Cable	PUR, 0.30 m		
Switching output	PNP/NPN NO/NC programmable		
Switching frequency	50 Hz		
Interface	IO-Link, PNP/NPN		
Range	n/a		
Sensitivity	Switching distance adjustable		
Installation	n/a		
Housing material	PBT		
Ambient temperature	-10...70 °C		
Operating voltage U_b	18...30 VDC		
Approval/conformity	CE, IO-Link, cULus		
IP rating	IP40		
Time function	On/off delay time programmable		
Process data	Switch Point Sensor Value 0...4095		

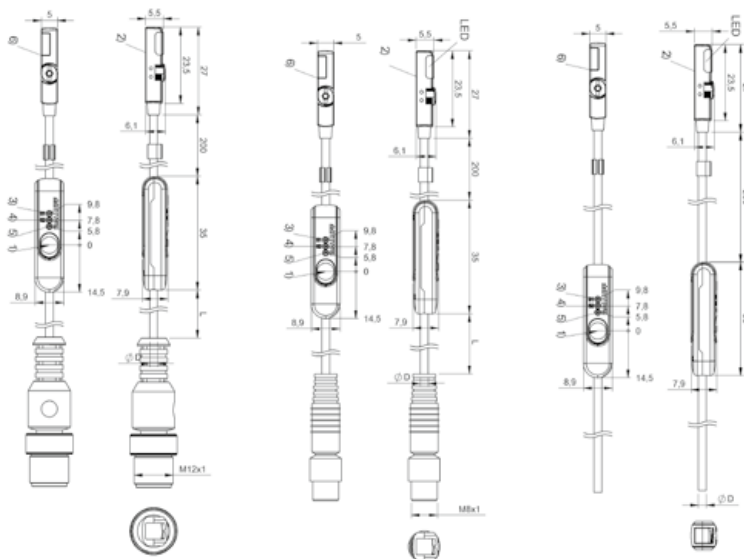


Housing material definitions:
PBT Polybuteneterephthalate

MAGNETIC FIELD SENSORS
T-SLOT



	BMF00LC BMF 235K-H-PI-C-A8-S4-00,3	BMF00LA BMF 235K-H-PI-C-A8-S75-00,3	BMF00L5 BMF 235K-H-PI-C-A8-PU-02
Dimension	23.5 x 6.2 x 5 mm	23.5 x 6.2 x 5 mm	23.5 x 6.2 x 5 mm
Connection	M12x1-Male, 4-pole, A-coded	M8x1-Male, 4-pole	
Connection type	Cable with connector, 0.30 m, PUR	Cable with connector, 0.30 m, PUR	Cable, 2.00 m, PUR
Application	Pneumatic cylinder with T-slot	Pneumatic cylinder with T-slot	Pneumatic cylinder with T-slot
Fastening detail	can be installed in T-slot from above	can be installed in T-slot from above	can be installed in T-slot from above
Housing material	PA 12	PA 12	PA 12
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Switching output	PNP Normally open (NO)	PNP Normally open (NO)	PNP Normally open (NO)
Operating voltage U_b	10...30 VDC	10...30 VDC	10...30 VDC
Ambient temperature	-25...80 °C	-25...80 °C	-25...80 °C
IP rating	IP67	IP67	IP67
Approval/conformity	CE, IO-Link, cULus, DC, Code 81U2, EAC	CE, IO-Link, cULus, DC, Code 81U2, EAC	CE, IO-Link, cULus, DC, Code 81U2, EAC
Process data	8 switch points Signal stability	8 switch points Signal stability	8 switch points Signal stability

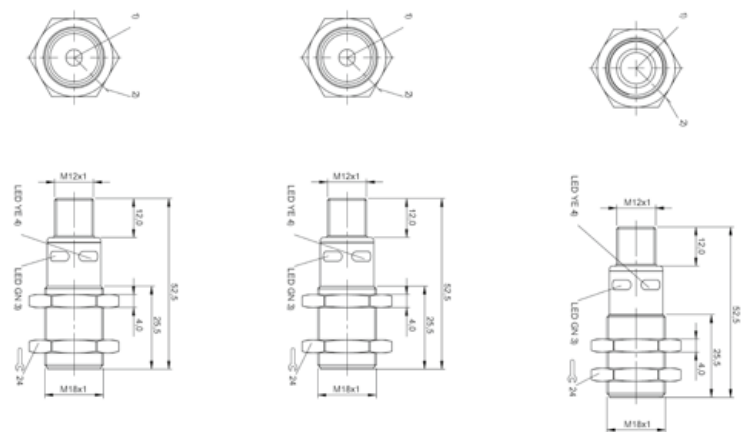


Housing material definitions:
PA Polyamide



ULTRASONIC SENSORS

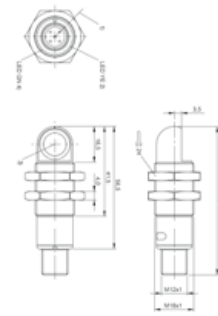
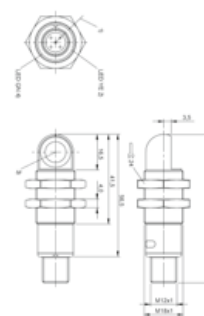
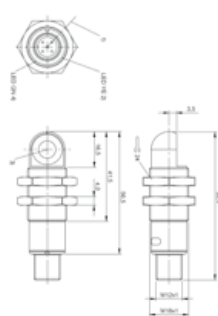
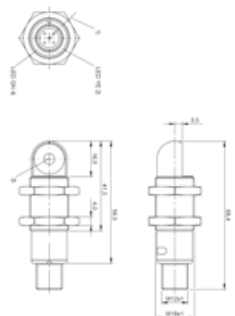
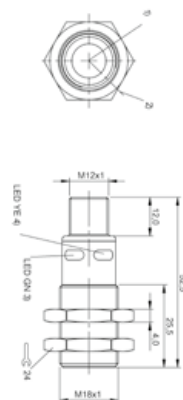
	BUS0020 BUS M18M1-GPXI-02/015-S92G	BUS0029 BUS M18M1-GPXI-03/025-S92G	BUS004Z BUS M18M1-GPXI-07/035-S92G
Style	Cylinder Converter straight	Cylinder Converter straight	Cylinder Converter straight
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
Switching output	PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull
Connection	Connector, M12x1-Male	Connector, M12x1-Male	Connector, M12x1-Male
Housing material	Brass PBT	Brass PBT	Brass PBT
Material sensing surface	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
Resolution	≤ 0.070 mm	≤ 0.070 mm	≤ 0.069 mm
Range	25...250 mm	30...350 mm	65...600 mm
Switching frequency	25 Hz	25 Hz	12 Hz
Approval/conformity	CE	CE	CE
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C
IP rating	IP67	IP67	IP67
Repeat accuracy	±0.15 % FS	±0.15 % FS	±0.15 % FS
Operating voltage U _b	10...30 VDC	10...30 VDC	10...30 VDC
Process data	Setpoint on/off Distance Value	Setpoint on/off Distance Value	Setpoint on/off Distance Value



Housing material definitions:
PBT Polybuteneterephthalate



BUS004P BUS M18M1-GPXI-12/100-S92G	BUS0023 BUS W18M1-GPXI-02/015-S92G	BUS002A BUS W18M1-GPXI-03/025-S92G	BUS004Y BUS W18M1-GPXI-07/035-S92G	BUS004N BUS W18M1-GPXI-12/100-S92G
Cylinder Converter straight	Cylinder Converter 90°	Cylinder Converter 90°	Cylinder Converter 90°	Tubular angled
IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull	PNP/NPN NO/NC push-pull
Connector, M12x1-Male	Connector, M12x1-Male	Connector, M12x1-Male	Connector, M12x1-Male	Connector, M12x1-Male
Brass PBT	Brass PBT	Brass PBT	Brass PBT	Brass PBT
PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass	PU foam epoxy resin glass
≤ 0.069 mm	≤ 0.070 mm	≤ 0.070 mm	≤ 0.069 mm	≤ 0.069 mm
120...1300 mm	25...250 mm	30...350 mm	65...600 mm	120...1300 mm
10 Hz	25 Hz	25 Hz	12 Hz	10 Hz
CE	CE	CE	CE	CE
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C
IP67	IP67	IP67	IP67	IP67
±0.15 % FS	±0.15 % FS	±0.15 % FS	±0.15 % FS	±0.15 % FS
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Setpoint on/off Distance Value	Setpoint on/off Distance Value	Setpoint on/off Distance Value	Setpoint on/off Distance Value	Setpoint on/off Distance Value

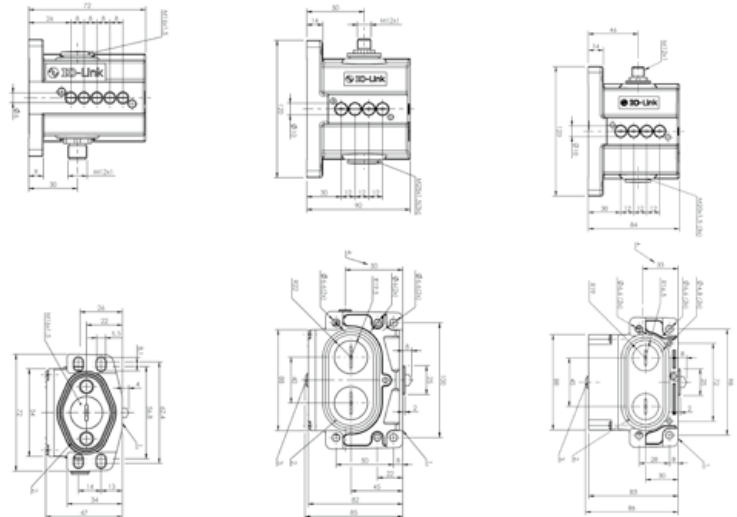




MULTIPLE POSITION MECHANICAL SWITCHES

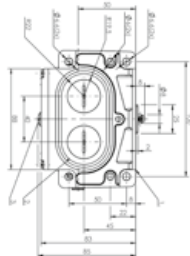
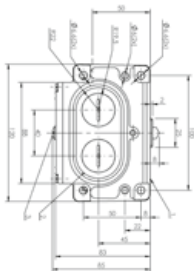
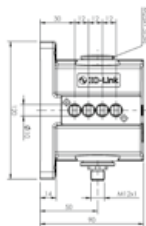
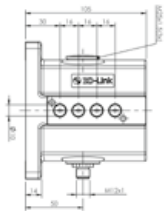
	BNS04T2 BNS 819-B05-D08-46-12-S4R-I	BNS04RA BNS 819-D04-D12-100-10-FD-S4L-I	BNS0510 BNS 819-D04-D12-62-10-FD-S4L-I	
Dimension	72 x 49 x 72 mm	120 x 85 x 90 mm	120 x 86 x 84 mm	
Housing material	Aluminum	Aluminum	Aluminum	
Number of switching positions	5x Chisel	4x Chisel	4x Chisel	
Version	Snap contact	Snap contact	Snap contact	
Operating principle	1-5. Switch position: Mechanical	1-4. Switch position: Mechanical	1-4. Switch position: Mechanical	
Switching frequency	Max 200/min	Max 200/min	Max 200/min	
Rated operating voltage Ue	24...28 VDC	24...28 VDC	24...28 VDC	
Installation	Vertical	Vertical	Vertical	
Approach direction	longitudinal, parallel to attachment surface	longitudinal, parallel to attachment surface	longitudinal, parallel to attachment surface	
Approach speed	1-5. Switch position: 20 m/min	1-4. Switch position: 40 m/min	1-4. Switch position: 40 m/min	
Switch position spacing	8 mm	12 mm	12 mm	
Connection type	1. Switch position: Connector	1. Switch position: Connector	1. Switch position: Connector	
Ambient temperature	-5...85 °C	-5...85 °C	-5...85 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE, IO-Link	CE, IO-Link	CE, IO-Link	

Other configurations available, contact the factory.





BNS04WF BNS 819-D04-D16-100-10-FD-S4R-I	BNS04RM BNS 819-D04-R12-100-10-FD-S4R-I			
120 x 85 x 105 mm	120 x 85 x 90 mm			
Aluminum	Aluminum			
4x Chisel	4x Roller			
Snap contact	Snap contact			
1-4. Switch position: Mechanical	1-4. Switch position: Mechanical			
Max 200/min	Max 200/min			
24...28 VDC	24...28 VDC			
Vertical	Vertical			
longitudinal, parallel to attachment surface	longitudinal, parallel to attachment surface			
1-4. Switch position: 40 m/min	1-4. Switch position: 60 m/min			
16 mm	12 mm			
1. Switch position: Connector	1. Switch position: Connector			
-5...85 °C	-5...85 °C			
IP67	IP67			
CE, IO-Link	CE, IO-Link			

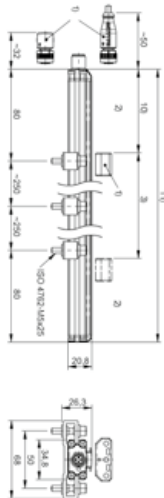


MAGNETOSTRICTIVE SENSORS
PROFILE STYLE



BTL6 BTL6-U110-Mxxx-PF-S4	
Style	Profile series
Fastening detail	Mounting clamps
Housing material	Aluminum
Magnets, number max.	1
Connection	Connector, M12x1, 4-pole
Interface	IO-Link 1.1
Measuring range	50...4572 mm
Sampling frequency max.	xxxx = 0050...1300: 1000 Hz xxxx = 1301...2700: 500 Hz xxxx = 2701...4572: 250 Hz
Resolution	≤ 5 μm
Non-linearity max.	xxxx = 0050...0500: ± 200 μm xxxx > 0500: ± 0.04% FS
Repeat accuracy	≤ 30 μm
Operating voltage U _b	18...30 VDC
Ambient temperature	-25...70 °C
IP rating	IP67 with connector
Approval/conformity	CE, cULus, EAC
Process data	Position value

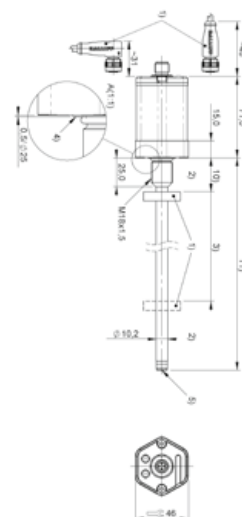
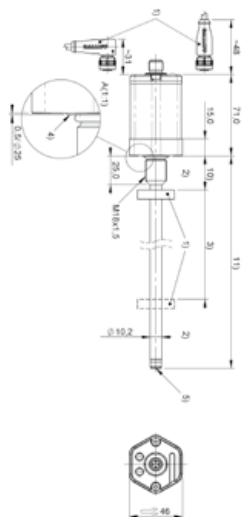
M_ _ _ _
Sensing length in mm from 50 mm to 4572 mm



MAGNETOSTRICTIVE SENSORS ROD STYLE



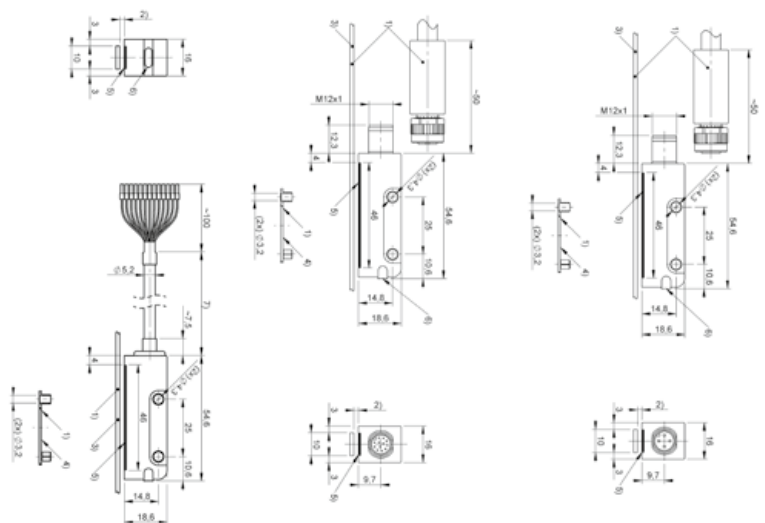
	BTL6 BTL6-U110-Mxxx-B-S4	BTL6 BTL6-U110-Mxxx-Z-S4
Style	Rod series	Rod series
Fastening detail	Threaded flange M18x1.5	Threaded flange 3/4"-16 UNF
Housing material	Anodized aluminum	Anodized aluminum
Flange material	Stainless steel (1.3960)	Stainless steel (1.3960)
Protection tube material	Stainless steel (1.4571)	Stainless steel (1.4571)
Magnets, number max.	2; Minimum distance between position encoders 65 mm.	2; Minimum distance between position encoders 65 mm.
Connection	Connector, M12x1, 4-pole	Connector, M12x1, 4-pole
Interface	IO-Link 1.1	IO-Link 1.1
Measuring range	50...4572 mm	50...4572 mm
Sampling frequency max.	xxxx = 0050...1300: 1000 Hz xxxx = 1301...2700: 500 Hz xxxx = 2701...4572: 250 Hz	xxxx = 0050...1300: 1000 Hz xxxx = 1301...2700: 500 Hz xxxx = 2701...4572: 250 Hz
Resolution	5 µm	5 µm
Non-linearity max.	xxxx = 0050...0500: ± 200 µm xxxx > 0500: ± 0.04% FS	xxxx = 0050...0500: ± 200 µm xxxx > 0500: ± 0.04% FS
Repeat accuracy	≤ 30 µm	≤ 30 µm
Operating voltage U _b	18...30 VDC	18...30 VDC
Ambient temperature	-40...85 °C	-40...85 °C
IP rating	IP67 with connector	IP67 with connector
Approval/conformity	CE, cULus, EAC	CE, cULus, EAC
Process data	2x Configurable values: Position, Velocity, Difference between magnets, Internal device temperatures	2x Configurable values: Position, Velocity, Difference between magnets, Internal device temperatures





MAGNETIC ENCODERS

	BML06FU BML SL1-ALZ0-U1ZZ-AU1L-KA05	BML06HC BML SL1-ALZ0-U1ZZ-AU1L-S284	BML06HE BML SL1-ALZ0-U1ZZ-ZU1L-S4
Dimension	16 x 18.6 x 54 mm	16 x 18.6 x 54 mm	16 x 18.6 x 54 mm
Connection	Cable, 5 m, PUR	Connector, M12x1-Male, 12-pole	Connector, M12x1-Male, 4-pole
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Analog output	Analog, sin/cos 1 Vpp	Analog, sin/cos 1 Vpp	
Measuring range	8190 mm	8190 mm	8190 mm
Resolution	1 µm	1 µm	1 µm
Read distance	0.01...1.3 mm	0.01...1.3 mm	0.01...1.3 mm
Non-linearity max.	±15 µm	±15 µm	±15 µm
Reference signal	absolute	absolute	absolute
Operating voltage Ub	18...30 VDC	18...30 VDC	18...30 VDC
Ambient temperature	-10...70 °C	-10...70 °C	-10...70 °C
IP rating	IP67	IP67	IP67
Approval/conformity	cURus, CE	cURus, CE	cURus, CE
Process data	Position Value 1 µm/digit	Position Value 1 µm/digit	Position Value 1 µm/digit





PRESSURE SENSORS – PNP



Two programmable switching points (NO or NC)

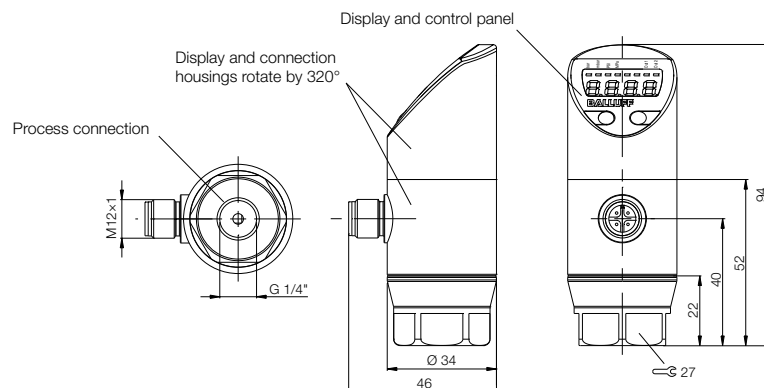


One programmable switching point and analog output 0...10 V DC



One programmable switching point and analog output 4...20 mA

-1...2 bar (-14.5...29 psi)	PNP	BSP0086 BSP V002-EV002-D00S1B-S4	BSP008L BSP V002-EV002-A00S1B-S4	BSP0091 BSP V002-EV002-A02S1B-S4
-1...10 bar (-14.5...145 psi)	PNP	BSP0087 BSP V010-EV002-D00S1B-S4	BSP008M BSP V010-EV002-A00S1B-S4	BSP0092 BSP V010-EV002-A02S1B-S4
0...2 bar (0...29 psi)	PNP	BSP0088 BSP B002-EV002-D00S1B-S4	BSP008N BSP B002-EV002-A00S1B-S4	BSP0093 BSP B002-EV002-A02S1B-S4
0...5 bar (0...73 psi)	PNP	BSP0089 BSP B005-EV002-D00S1B-S4	BSP008P BSP B005-EV002-A00S1B-S4	BSP0094 BSP B005-EV002-A02S1B-S4
0...10 bar (0...145 psi)	PNP	BSP008A BSP B010-EV002-D00S1B-S4	BSP008R BSP B010-EV002-A00S1B-S4	BSP0095 BSP B010-EV002-A02S1B-S4
0...20 bar (0...290 psi)	PNP	BSP008C BSP B020-EV002-D00S1B-S4	BSP008T BSP B020-EV002-A00S1B-S4	BSP0096 BSP B020-EV002-A02S1B-S4
0...50 bar (0...725 psi)	PNP	BSP008E BSP B050-EV002-D00S1B-S4	BSP008U BSP B050-EV002-A00S1B-S4	BSP0097 BSP B050-EV002-A02S1B-S4
0...100 bar (0...1450 psi)	PNP	BSP008F BSP B100-EV002-D00S1B-S4	BSP008W BSP B100-EV002-A00S1B-S4	BSP0098 BSP B100-EV002-A02S1B-S4
0...250 bar (0...3626 psi)	PNP	BSP008H BSP B250-EV002-D00S1B-S4	BSP008Y BSP B250-EV002-A00S1B-S4	BSP0099 BSP B250-EV002-A02S1B-S4
0...400 bar (0...5802 psi)	PNP	BSP008J BSP B400-EV002-D00S1B-S4	BSP008Z BSP B400-EV002-A00S1B-S4	BSP009A BSP B400-EV002-A02S1B-S4
0...600 bar (0...8702 psi)	PNP	BSP008K BSP B600-EV002-D00S1B-S4	BSP0090 BSP B600-EV002-A00S1B-S4	BSP009C BSP B600-EV002-A02S1B-S4
Interface		IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel (1.4301), PA 6.6	Stainless steel (1.4301), PA 6.6	Stainless steel (1.4301), PA 6.6
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C	-40...125 °C
Operating voltage U_b		18...30 VDC	18...30 VDC	18...30 VDC
IP rating		IP67	IP67	IP67
Process connection		G 1/4" (DIN 3852)	G 1/4" (DIN 3852)	G 1/4" (DIN 3852)



Housing material definitions:
PA Polyamide



PRESSURE SENSORS – NPN



Two programmable switching points (NO or NC)

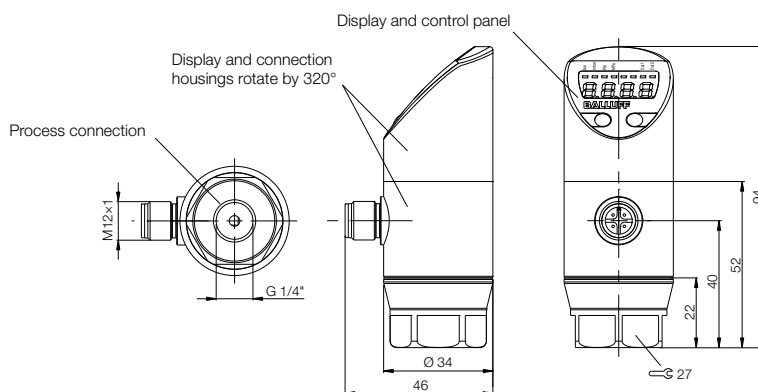


One programmable switching point and analog output 0...10 V DC



One programmable switching point and analog output 4...20 mA

-1...2 bar (-14.5...29 psi)	NPN	BSP009U BSP V002-EV002-D01S1B-S4	BSP00C2 BSP V002-EV002-A01S1B-S4	BSP009E BSP V002-EV002-A03S1B-S4
-1...10 bar (-14.5...145 psi)	NPN	BSP009W BSP V010-EV002-D01S1B-S4	BSP00C3 BSP V010-EV002-A01S1B-S4	BSP009F BSP V010-EV002-A03S1B-S4
0...2 bar (0...29 psi)	NPN	BSP009Y BSP B002-EV002-D01S1B-S4	BSP00C4 BSP B002-EV002-A01S1B-S4	BSP009H BSP B002-EV002-A03S1B-S4
0...5 bar (0...73 psi)	NPN	BSP009Z BSP B005-EV002-D01S1B-S4	BSP00C5 BSP B005-EV002-A01S1B-S4	BSP009J BSP B005-EV002-A03S1B-S4
0...10 bar (0...145 psi)	NPN	BSP00A0 BSP B010-EV002-D01S1B-S4	BSP00C6 BSP B010-EV002-A01S1B-S4	BSP009K BSP B010-EV002-A03S1B-S4
0...20 bar (0...290 psi)	NPN	BSP00A1 BSP B020-EV002-D01S1B-S4	BSP00C7 BSP B020-EV002-A01S1B-S4	BSP009L BSP B020-EV002-A03S1B-S4
0...50 bar (0...725 psi)	NPN	BSP00A2 BSP B050-EV002-D01S1B-S4	BSP00C8 BSP B050-EV002-A01S1B-S4	BSP009M BSP B050-EV002-A03S1B-S4
0...100 bar (0...1450 psi)	NPN	BSP00A3 BSP B100-EV002-D01S1B-S4	BSP00C9 BSP B100-EV002-A01S1B-S4	BSP009N BSP B100-EV002-A03S1B-S4
0...250 bar (0...3626 psi)	NPN	BSP00A4 BSP B250-EV002-D01S1B-S4	BSP00CA BSP B250-EV002-A01S1B-S4	BSP009P BSP B250-EV002-A03S1B-S4
0...400 bar (0...5802 psi)	NPN	BSP00A5 BSP B400-EV002-D01S1B-S4	BSP00CC BSP B400-EV002-A01S1B-S4	BSP009R BSP B400-EV002-A03S1B-S4
0...600 bar (0...8702 psi)	NPN	BSP00A6 BSP B600-EV002-D01S1B-S4	BSP00CE BSP B600-EV002-A01S1B-S4	BSP009T BSP B600-EV002-A03S1B-S4
Interface		IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel (1.4301), PA 6.6	Stainless steel (1.4301), PA 6.6	Stainless steel (1.4301), PA 6.6
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C	-40...125 °C
Operating voltage Ub		18...30 VDC	18...30 VDC	18...30 VDC
IP rating		IP67	IP67	IP67
Process connection		G 1/4" (DIN 3852)	G 1/4" (DIN 3852)	G 1/4" (DIN 3852)





PRESSURE SENSORS – PNP



Two programmable switching points (NO or NC)

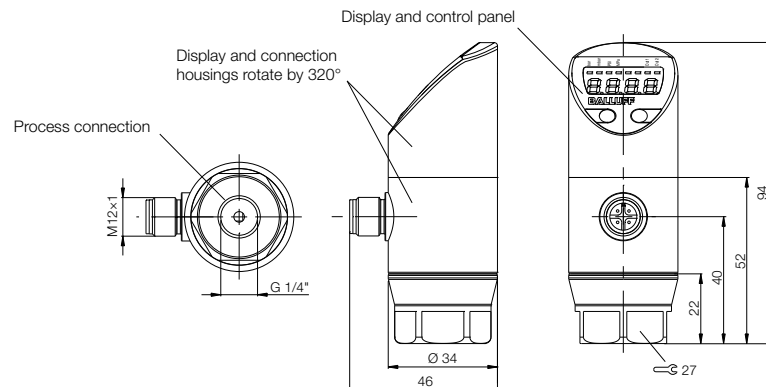


One programmable switching point and analog output 0...10 V DC



One programmable switching point and analog output 4...20 mA

-1...2 bar (-14.5...29 psi)	PNP	BSP00CF BSP V002-EV003-D00S1B-S4	BSP00AM BSP V002-EV003-A00S1B-S4	BSP00A7 BSP V002-EV003-A02S1B-S4
-1...10 bar (-14.5...145 psi)	PNP	BSP00CH BSP V010-EV003-D00S1B-S4	BSP00AN BSP V010-EV003-A00S1B-S4	BSP00A8 BSP V010-EV003-A02S1B-S4
0...2 bar (0...29 psi)	PNP	BSP00CJ BSP B002-EV003-D00S1B-S4	BSP00AP BSP B002-EV003-A00S1B-S4	BSP00A9 BSP B002-EV003-A02S1B-S4
0...5 bar (0...73 psi)	PNP	BSP00CK BSP B005-EV003-D00S1B-S4	BSP00AR BSP B005-EV003-A00S1B-S4	BSP00AA BSP B005-EV003-A02S1B-S4
0...10 bar (0...145 psi)	PNP	BSP00CL BSP B010-EV003-D00S1B-S4	BSP00AT BSP B010-EV003-A00S1B-S4	BSP00AC BSP B010-EV003-A02S1B-S4
0...20 bar (0...290 psi)	PNP	BSP00CM BSP B020-EV003-D00S1B-S4	BSP00AU BSP B020-EV003-A00S1B-S4	BSP00AE BSP B020-EV003-A02S1B-S4
0...50 bar (0...725 psi)	PNP	BSP00CN BSP B050-EV003-D00S1B-S4	BSP00AW BSP B050-EV003-A00S1B-S4	BSP00AF BSP B050-EV003-A02S1B-S4
0...100 bar (0...1450 psi)	PNP	BSP00CP BSP B100-EV003-D00S1B-S4	BSP00AY BSP B100-EV003-A00S1B-S4	BSP00AH BSP B100-EV003-A02S1B-S4
0...250 bar (0...3626 psi)	PNP	BSP00CR BSP B250-EV003-D00S1B-S4	BSP00AZ BSP B250-EV003-A00S1B-S4	BSP00AJ BSP B250-EV003-A02S1B-S4
0...400 bar (0...5802 psi)	PNP	BSP00CT BSP B400-EV003-D00S1B-S4	BSP00C0 BSP B400-EV003-A00S1B-S4	BSP00AK BSP B400-EV003-A02S1B-S4
0...600 bar (0...8702 psi)	PNP	BSP00CU BSP B600-EV003-D00S1B-S4	BSP00C1 BSP B600-EV003-A00S1B-S4	BSP00AL BSP B600-EV003-A02S1B-S4
Interface		IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel	Stainless steel	Stainless steel
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C	-40...125 °C
Operating voltage U_b		18...30 VDC	18...30 VDC	18...30 VDC
IP rating		IP67	IP67	IP67
Process connection		G 1/4" (DIN 3852)	G 1/4" (DIN 3852)	G 1/4" (DIN 3852)





PRESSURE SENSORS – NPN



Two programmable switching points (NO or NC)

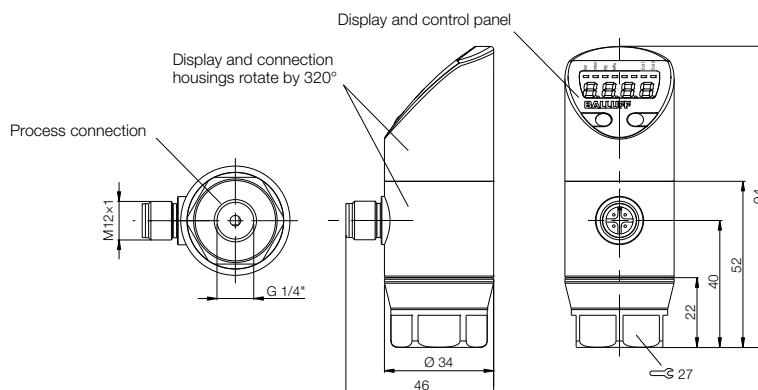


One programmable switching point and analog output 0...10 V DC



One programmable switching point and analog output 4...20 mA

-1...2 bar (-14.5...29 psi)	NPN	BSP00CW BSP V002-EV003-D01S1B-S4	BSP00E8 BSP V002-EV003-A01S1B-S4	BSP00EN BSP V002-EV003-A03S1B-S4
-1...10 bar (-14.5...145 psi)	NPN	BSP00CY BSP V010-EV003-D01S1B-S4	BSP00E9 BSP V010-EV003-A01S1B-S4	BSP00EP BSP V010-EV003-A03S1B-S4
0...2 bar (0...29 psi)	NPN	BSP00CZ BSP B002-EV003-D01S1B-S4	BSP00EA BSP B002-EV003-A01S1B-S4	BSP00ER BSP V010-EV003-A03S1B-S4
0...5 bar (0...73 psi)	NPN	BSP00E0 BSP B005-EV003-D01S1B-S4	BSP00EC BSP B005-EV003-A01S1B-S4	BSP00ET BSP B005-EV003-A03S1B-S4
0...10 bar (0...145 psi)	NPN	BSP00E1 BSP B010-EV003-D01S1B-S4	BSP00EE BSP B010-EV003-A01S1B-S4	BSP00EU BSP B010-EV003-A03S1B-S4
0...20 bar (0...290 psi)	NPN	BSP00E2 BSP B020-EV003-D01S1B-S4	BSP00EF BSP B020-EV003-A01S1B-S4	BSP00EW BSP B020-EV003-A03S1B-S4
0...50 bar (0...725 psi)	NPN	BSP00E3 BSP B050-EV003-D01S1B-S4	BSP00EH BSP B050-EV003-A01S1B-S4	BSP00EY BSP B020-EV003-A03S1B-S4
0...100 bar (0...1450 psi)	NPN	BSP00E4 BSP B100-EV003-D01S1B-S4	BSP00EJ BSP B100-EV003-A01S1B-S4	BSP00EZ BSP B100-EV003-A03S1B-S4
0...250 bar (0...3626 psi)	NPN	BSP00E5 BSP B250-EV003-D01S1B-S4	BSP00EK BSP B250-EV003-A01S1B-S4	BSP00F0 BSP B250-EV003-A03S1B-S4
0...400 bar (0...5802 psi)	NPN	BSP00E6 BSP B400-EV003-D01S1B-S4	BSP00EL BSP B400-EV003-A01S1B-S4	BSP00F1 BSP B400-EV003-A03S1B-S4
0...600 bar (0...8702 psi)	NPN	BSP00E7 BSP B600-EV003-D01S1B-S4	BSP00EM BSP B600-EV003-A01S1B-S4	BSP00F2 BSP B600-EV003-A03S1B-S4
Interface		IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel	Stainless steel	Stainless steel
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C	-40...125 °C
Operating voltage Ub		18...30 VDC	18...30 VDC	18...30 VDC
IP rating		IP67	IP67	IP67
Process connection		G 1/4" (DIN 3852)	G 1/4" (DIN 3852)	G 1/4" (DIN 3852)





PRESSURE SENSORS – PNP NO/NC

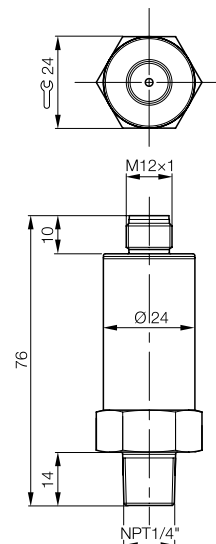
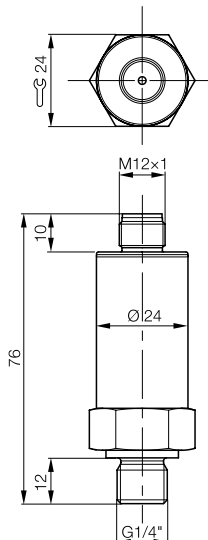


Process connection
G 1/4"



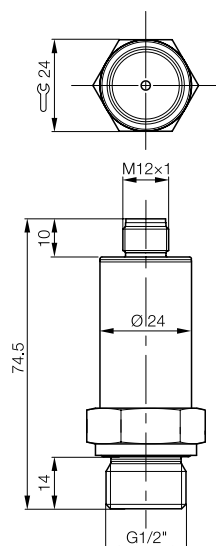
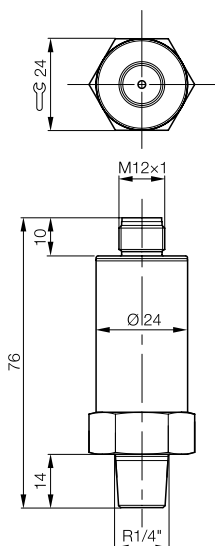
Process connection
NPT 1/4"

-1...2 bar (-14.5...29 psi)	PNP NO/NC	BSP00PJ BSP V002-DV004-D06S1A-S4	BSP00T5 BSP V002-FV004-D06S1A-S4
-1...10 bar (-14.5...145 psi)	PNP NO/NC	BSP00PK BSP V010-DV004-D06S1A-S4	BSP00T6 BSP V010-FV004-D06S1A-S4
0...2 bar (0...29 psi)	PNP NO/NC	BSP00PL BSP B002-DV004-D06S1A-S4	BSP00T7 BSP B002-FV004-D06S1A-S4
0...5 bar (0...73 psi)	PNP NO/NC	BSP00PM BSP B005-DV004-D06S1A-S4	BSP00T8 BSP B005-FV004-D06S1A-S4
0...10 bar (0...145 psi)	PNP NO/NC	BSP00PN BSP B010-DV004-D06S1A-S4	BSP00T9 BSP B010-FV004-D06S1A-S4
0...20 bar (0...290 psi)	PNP NO/NC	BSP00PP BSP B020-DV004-D06S1A-S4	BSP00TA BSP B020-FV004-D06S1A-S4
0...50 bar (0...725 psi)	PNP NO/NC	BSP00PR BSP B050-DV004-D06S1A-S4	BSP00TC BSP B050-FV004-D06S1A-S4
0...100 bar (0...1450 psi)	PNP NO/NC	BSP00PT BSP B100-DV004-D06S1A-S4	BSP00TE BSP B100-FV004-D06S1A-S4
0...250 bar (0...3626 psi)	PNP NO/NC	BSP00PU BSP B250-DV004-D06S1A-S4	BSP00TF BSP B250-FV004-D06S1A-S4
0...400 bar (0...5802 psi)	PNP NO/NC	BSP00PW BSP B400-DV004-D06S1A-S4	BSP00TH BSP B400-FV004-D06S1A-S4
0...600 bar (0...8702 psi)	PNP NO/NC	BSP00PY BSP B600-DV004-D06S1A-S4	BSP00TJ BSP B600-FV004-D06S1A-S4
Interface		IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel	Stainless steel
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C
Operating voltage U_b		18...30 VDC	18...30 VDC
IP rating		IP67	IP67
Process connection		G 1/4" (DIN 3852)	NPT 1/4"





BSP00UC BSP V002-KV004-D06S1A-S4	BSP00RR BSP V002-HV004-D06S1A-S4	
BSP00UE BSP V010-KV004-D06S1A-S4	BSP00RT BSP V010-HV004-D06S1A-S4	
BSP00UF BSP B002-KV004-D06S1A-S4	BSP00RU BSP B002-HV004-D06S1A-S4	
BSP00UH BSP B005-KV004-D06S1A-S4	BSP00RW BSP B005-HV004-D06S1A-S4	
BSP00UJ BSP B010-KV004-D06S1A-S4	BSP00RY BSP B010-HV004-D06S1A-S4	
BSP00UK BSP B020-KV004-D06S1A-S4	BSP00RZ BSP B020-HV004-D06S1A-S4	
BSP00UL BSP B050-KV004-D06S1A-S4	BSP00T0 BSP B050-HV004-D06S1A-S4	
BSP00UM BSP B100-KV004-D06S1A-S4	BSP00T1 BSP B100-HV004-D06S1A-S4	
BSP00UN BSP B250-KV004-D06S1A-S4	BSP00T2 BSP B250-HV004-D06S1A-S4	
BSP00UP BSP B400-KV004-D06S1A-S4	BSP00T3 BSP B400-HV004-D06S1A-S4	
BSP00UR BSP B600-KV004-D06S1A-S4	BSP00T4 BSP B600-HV004-D06S1A-S4	
IO-Link 1.1	IO-Link 1.1	
Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	
Stainless steel	Stainless steel	
±0.5 % FSO BFSL	±0.5 % FSO BFSL	
-25...85 °C	-25...85 °C	
-40...125 °C	-40...125 °C	
18...30 VDC	18...30 VDC	
IP67	IP67	
R 1/4"	G 1/2" (DIN 3852)	



PRESSURE SENSORS – NPN NO/NC

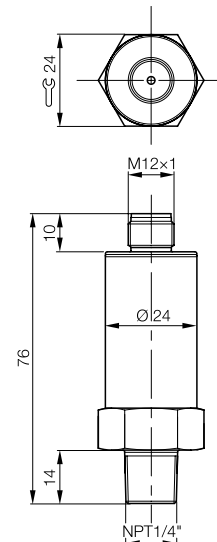
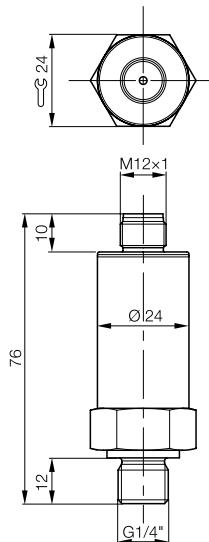


Process connection G 1/4"



Process connection NPT 1/4"

-1...2 bar (-14.5...29 psi)	NPN NO/NC	BSP00PZ BSP V002-DV004-D05S1A-S4	BSP00TK BSP V002-FV004-D05S1A-S4
-1...10 bar (-14.5...145 psi)	NPN NO/NC	BSP00R0 BSP V010-DV004-D05S1A-S4	BSP00TL BSP V010-FV004-D05S1A-S4
0...2 bar (0...29 psi)	NPN NO/NC	BSP00R1 BSP B002-DV004-D05S1A-S4	BSP00TM BSP B002-FV004-D05S1A-S4
0...5 bar (0...73 psi)	NPN NO/NC	BSP00R2 BSP B005-DV004-D05S1A-S4	BSP00TN BSP B005-FV004-D05S1A-S4
0...10 bar (0...145 psi)	NPN NO/NC	BSP00R3 BSP B010-DV004-D05S1A-S4	BSP00TP BSP B010-FV004-D05S1A-S4
0...20 bar (0...290 psi)	NPN NO/NC	BSP00R4 BSP B020-DV004-D05S1A-S4	BSP00TR BSP B020-FV004-D05S1A-S4
0...50 bar (0...725 psi)	NPN NO/NC	BSP00R5 BSP B050-DV004-D05S1A-S4	BSP00TT BSP B050-FV004-D05S1A-S4
0...100 bar (0...1450 psi)	NPN NO/NC	BSP00R6 BSP B100-DV004-D05S1A-S4	BSP00TU BSP B100-FV004-D05S1A-S4
0...250 bar (0...3626 psi)	NPN NO/NC	BSP00R7 BSP B250-DV004-D05S1A-S4	BSP00TW BSP B250-FV004-D05S1A-S4
0...400 bar (0...5802 psi)	NPN NO/NC	BSP00R8 BSP B400-DV004-D05S1A-S4	BSP00TY BSP B400-FV004-D05S1A-S4
0...600 bar (0...8702 psi)	NPN NO/NC	BSP00R9 BSP B600-DV004-D05S1A-S4	BSP00TZ BSP B600-FV004-D05S1A-S4
Interface		IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		Stainless steel	Stainless steel
Accuracy		±0.5 % FSO BFSL	±0.5 % FSO BFSL
Ambient temperature		-25...85 °C	-25...85 °C
Media temperature		-40...125 °C	-40...125 °C
Operating voltage U_b		18...30 VDC	18...30 VDC
IP rating		IP67	IP67
Process connection		G 1/4" (DIN 3852)	NPT 1/4"



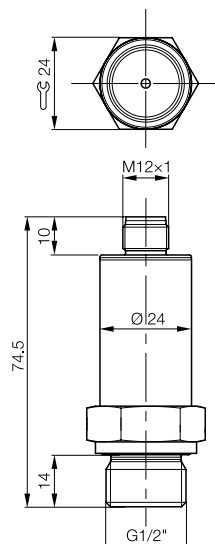
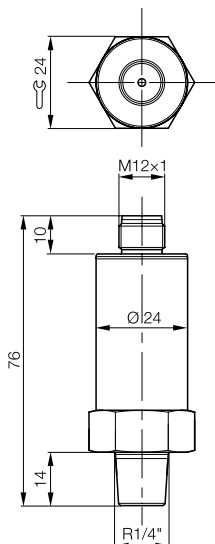


Process
connection
R 1/4"



Process
connection
G 1/2 "

BSP00U0 BSP V002-KV004-D05S1A-S4	BSP00RA BSP V002-HV004-D05S1A-S4	
BSP00U1 BSP V010-KV004-D05S1A-S4	BSP00RC BSP V010-HV004-D05S1A-S4	
BSP00U2 BSP B002-KV004-D05S1A-S4	BSP00RE BSP B002-HV004-D05S1A-S4	
BSP00U3 BSP B005-KV004-D05S1A-S4	BSP00RF BSP B005-HV004-D05S1A-S4	
BSP00U4 BSP B010-KV004-D05S1A-S4	BSP00RH BSP B010-HV004-D05S1A-S4	
BSP00U5 BSP B020-KV004-D05S1A-S4	BSP00RJ BSP B020-HV004-D05S1A-S4	
BSP00U6 BSP B020-KV004-D05S1A-S4	BSP00RK BSP B050-HV004-D05S1A-S4	
BSP00U7 BSP B100-KV004-D05S1A-S4	BSP00RL BSP B100-HV004-D05S1A-S4	
BSP00U8 BSP B250-KV004-D05S1A-S4	BSP00RM BSP B250-HV004-D05S1A-S4	
BSP00U9 BSP B400-KV004-D05S1A-S4	BSP00RN BSP B400-HV004-D05S1A-S4	
BSP00UA BSP B600-KV004-D05S1A-S4	BSP00RP BSP B600-HV004-D05S1A-S4	
IO-Link 1.1	IO-Link 1.1	
Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole	
Stainless steel	Stainless steel	
±0.5 % FSO BFSL	±0.5 % FSO BFSL	
-25...85 °C	-25...85 °C	
-40...125 °C	-40...125 °C	
18...30 VDC	18...30 VDC	
IP67	IP67	
R 1/4"	G 1/2" (DIN 3852)	





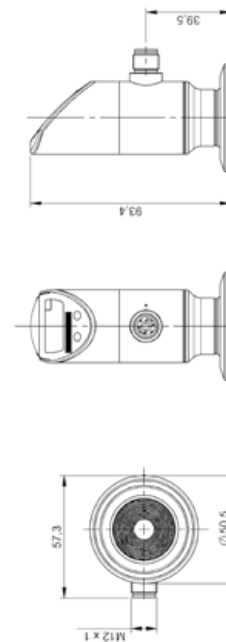
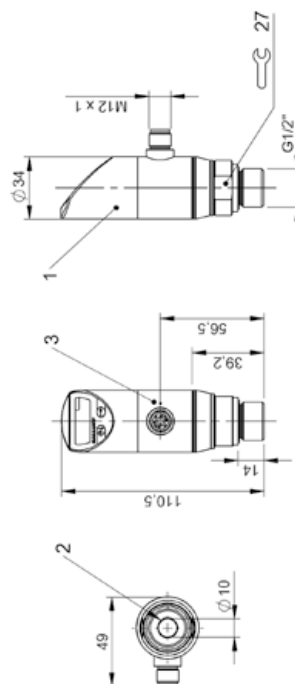
Process connection
G 1/2"




Process connection
1-1/2" Clamp

PRESSURE SENSORS – PNP

-1...50 bar (-14.5...725 psi)	PNP	BSP00LR BSP V050-HV002-D00S1B-S4-001	
0...10 bar (0...145 psi)	PNP	BSP00LP BSP B010-HV002-D00S1B-S4-001	
0...100 mbar (0...1.4 psi)	PNP		BSP00UT BSP M100-ZT006-A02S1B-S4-006
0...250 mbar (0...3.6 psi)	PNP		BSP00UU BSP M250-ZT006-A02S1B-S4-006
0...500 mbar (0...7.2 psi)	PNP		BSP00UW BSP M500-ZT006-A02S1B-S4-006
0...750 mbar (0...10.8 psi)	PNP		BSP00UY BSP M750-ZT006-A02S1B-S4-006
0 mbar...1 bar (0...14.5 psi)	PNP		BSP00UZ BSP B001-ZT006-A02S1B-S4-006
0 mbar...2 bar (0...29 psi)	PNP		BSP00W0 BSP B002-ZT006-A02S1B-S4-006
Interface		IO-Link 1.1	IO-Link 1.1
Connection		Connector, M12x1-Male, 4-pole	Connector, M12x1-Male, 4-pole
Housing material		PVDF	Stainless steel (1.4404)
Accuracy		±0.5 % FSO BFSL	±0.25 % FSO BFSL
Ambient temperature		-25...85 °C	-40...85 °C
Media temperature		-25...125 °C	-10...125 °C
Operating voltage U_b		18...36 VDC	18...36 VDC
IP rating		IP67	IP67
Process connection		G 1/2"	1 1/2" Clamp



Housing material definitions:
PVDF Polyvinylidenfluoride



Automatic identification and tracking in production

RFID – RADIO FREQUENCY IDENTIFICATION

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Our industrial RFID systems help to give you visibility in a modern production facility. Objects can be automatically identified and traced using RFID. To do this, a data carrier that functions as a memory is attached to the object to be identified. The data is transferred between the data carrier and read/write head and via the processor unit to the controller.

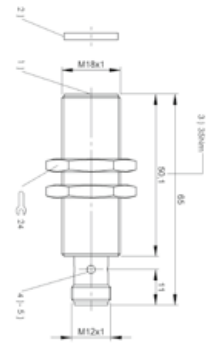
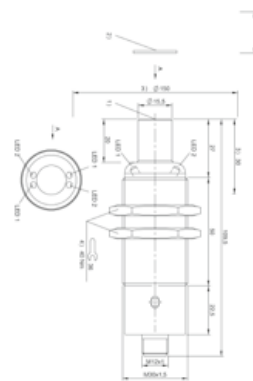
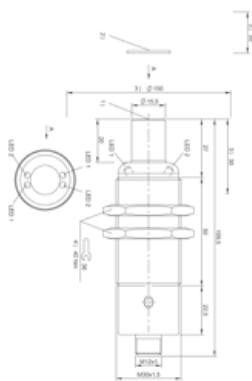
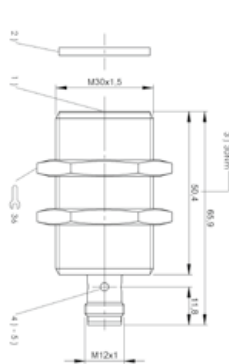
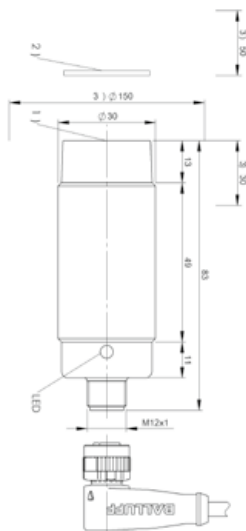
Balluff offers a broad selection of innovative products for the low frequency (LF), high frequency (HF) and ultra-high frequency (UHF) range. With the BIS V frequency-independent processor unit, all systems can be flexibly combined with each other.

Your Balluff solutions

- RFID system HF (13.56 MHz) BIS M read/write heads
- RFID system LF (125 kHz) BIS L read only heads
- RFID system LF (125 kHz) BIS V IO-Link master



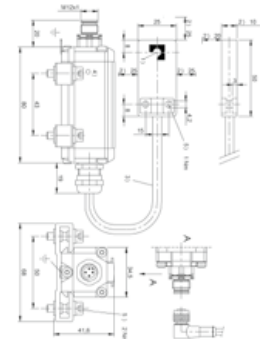
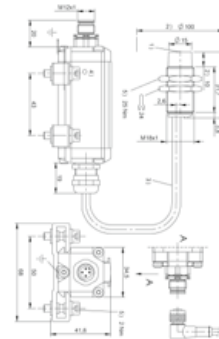
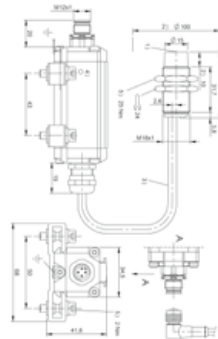
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HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 30 x 83 mm	Ø 30 x 65.9 mm	Ø 30 x 109.5 mm	Ø 30 x 109.5 mm	Ø 18 x 65 mm
with clear zone (in steel)	for flush mounting (in steel)	with clear zone (in steel)	with clear zone (in steel)	for flush mounting (in steel)
round	round	round	round	round
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
Stainless steel (1.4404), Adapter PA 6	Brass, Nickel-plated brass nuts	Brass, Nickel-plated brass nuts	Brass, Nickel-plated brass nuts	Brass, Nickel-plated brass nuts
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2
0...70 °C	0...70 °C	0...70 °C	0...70 °C	0...70 °C
IP68	IP67	IP67	IP67	IP67
UL-FILE E227256, Vol.X1, BIS, CE, Ecolab	CE	UL-FILE E227256, Vol.X1, BIS, CE	CE, UL-FILE E227256, Vol. X1, BIS	CE
10 byte buffer	10 byte buffer	10 byte buffer	32 byte buffer	10 byte buffer



RFID SYSTEM HF (13.56 MHz) BIS M
READ/WRITE HEADS



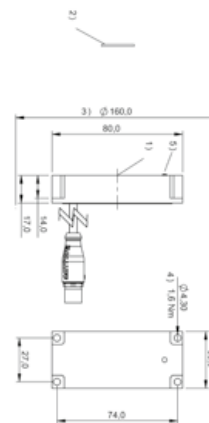
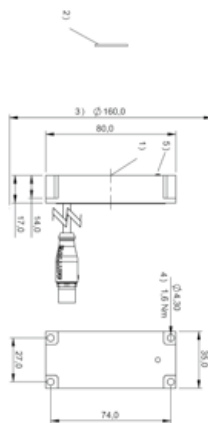
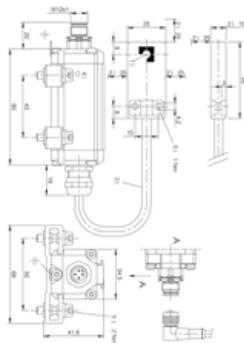
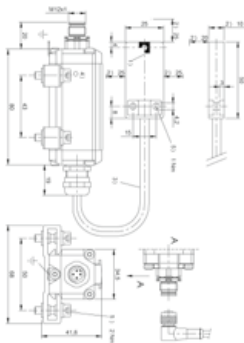
	BIS00LW BIS M-402-045-002-07-S4	BIS0105 BIS M-402-072-002-07-S4	BIS00M1 BIS M-402-045-004-07-S4	
Product group	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	
Dimension	Ø 18 x 45.5 mm	Ø 18 x 45.5 mm	25 x 10 x 50 mm	
Installation	with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)	
Antenna type	round	round	round	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Housing material	Brass, Interface aluminum	Brass, Interface aluminum	ABS, GF16, Interface aluminum	
Interface	IO-Link 1.1	IO-Link 1.0	IO-Link 1.1	
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	
Ambient temperature	0...70 °C	0...70 °C	0...70 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	
Process data	10 byte buffer	32 byte buffer	10 byte buffer	



Housing material definitions:
 ABS Acrylonitrile Butadiene Styrene
 GF Glass Fiber



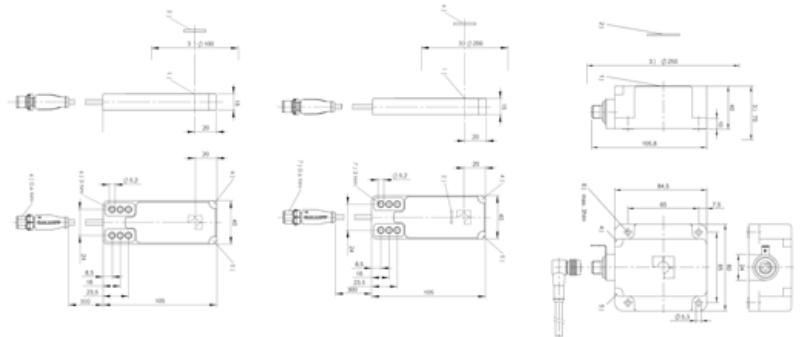
BIS0126 BIS M-402-045-007-07-S4	BIS0106 BIS M-402-072-004-07-S4	BIS012N BIS M-405-045-001-07-S4	BIS0155 BIS M-405-045-008-07-S4	
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	
25 x 10 x 50 mm	25 x 10 x 50 mm	35 x 17 x 80 mm	35 x 17 x 80 mm	
with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)	
Rod (metal mount)	round	M18 round	M30 round	
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
ABS, GF16, Interface aluminum	ABS, GF16, Interface aluminum	ABS	ABS	
IO-Link 1.1	IO-Link 1.0	IO-Link 1.1	IO-Link 1.1	
18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	
0...70 °C	0...70 °C	0...70 °C	0...70 °C	
IP67	IP67	IP67	IP67	
CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	UL-FILE E227256, Vol. X1, BIS, CE	
10 byte buffer	32 byte buffer	10 byte buffer	10 byte buffer	



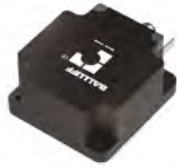
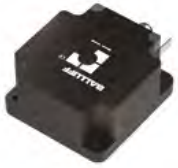
RFID SYSTEM HF (13.56 MHz) BIS M
READ/WRITE HEADS



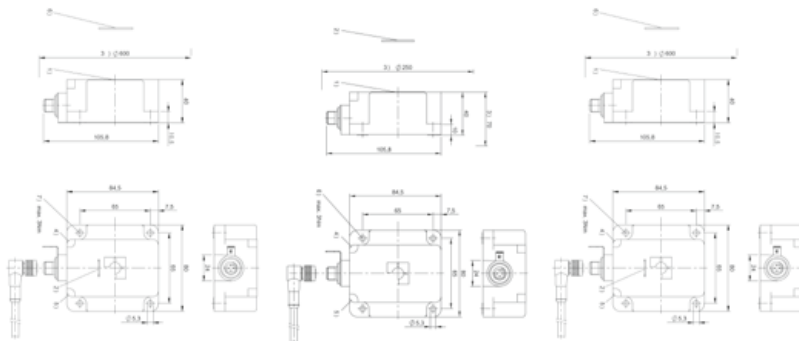
	BIS014J BIS M-408-045-001-07-S4	BIS014K BIS M-458-045-001-07-S4	BIS00LK BIS M-401-045-001-07-S4	
Product group	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)	
Dimension	40 x 15 x 105 mm	40 x 15 x 105 mm	80 x 40 x 84.5 mm	
Installation	with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)	
Antenna type	round	Rod (metal mount)	round	
Connection	Male, 4-pole	Male, 4-pole	M12x1-Male, 4-pole, A-coded	
Housing material	Die-cast zinc	Die-cast zinc	PBT	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	
Ambient temperature	0...70 °C	0...70 °C	0...70 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE	CE	CE, UL-FILE E227256, Vol. X1, BIS	
Process data	10 byte buffer	10 byte buffer	10 byte buffer	



Housing material definitions:
PBT Polybuteneterephthalate



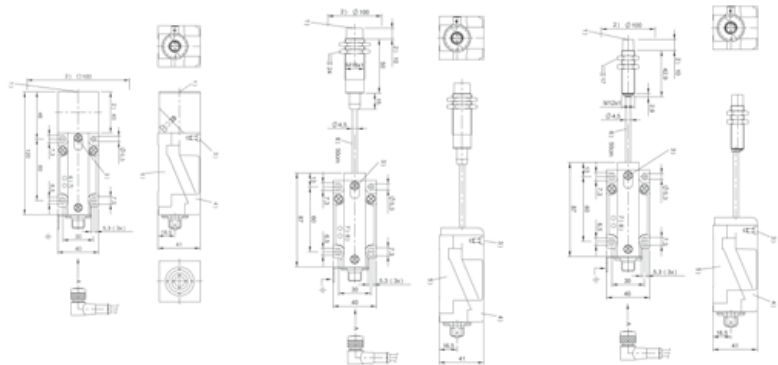
BIS00LM BIS M-451-045-001-07-S4	BIS0102 BIS M-401-072-001-07-S4	BIS0103 BIS M-451-072-001-07-S4		
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)		
80 x 40 x 84.5 mm	80 x 40 x 84.5 mm	80 x 40 x 84.5 mm		
with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)		
Rod (metal mount)	round	Rod (metal mount)		
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded		
PBT	PBT	PBT		
IO-Link 1.1	IO-Link 1.1	IO-Link 1.0		
18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2	18...30 VDC Supports only LPS/Class 2		
0...70 °C	0...70 °C	0...70 °C		
IP67	IP67	IP67		
UL-FILE E227256, Vol.X1, BIS, CE	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS		
10 byte buffer	32 byte buffer	32 byte buffer		



RFID SYSTEM LF (125 kHz) BIS L
READ/WRITE HEADS



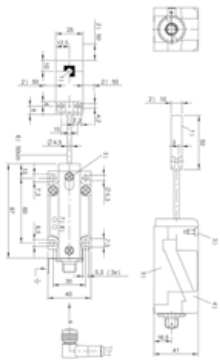
	BIS00C7 BIS L-409-045-001-07-S4	BIS00E0 BIS L-409-045-002-07-S4	BIS00E1 BIS L-409-045-003-07-S4	
Product group	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)	
Dimension	40 x 41 x 120 mm	Ø 18 x 75 mm	Ø 12 x 53 mm	
Installation	with clear zone (in steel)	with clear zone (in steel)	with clear zone (in steel)	
Antenna type	round	round	round	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Housing material	PBT	Brass, Interface PBT	Brass, Interface PBT	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Operating voltage U_b	18...30 VDC	18...30 VDC	18...30 VDC	
Ambient temperature	0...70 °C	0...70 °C	0...70 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	



Housing material definitions:
PBT Polybuteneterephthalate



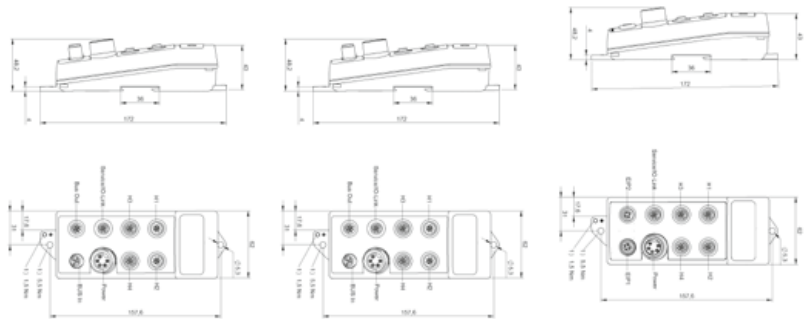
BIS00E2 BIS L-409-045-004-07-S4				
LF (125 kHz)				
25 x 10 x 50 mm				
with clear zone (in steel)				
round				
M12x1-Male, 4-pole, A-coded				
ABS, Interface PBT				
IO-Link 1.0				
18...30 VDC				
0...70 °C				
IP67				
CE, UL-FILE E227256, Vol. X1, BIS				



RFID SYSTEM LF (125 kHz) BISV
IO-LINK MASTER

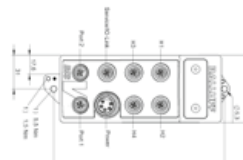
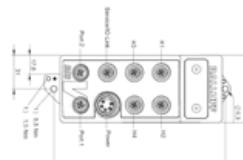
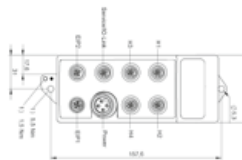
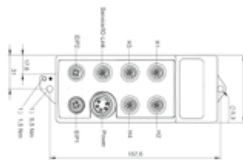
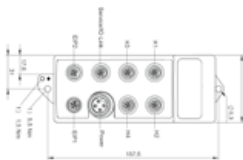
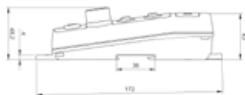
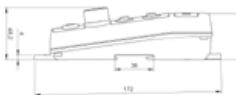
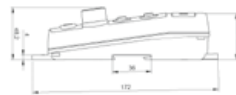
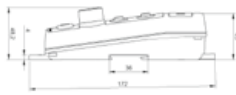
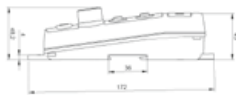


	BIS00T3 BIS V-6102-019-C001	BIS012E BIS V-6102-019-C101	BIS012F BIS V-6106-034-C002	
Product group	Multi-Frequency	Multi-Frequency	Multi-Frequency	
Interface	Profibus	Profibus	EtherNet/IP	
Operating voltage U_b	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Ambient temperature	0...60 °C	0...60 °C	0...60 °C	
IP rating	IP65 with connector	IP65 with connector	IP65 with connector	
Approval/conformity	CE, UL-FILE E227256, Vol. X1, BIS	CE, EN 300 330-2, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	
Auxiliary interfaces	1x IO Link	1x IO Link	1x IO Link	
Port class	Type A	Type A	Type A	





BIS0122 BIS V-6106-034-C004	BIS014C BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104	BIS013U BIS V-6108-048-C002	BIS013W BIS V-6108-048-C102
Multi-Frequency	Multi-Frequency	Multi-Frequency	Multi-Frequency	Multi-Frequency
EtherNet/IP	EtherNet/IP	EtherNet/IP	Profinet	Profinet
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Die-cast zinc	Die-cast zinc	Die-cast zinc	Die-cast zinc	Die-cast zinc
0...60 °C	0...60 °C	0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol. X1, BIS	CE, EN 300 330-2, UL-FILE E227256, Vol.X1, BIS	CE, EN 300 330-2, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol. X1, BIS	CE, EN 300 330-2, UL-FILE E227256, Vol.X1, BIS
1x IO Link	1x IO Link	1x IO Link	1x IO Link	1x IO Link
Type A	Type A	Type A	Type A	Type A





BIS014E BIS V-6111-073-C103				
Multi-Frequency				
CC-Link				
24 V DC LPS Class 2				
Die-cast zinc				
0...60 °C				
IP65 with connector				
CE, EN 300 330-2, UL- FILE E227256, Vol.X1, BIS				
1x IO Link				
Type A				

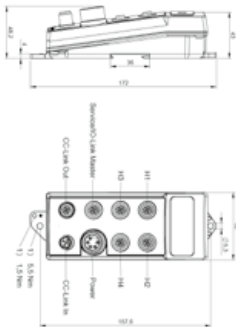




Image processing devices for reliable detection and recording

MACHINE VISION AND OPTICAL IDENTIFICATION

 *innovating automation*



The demands on modern production equipment are high: they must be extremely productive and flexible while achieving maximum quality. Our Balluff Vision Solutions are designed precisely to meet these requirements. They reliably detect error, check the quality and are suitable for reading and verification of codes. They scan objects, 1D and 2D barcodes and plain text.

The sensors are extremely flexible, an asset for parts checking in assembly or parts tracking in production. Their standardized interface makes devices simple to integrate and easy to use.

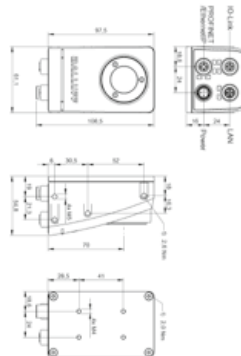
Your Balluff solution

- SmartCamera IO-Link master



SMARTCAMERA IO-LINK MASTER

	BVS002A BVS SC-M1280Z00-30-000		
1D codes	GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E		
2D codes	Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code		
Application	Object inspection, Range, Object detection, Positioning, Barcode-, 2D-, OCR identification		
Image resolution	1280 x 1024 pixels		
Sensor type Vision	CMOS 1/1.8"9 monochrome global shutter		
Housing material	Aluminum		
Dimension	62 x 55 x 110 mm		
Switching output	2x IO configurable		
Interface	LAN (Gigabit Ethernet) Profinet / EtherNet/IP 1x IO-Link Master		
Operating voltage Ub	19.2...28.8 VDC		
Ambient temperature	0...55 °C		
Approval/conformity	CE, UL-FILE E227256, Vol.X1, BIS		
IP rating	IP67 with protection tube		



Safety with Balluff quality

SAFETY

 *innovating automation*



Automation requires safety. And safety is based on reliability. The Balluff safety concept consists of products and solutions that fulfill their tasks over the course of years with consistent reliability and precision. With Safety over IO-Link from Balluff you enjoy the proven benefits of IO-Link plus the safety of your people and equipment. By linking automation and safety technology, you achieve full machine security in one system.

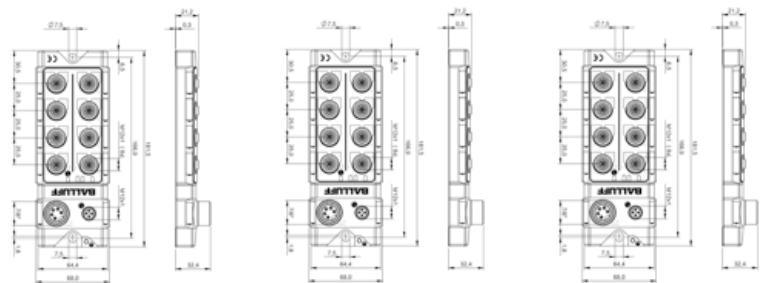
Your Balluff solutions

- Safety I/O modules



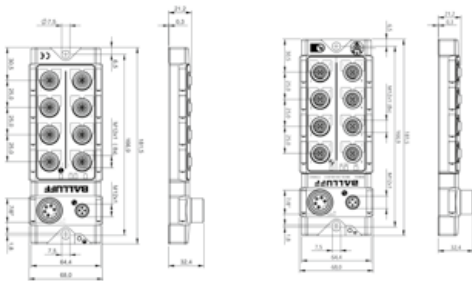
SAFETY I/O MODULES

	BNI0033 BNI IOL-252-000-Z013	BNI003W BNI IOL-252-S01-Z013	BNI0034 BNI IOL-256-000-Z013	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	0	0	0	
Digital outputs	8x PNP	8x PNP	16x PNP	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Auxiliary interfaces	Galvanically Isolated Outputs	Galvanically Isolated Outputs	Galvanically Isolated Outputs	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
SIL (IEC 61508)	no	no	no	
SIL CL (EN 62061)	no	no	no	
PFHd (EN 62061)	no	no	no	





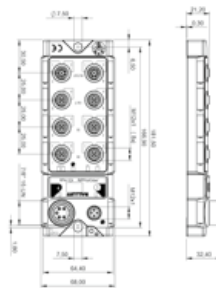
BNI003Y BNI IOL-256-S01-Z013	BNI00CL BNI IOL-355-S02-Z013			
IO-Link master	IO-Link master			
68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm			
Die-cast zinc	Die-cast zinc			
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded			
0	8x PNP, Type 3			
16x PNP	8x PNP			
18...30.2 VDC	18...30.2 VDC			
2 A	2 A			
Galvanically Isolated Outputs	Galvanically Isolated Outputs			
IO-Link 1.0	IO-Link 1.1			
-5...70 °C	-5...55 °C			
IP67	IP67			
no	2			
no	2			
no	12.5 E-9 1/h			





PROFISAFE OVER IO-LINK MODULE

	BNI0098 BNI IOF-329-P02-Z038		
Principle of operation	IO-Link master		
Dimension	68 x 32.4 x 181.5 mm		
Housing material	Die-cast zinc		
Connection slots	2x M12x1-Female, 8-pole, A-coded 6x M12x1-Female, 5-pole, A-coded		
Number of safe inputs	12		
Number of safe outputs	2		
Digital inputs	6x PNP, Type3		
Operating voltage U_b	19.2...30 VDC		
Output current max.	2A/output		
Interface	PROFISafe over IO-Link		
Ambient temperature	-5...55 °C		
IP rating	IP67		
SIL (IEC 61508)	3		
SIL CL (EN 62061)	3		
PFHd (EN 62061)	9 E-9 1/h		



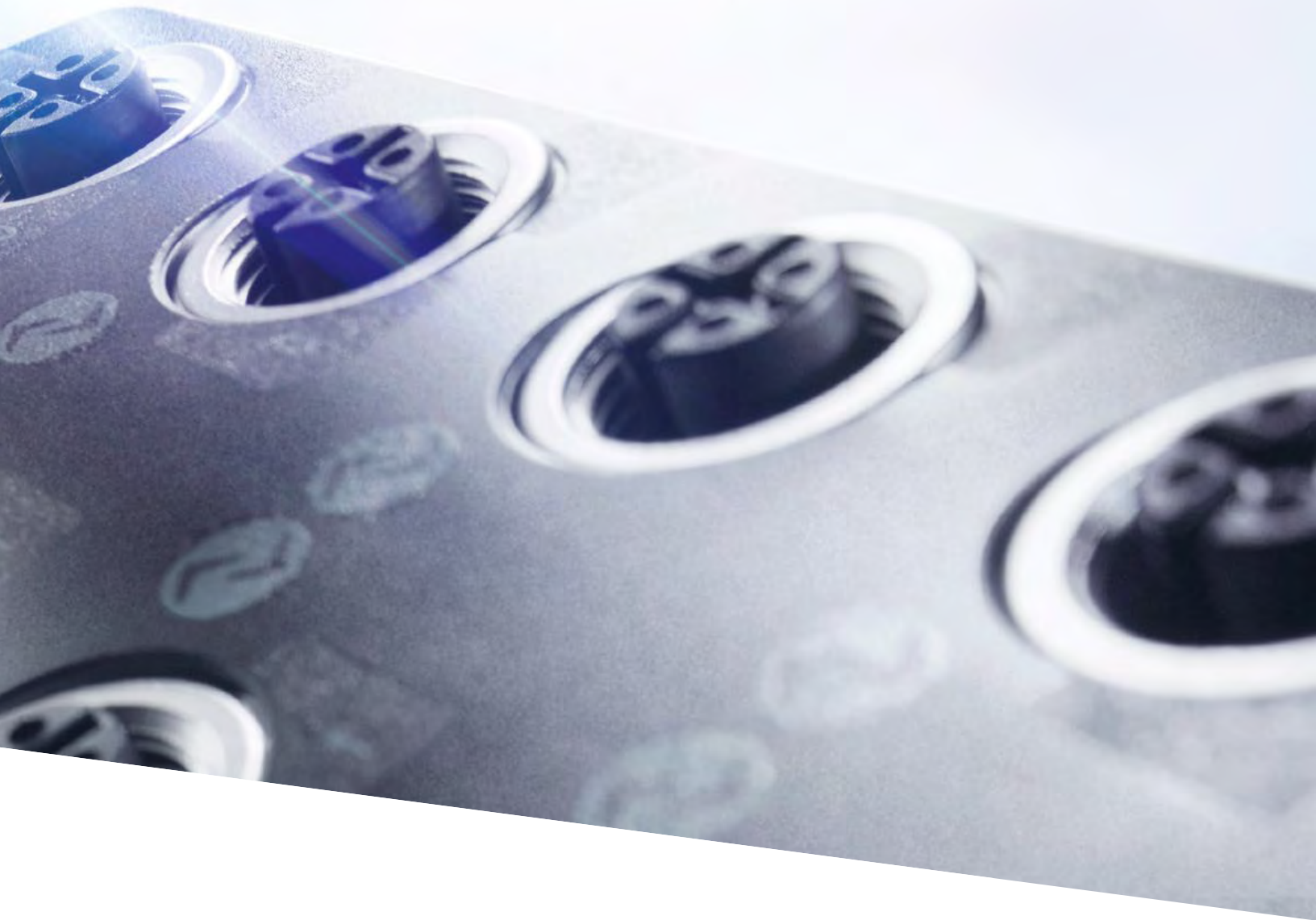


Reliable information exchange across all levels

INDUSTRIAL NETWORKING



innovating automation



The demands on industrial networking continually increase. The rising quantities of data and increasingly complex communication require high-performance components that can reliably transport the information across all levels. This is especially true if high protection ratings, robustness, use at high temperatures or special interfaces, and connections for maximum security are needed.

With an intelligent combination of high-performance industrial networking technology and the IO-Link communication standard, Balluff makes flexible and smooth communication possible in a vast variety of applications.

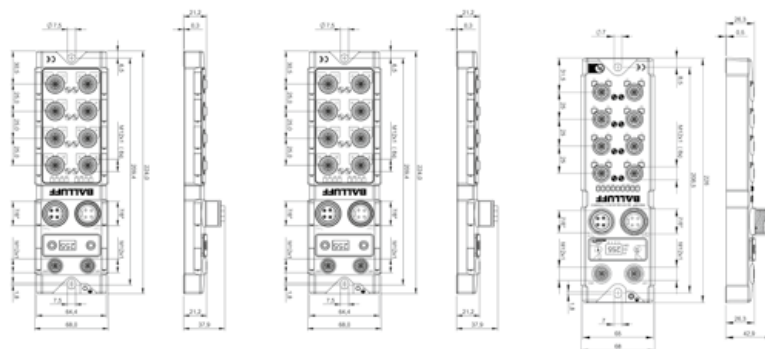
Your Balluff solutions

- IO-Link master blocks
- Discrete I/O hubs
- Valve interfaces
- Universal discrete I/O
- Analog I/O
- Signal converters
- Memory module
- Inductive couplers



IO-LINK MASTER BLOCKS
ETHERNET/IP

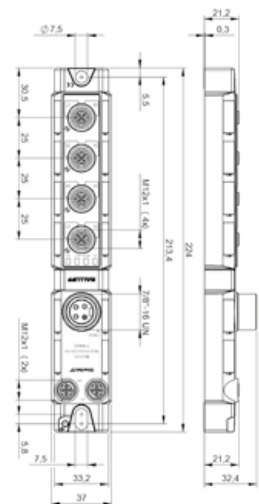
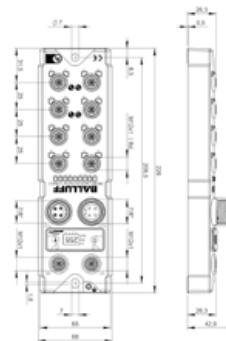
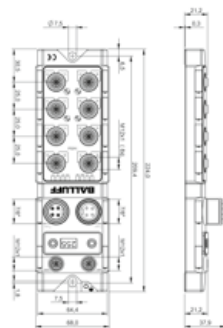
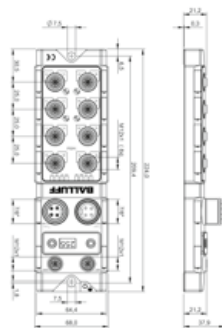
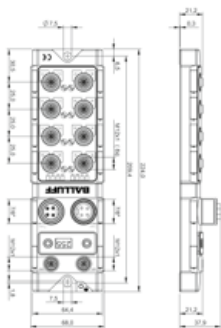
	BNI006A BNI EIP-508-105-Z015	BNI007C BNI EIP-508-105-Z015-C06	BNI008M BNI EIP-508-105-R015	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 42.9 x 226 mm	
Housing material	Die-cast zinc	Die-cast zinc	PPS	
Interface	EtherNet/IP	EtherNet/IP	EtherNet/IP	
Digital inputs	16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	
Digital outputs	16x PNP	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	yes	
Auxiliary interfaces	8x IO-Link	8x IO-Link	8x IO-Link	
Port-class	Type A	Type A	Type A	
Connection slots	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Current sum I_A , actuator	9.0 A	9.0 A	9.0 A	
Address range	IPV4	IPV4	IPV4	
Ambient temperature	-5...70 °C	-5...55 °C	-5...50 °C	
IP rating	IP67	IP67	IP67	



Housing material definitions:
PPS Polyphenylene Sulfide



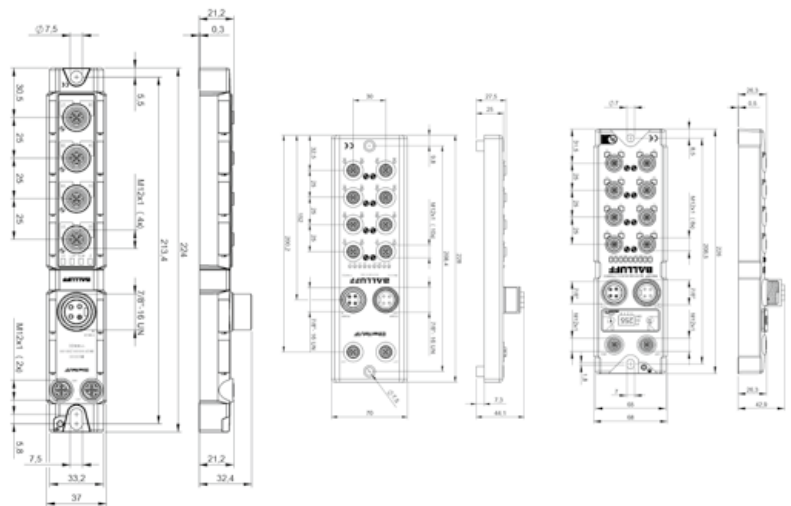
BNI0079 BNI EIP-508-105-Z015-C05	BNI004A BNI EIP-502-105-Z015	BNI0078 BNI EIP-502-105-Z015-C05	BNI008Z BNI EIP-502-105-R015	BNI009T BNI EIP-507-005-Z040
IO-Link master	IO-Link master	IO-Link master	IO-Link master	IO-Link master
68 x 37.9 x 220 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 42.9 x 226 mm	37 x 32.6 x 224 mm
Die-cast zinc	Die-cast zinc	Die-cast zinc	PPS	Die-cast zinc
EtherNet/IP	EtherNet/IP	EtherNet/IP	EtherNet/IP	EtherNet/IP
16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	8x PNP, Type2
16x PNP	16x PNP	16x PNP	16x PNP	8x PNP
yes	yes	yes	yes	yes
8x IO-Link	4x IO-Link	4x IO-Link	4x IO-Link	4x IO-Link
Type A	Type A	Type A	Type A	Type A
8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	4x M12x1 Female, 5-pole, A-coded
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
2 A	2 A	2 A	2 A	2 A
9.0 A	9.0 A	9.0 A	9.0 A	9.0 A
IPV4	IPV4	IPV4	IPV4	IPV4
-5...55 °C	-5...55 °C	-5...55 °C	-5...50 °C	-5...55 °C
IP67	IP67	IP67	IP67	IP67





IO-LINK MASTER BLOCKS
ETHERNET/IP

	BNI00AA BNI EIP-527-005-Z040	BNI0096 BNI EIP-508-005-E002	BNI00CE BNI EIP-508-105-R015-007	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	37 x 32.6 x 224 mm	70 x 44.1 x 228 mm	68 x 42.9 x 226 mm	
Housing material	Die-cast zinc	Stainless steel (1.4571)	PPS	
Interface	EtherNet/IP	EtherNet/IP	EtherNet/IP	
Digital inputs	8x PNP, Type2	16x PNP, Type3	16x PNP, Type2	
Digital outputs	8x PNP	8x PNP	8x PNP	
Configurable inputs/outputs	yes	yes	yes	
Auxiliary interfaces	4x IO-Link	8x IO-Link	8x IO-Link	
Port-class	Type B	Type A	Type A	
Connection slots	4x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Current sum I_{UA} , actuator	9.0 A	9.0 A	9.0 A	
Address range	IPV4	IPV4	IPV4	
Ambient temperature	-5...55 °C	-5...70 °C	-5...50 °C	
IP rating	IP67	IP69	IP67	

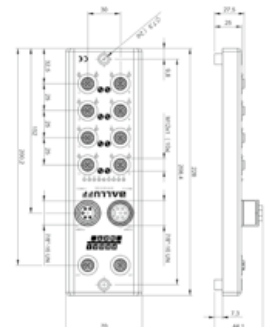
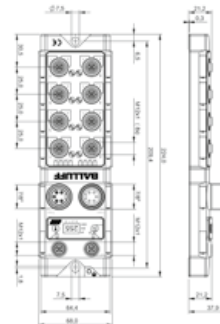
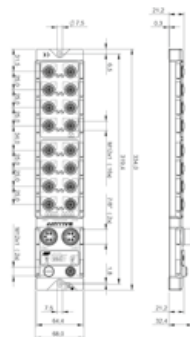


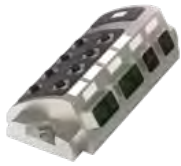
Housing material definitions:
PPS Polyphenylene Sulfide



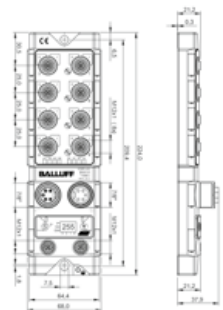
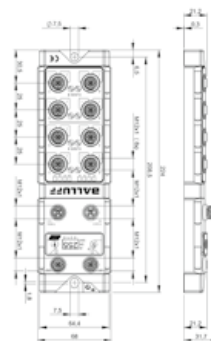
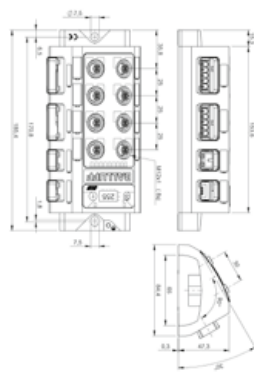
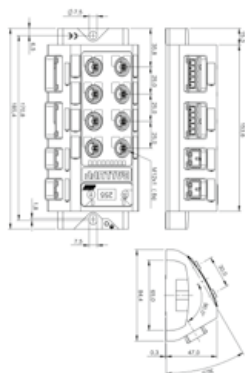
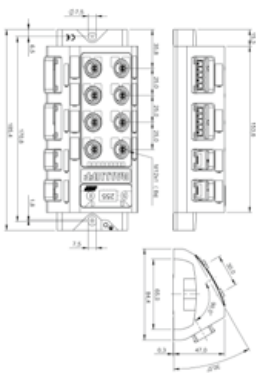
IO-LINK MASTER BLOCKS
PROFINET

	BNI007M BNI PNT-509-105-Z033	BNI005H BNI PNT-508-105-Z015	BNI009M BNI PNT-508-005-E002	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	68 x 37.9 x 334 mm	68 x 37.9 x 224 mm	70 x 44.1 x 228 mm	
Housing material	Die-cast zinc	Die-cast zinc	Stainless steel (1.4571)	
Interface	Profinet I/O	Profinet I/O	Profinet I/O	
Digital inputs	32x PNP, Type 3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	32x PNP	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	yes	
Auxiliary interfaces	16x IO-Link	8x IO-Link	8x IO-Link	
Port-class	Type A	Type A	Type A	
Connection slots	16x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Current sum U_A , actuator	9.0 A	9.0 A	9.0 A	
Address range	IPV4	IPV4	IPV4	
Ambient temperature	-5...70 °C	-5...70 °C	-5...55 °C	
IP rating	IP67	IP67	IP69	





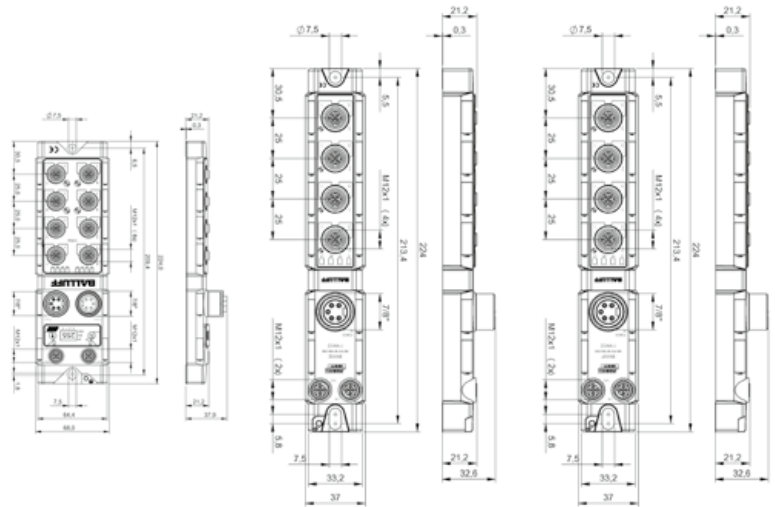
BNI007K BNI PNT-508-105-Z031	BNI007J BNI PNT-508-105-Z031-002	BNI007Y BNI PNT-508-105-Z031-004	BNI00A7 BNI PNT-538-105-Z063	BNI006C BNI PNT-502-102-Z015
IO-Link master	IO-Link master	IO-Link master	IO-Link master	IO-Link master
84.4 x 47 x 185.4 mm	84.4 x 47 x 185.4 mm	84.4 x 47 x 185.4 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
Die-cast zinc	Die-cast zinc	Die-cast zinc	Die-cast zinc	Die-cast zinc
Profinet I/O, AIDA Push/Pull connectors, RJ45	Profinet I/O, AIDA Push/Pull connectors Fiber optic	Profinet I/O, AIDA Push/Pull connectors, RJ45, Fiber optic	Profinet I/O	Profinet I/O
16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	8x PNP, Type3	16x PNP, Type3
16x PNP	16x PNP	16x PNP	8x PNP	16x PNP
yes	yes	yes	yes	yes
8x IO-Link	8x IO-Link	8x IO-Link	8x IO-Link	4x IO-Link
Type A	Type A	Type A	Type A (4x) + Type B (4x)	Type A
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
2 A	2 A	2 A	2 A	2 A
16.0 A	16.0 A	16.0 A	9.0 A	9.0 A
IPV4	IPV4	IPV4	IPV4	IPV4
-5...70 °C	-5...55 °C	-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67	IP67	IP67



IO-LINK MASTER BLOCKS
PROFINET



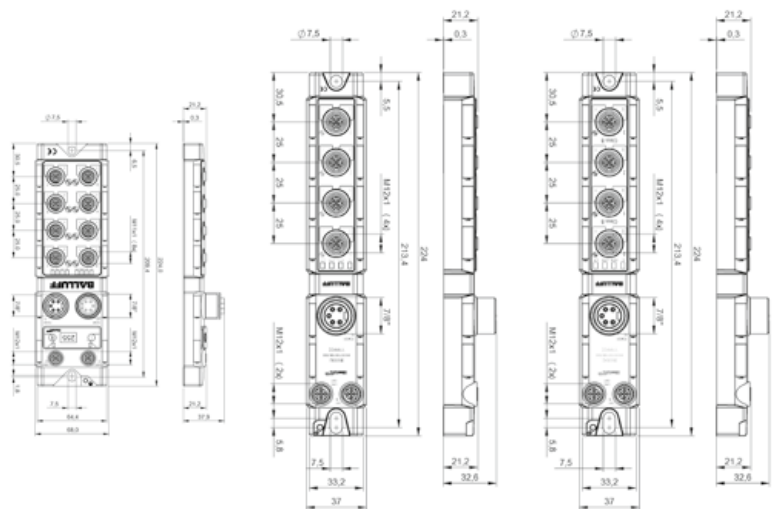
	BNI004U BNI PNT-502-105-Z015	BNI0092 BNI PNT-507-005-Z040	BNI00A9 BNI PNT-527-005-Z040	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	68 x 37.9 x 224 mm	37 x 32.6 x 224 mm	37 x 32.6 x 224 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	Profinet I/O	Profinet I/O	Profinet I/O	
Digital inputs	16x PNP, Type3	8x PNP, Type2	8x PNP, Type2	
Digital outputs	16x PNP	8x PNP	8x PNP	
Configurable inputs/outputs	yes	yes	yes	
Auxiliary interfaces	4x IO-Link	4x IO-Link	4x IO-Link	
Port-class	Type A	Type A	Type B	
Connection slots	8x M12 Female, 5-pole, A-coded	4x M12 Female, 5-pole, A-coded	4x M12 Female, 5-pole, A-coded	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Current sum I_A , actuator	9.0 A	9.0 A	9.0 A	
Address range	IPV4	IPV4	IPV4	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	





IO-LINK MASTER BLOCKS
ETHERCAT

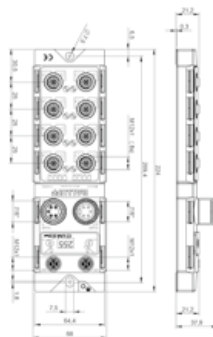
	BNI0077 BNI ECT-508-105-Z015	BNI009U BNI ECT-507-005-Z040	BNI00AC BNI ECT-527-005-Z040
Principle of operation	IO-Link master	IO-Link master	IO-Link master
Dimension	68 x 37.9 x 224 mm	37 x 32.6 x 224 mm	37 x 32.6 x 224 mm
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc
Interface	EtherCAT	EtherCAT	EtherCAT
Digital inputs	16x PNP, Type2	8x PNP, Type2	8x PNP, Type2
Digital outputs	16x PNP	8x PNP	8x PNP
Configurable inputs/outputs	yes	yes	yes
Auxiliary interfaces	8x IO-Link	4x IO-Link	4x IO-Link
Port-class	Type A	Type A	Type B
Connection slots	8x M12 Female, 5-pole, A-coded	4x M12 Female, 5-pole, A-coded	4x M12 Female, 5-pole, A-coded
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
Output current max.	2 A	2 A	2 A
Current sum I_{UA} , actuator	9.0 A	9.0 A	9.0 A
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C
IP rating	IP67	IP67	IP67





IO-LINK MASTER BLOCK
CC-LINK IE/FIELD

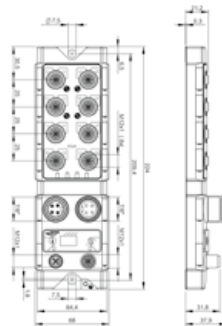
	BNIO08C BNI CIE-508-105-Z015		
Principle of operation	IO-Link master		
Dimension	68 x 37.9 x 224 mm		
Housing material	Die-cast zinc		
Interface	CC-Link IE Field CC-Link IE Field V0		
Digital inputs	16x PNP, Type3		
Digital outputs	16x PNP		
Configurable inputs/outputs	yes		
Auxiliary interfaces	8x IO-Link		
Port-class	Type A		
Connection slots	8x M12 Female, 5-pole, A-coded		
Operating voltage U_b	18...30.2 VDC		
Output current max.	2 A		
Current sum U_A , actuator	9.0 A		
Address range	0 - 120		
Ambient temperature	-5...70° C		
IP rating	IP67		





IO-LINK MASTER BLOCK
DEVICENET

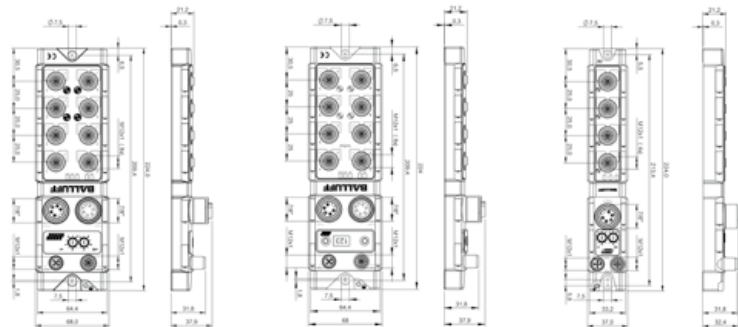
	BNI005A BNI DNT-502-100-Z001			
Principle of operation	IO-Link master			
Dimension	68 x 37.9 x 224 mm			
Housing material	Die-cast zinc			
Interface	DeviceNet			
Digital inputs	16x PNP, Type2			
Digital outputs	16x PNP			
Configurable inputs/outputs	yes			
Auxiliary interfaces	4x IO-Link			
Port-class	Type A			
Connection slots	8x M12x1 Female, 5-pole, A-coded			
Operating voltage U_b	18...30.2 VDC			
Output current max.	350 mA			
Current sum U_A , actuator	1.6 A			
Address range	0 - 63			
Ambient temperature	-5...70 °C			
IP rating	IP67			





IO-LINK MASTER BLOCKS
PROFIBUS

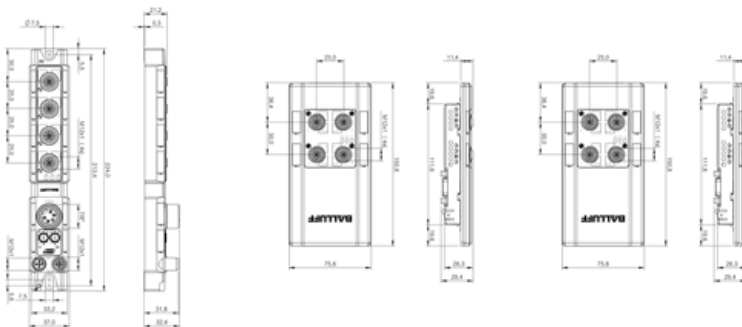
	BNI003K BNI PBS-502-001-Z001	BNI005R BNI PBS-502-101-Z001	BNI003P BNI PBS-507-001-Z011	
Principle of operation	IO-Link master	IO-Link master	IO-Link master	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	37 x 32.4 x 224 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	Profibus DP	Profibus DP	Profibus DP	
Digital inputs	16x PNP, Type2	16x PNP, Type2	8x PNP, Type2	
Digital outputs	16x PNP	16x PNP	8x PNP	
Configurable inputs/outputs	yes	yes	yes	
Auxiliary interfaces	4x IO-Link	4x IO-Link	4x IO-Link	
Port-class	Type A	Type A	Type A	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Output current max.	2 A	2 A	2 A	
Current sum U_A , actuator	9.0 A	9.0 A	9.0 A	
Address range	0 - 99	0 - 126	0 - 99	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	



Housing material definitions:
ABS Acrylonitrile Butadiene Styrene



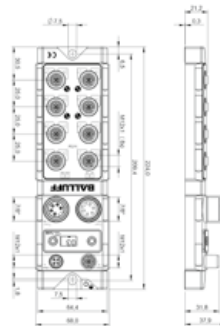
BNI004N BNI PBS-507-002-Z011	BNI0030 BNI PBS-504-001-K008	BNI004P BNI PBS-504-002-K008		
IO-Link master	IO-Link master	IO-Link master		
37 x 32.5 x 22.5 mm	75.8 x 10 x 150.8 mm	75.8 x 10 x 150.8 mm		
Die-cast zinc	ABS	ABS		
Profibus DP	Profibus DP	Profibus DP		
8x PNP, Type2	4x PNP, Type2	4x PNP, Type2		
8x PNP	4x PNP	4x PNP		
yes	yes	yes		
4x IO-Link	4x IO-Link	4x IO-Link 1.1		
Type A	Type A	Type A		
4x M12x1-Female, 5-pole, A-coded	4x M12x1 Female, 5-pole, A-coded	4x M12x1 Female, 5-pole, A-coded		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
2 A	2 A	2 A		
9.0 A	12 A	12 A		
0 - 99	0 - 99	0 - 99		
-5...70 °C	-5...55 °C	-5...55 °C		
IP67	IP54	IP54		





IO-LINK MASTER BLOCK
CC-LINK

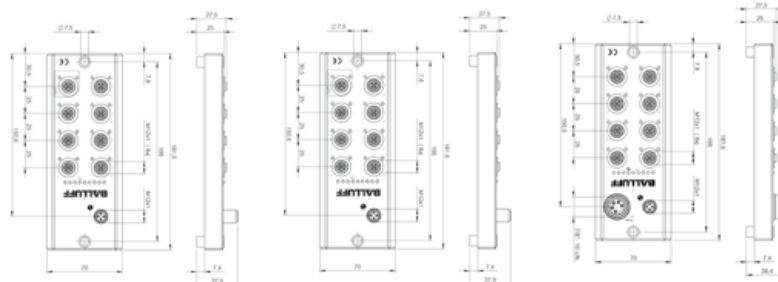
	BNI0040 BNI CCL-502-100-Z001			
Principle of operation	IO-Link master			
Dimension	68 x 37.9 x 224 mm			
Housing material	Die-cast zinc			
Interface	CC-Link CC-Link V1.1			
Digital inputs	16x PNP, Type2			
Digital outputs	16x PNP			
Configurable inputs/outputs	yes			
Auxiliary interfaces	4x IO-Link			
Port-class	Type A			
Connection slots	8x M12 Female, 5-pole, A-coded			
Operating voltage U_b	18...30.2 VDC			
Output current max.	2 A			
Current sum U_A , actuator	9.0 A			
Address range	1 - 64			
Ambient temperature	-5...55 °C			
IP rating	IP67			





DISCRETE I/O HUBS

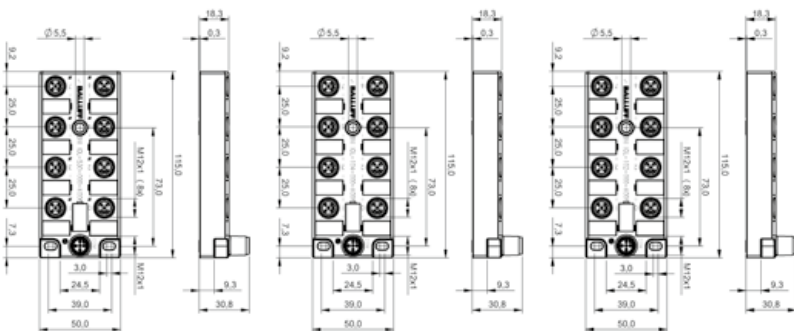
	BNI IOAP BNI IOL-104-002-E012	BNI IOAR BNI IOL-302-002-E012	BNI IOAT BNI IOL-302-002-E013
Dimension	70 x 37.9 x 185.6 mm	70 x 37.9 x 185.6 mm	70 x 38.4 x 185.6 mm
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
Analog inputs	none	none	none
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3
Digital outputs	none	16x PNP	16x PNP
Auxiliary interfaces	n/a	n/a	n/a
Outputs, number	none	16	16
Inputs, number	16	16	16
Output current max.	n/a	2 A	2 A
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
Additional function	Extension port	Extension port	Extension port
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C
IP rating	IP69	IP69	IP69
Cycle time min.			
Scope of delivery	Part label (10x), Blind plugs M12 (4x), Short guide	Part label (10x), Blind plugs M12 (4x), Short guide	Part label (10x), Blind plugs M12 (4x), Short guide



Housing material definitions:
PA Polyamide



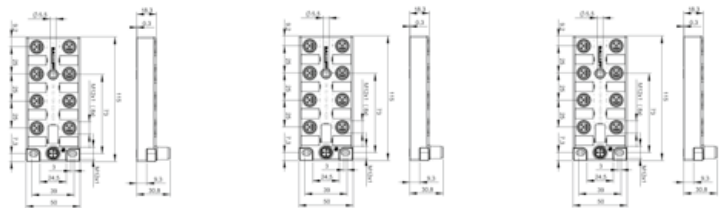
BNI002Z BNI IOL-530-000-K006	BNI0006 BNI IOL-104-000-K006	BNI0005 BNI IOL-102-000-K006		
50 x 31 x 115 mm	50 x 31 x 115 mm	50 x 31 x 115 mm		
PA	PA	PA		
IO-Link 1.1	IO-Link 1.0	IO-Link 1.0		
none	none	none		
8x PNP, Type2	16x PNP, Type2	8x PNP, Type2		
none	none	none		
8x DSC	n/a	n/a		
none	none	none		
none	16	8		
n/a	n/a	n/a		
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded		
n/a	n/a	n/a		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
-5...55 °C	-5...55 °C	-5...55 °C		
IP67	IP67	IP67		
2.5 ms	3 ms	3 ms		
Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide		





DISCRETE I/O HUBS

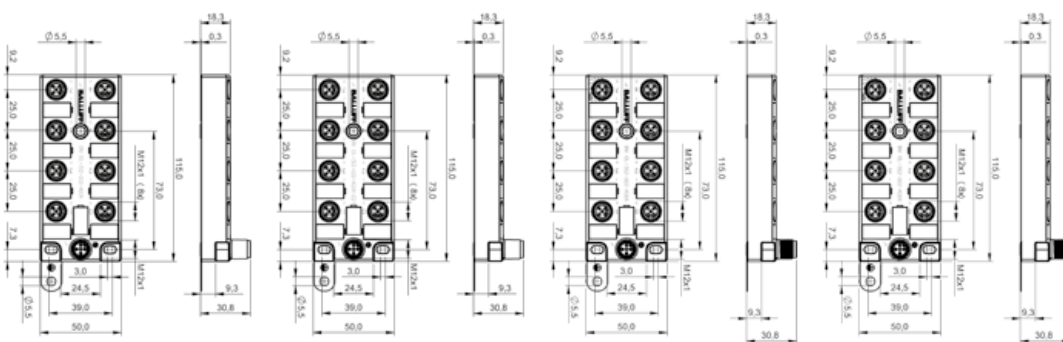
	BNI0074 BNI IOL-106-000-K006	BNI0075 BNI IOL-106-S01-K006	BNI0076 BNI IOL-106-S01-K006-C01	
Dimension	50 x 31 x 115 mm	50 x 31 x 115 mm	50 x 31 x 115 mm	
Housing material	PA	PA	PA	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog inputs	none	none	none	
Digital inputs	16x NPN, Type2	16x NPN, Type2	16x NPN, Type2	
Digital outputs	none	none	none	
Outputs, number	none	none	none	
Inputs, number	16	16	16	
Output current max.	n/a	n/a	n/a	
Connection slots	8x M12x1, 5-pole, A-coded	8x M12x1, 5-pole, A-coded	8x M12x1, 5-pole, A-coded	
Additional function	n/a	n/a	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	2.5 ms	3 ms	3.5 ms	
Scope of delivery	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	



Housing material definitions:
PA Polyamide



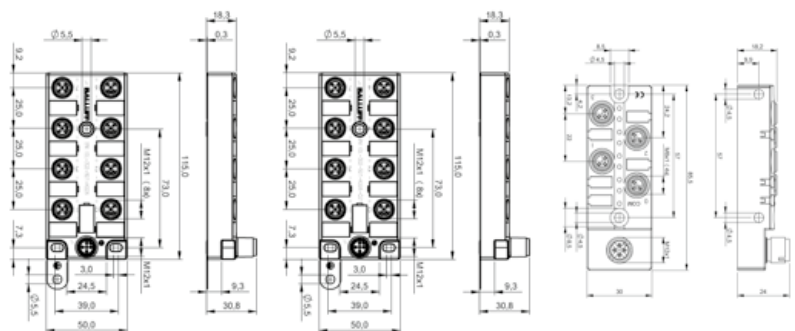
BNI005L BNI IOL-302-000-K006	BNI005U BNI IOL-302-000-K006-C01	BNI007Z BNI IOL-302-002-K006	BNI00AW BNI IOL-311-S02-K006-C01	
50 x 31 x 115 mm	50 x 31 x 115 mm	50 x 31 x 115 mm	50 x 31 x 115 mm	
PA	PA	PA	PA	
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
none	none	none	none	
16x PNP, Type2	16x PNP, Type2	16x PNP, Type3	16x NPN, Type3	
16x PNP	16x PNP	16x PNP	none	
16	16	16	none	
16	16	16	16	
350 mA	350 mA	300 mA	200 mA	
8x M12x1, 5-pole, A-coded	8x M12x1, 5-pole, A-coded	8x M12x1, 5-pole, A-coded	8x M12x1, 5-pole, A-coded	
n/a	n/a	Extension port	Extension port, single channel monitoring, identification	
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	
IP67	IP67	IP67	IP67	
3.5 ms	4 ms	4.5 ms	6 ms	
Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	





DISCRETE I/O HUBS

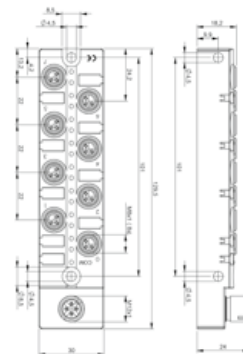
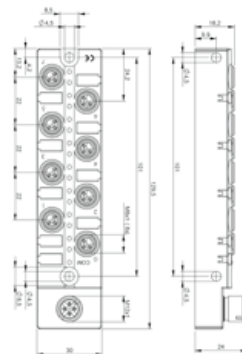
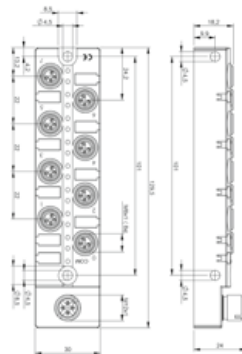
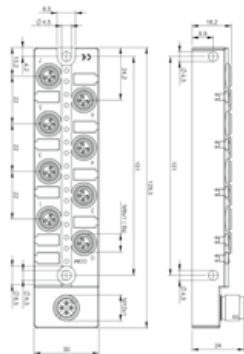
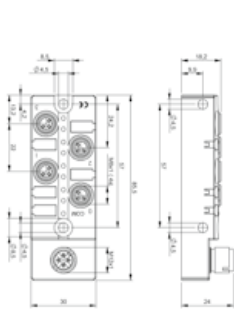
	BNI005T BNI IOL-302-S01-K006	BNI005W BNI IOL-302-S01-K006-C01	BNI000P BNI IOL-101-000-K018	
Dimension	50 x 31 x 115 mm	50 x 31 x 115 mm	30 x 24 x 85.5 mm	
Housing material	PA	PA	PBT, GF	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.0	
Analog inputs	none	none	none	
Digital inputs	16x PNP, Type2	16x PNP, Type2	4x PNP, Type2	
Digital outputs	16x PNP	16x PNP	none	
Outputs, number	16	16	none	
Inputs, number	16	16	4	
Output current max.	350 mA	350 mA	n/a	
Connection slots	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	4x M8x1 Female, 3-pole	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	5 ms	5.5 ms	2.5 ms	
Scope of delivery	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M8 (2x), Short guide	



Housing material definitions:
 GF Glass Fiber
 PA Polyamide
 PBT Polybuteneterephthalate



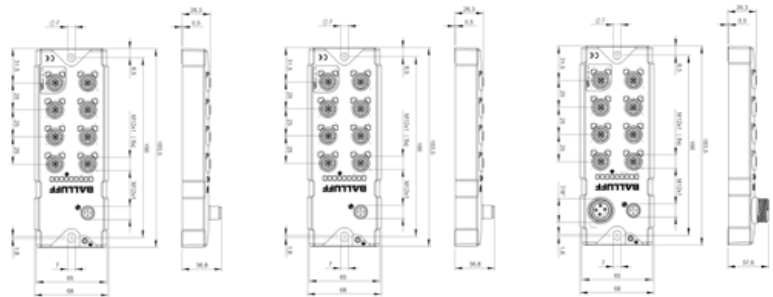
BNI001W BNI IOL-101-S01-K018	BNI0021 BNI IOL-104-000-K021	BNI0022 BNI IOL-104-S01-K021	BNI000R BNI IOL-102-000-K019	BNI001Y BNI IOL-102-S01-K019
30 x 24 x 85.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm
PBT, GF	PBT, GF	PBT, GF	PBT, GF	PBT, GF
IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
none	none	none	none	none
4x PNP, Type2	16x PNP, Type2	16x PNP, Type2	8x PNP, Type2	8x PNP, Type2
none	none	none	none	none
none	none	none	none	none
4	16	16	8	8
n/a	n/a	n/a	n/a	n/a
4x M8x1 Female, 3-pole	8x M8x1 Female, 4-pole	8x M8x1 Female, 4-pole	8x M8x1 Female, 3-pole	8x M8x1 Female, 3-pole
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP67	IP67	IP67	IP67	IP67
2.5 ms	2.5 ms	2.5 ms	2.5 ms	2.5 ms
Part label (12x), Blind plugs M8 (2x), Short guide	Part label (12x), Blind plugs M8 (4x), Short guide	Part label (12x), Blind plugs M8 (4x), Short guide	Part label (12x), Blind plugs M8 (4x), Short guide	Part label (12x), Blind plugs M8 (4x), Short guide





DISCRETE I/O HUBS

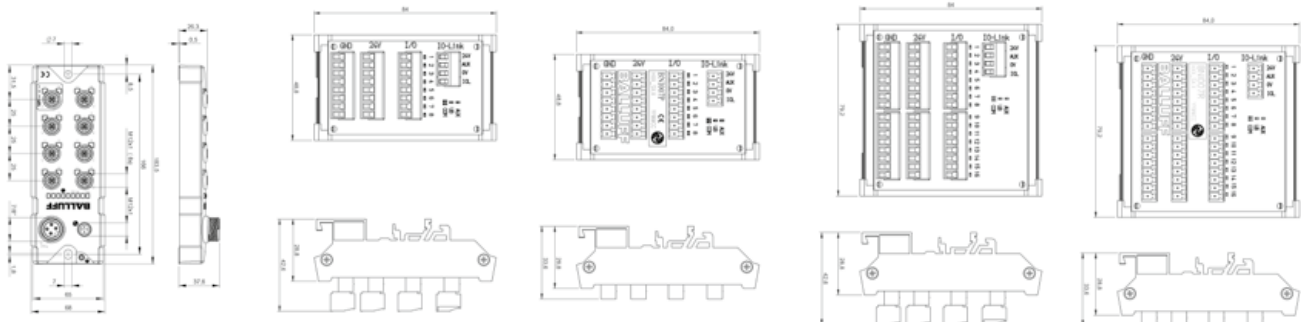
	BNI0090 BNI IOL-104-S02-R012	BNI00CH BNI IOL-104-S02-R012-008	BNI0091 BNI IOL-302-S02-R026	
Dimension	68 x 36.8 x 183.5 mm	68 x 36.8 x 183.5 mm	68 x 37.6 x 183.5 mm	
Housing material	PPS	PPS	PPS	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog inputs	none	none	none	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	none	none	16x PNP	
Outputs, number	none	none	16	
Inputs, number	16	16	16	
Output current max.	n/a	n/a	2 A	
Connection slots	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	
Additional function	Extension port	Extension port	Extension port	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	4.5 ms	4.5 ms	6 ms	
Scope of delivery	Part label (10x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (10x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (10x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	



Housing material definitions:
 PPS Polyphenylene Sulfide
 PVC Polyvinylchloride



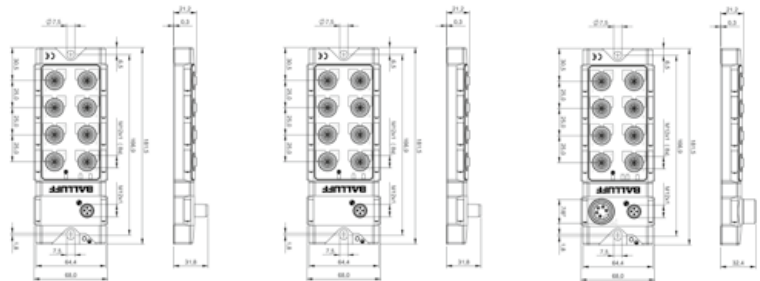
BNI00CJ BNI IOL-302-S02-R026-008	BNI004K BNI IOL-309-000-K024	BNI007P BNI IOL-309-000-K024-001	BNI004L BNI IOL-310-000-K025	BNI007R BNI IOL-310-000-K025-001
68 x 37.6 x 183.5 mm	84 x 48.8 x 42.6 mm	84 x 48.8 x 42.6 mm	84 x 79.2 x 42.6 mm	84 x 79.2 x 42.6 mm
PPS	PVC, UL94-0	PVC, UL94-0	PVC, UL94-0	PVC, UL94-0
IO-Link 1.1	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
none	none	none	none	none
16x PNP, Type3	8x PNP, Type2	8x PNP, Type2	16x PNP, Type2	16x PNP, Type2
16x PNP	8x PNP	8x PNP	16x PNP	16x PNP
16	8	8	16	16
16	8	8	16	16
2 A	350 mA	350 mA	350 mA	350 mA
8x M12 Female, 5-pole, A-coded	8x screw terminals	open terminal ports	16x screw terminals	open terminal ports
Extension port	n/a	n/a	n/a	n/a
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
-5...70 °C	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C
IP67	IP20	IP20	IP20	IP20
6 ms	3 ms	3 ms	3 ms	3 ms
Part label (10x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Module, Screw terminal (for BAM01ZF), Short guide	Module, Short guide	Module, Screw terminal (for BAM01ZH), Short guide	Module, Short guide





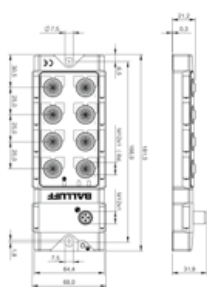
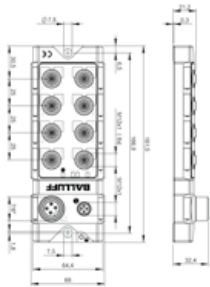
DISCRETE I/O HUBS

	BNI00CM BNI IOL-302-002-Z042	BNI00CN BNI IOL-302-S02-Z012	BNI0046 BNI IOL-302-S02-Z013	
Dimension	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	IO-Link 1.1	IO-Link 1.0	IO-Link 1.1	
Analog inputs	none	none	none	
Digital inputs	16x PNP, Type 3	16x PNP, Type 3	16x PNP, Type 3	
Digital outputs	16x PNP	16x PNP	16x PNP	
Outputs, number	16	16	16	
Inputs, number	16	16	16	
Output current max.	2 A	400 mA	2 A	
Connection slots	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Additional function	n/a	Extension port	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	4.4 ms	4.4 ms	6.2 ms	
Scope of delivery	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	





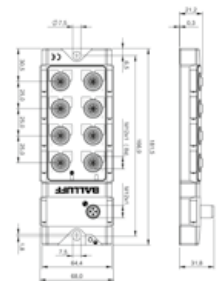
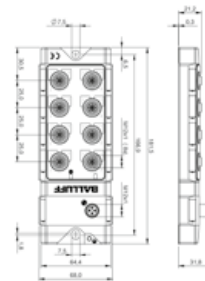
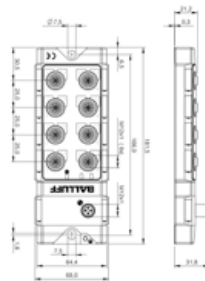
BNI00CP BNI IO L-302-S02-Z026	BNI00CR BNI IO L-104-S02-Z012			
68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm			
Die-cast zinc	Die-cast zinc			
IO-Link 1.1	IO-Link 1.1			
none	none			
16x PNP, Type 3	16x PNP, Type 3			
16x PNP	none			
16	none			
16	16			
2 A	n/a			
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded			
n/a	Extension port			
18...30.2 VDC	18...30.2 VDC			
-5...55 °C	-5...55 °C			
IP67	IP67			
5.6 ms	4.4 ms			
Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw			





DISCRETE I/O HUBS

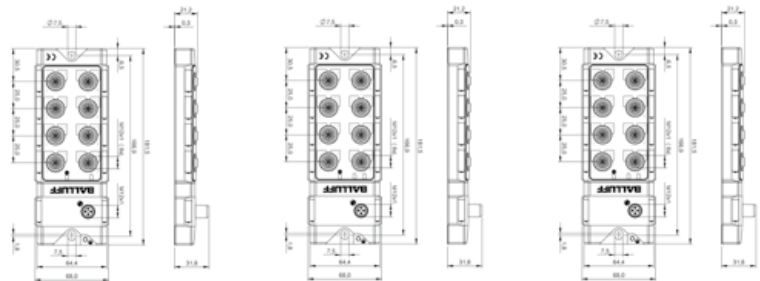
	BNI0043 BNI IOL-205-000-Z012	BNI0032 BNI IOL-104-000-Z012	BNI0039 BNI IOL-104-S01-Z012	
Dimension	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Analog inputs	none	none	none	
Digital inputs	none	16x PNP, Type2	16x PNP, Type2	
Digital outputs	16	none	none	
Outputs, number	16	none	none	
Inputs, number	none	16	16	
Output current max.	500 mA	n/a	n/a	
Connection slots	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	8x M12x1 Female, 5-pole, A-coded	
Additional function	n/a	n/a	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	3 ms	3 ms	3 ms	
Scope of delivery	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	





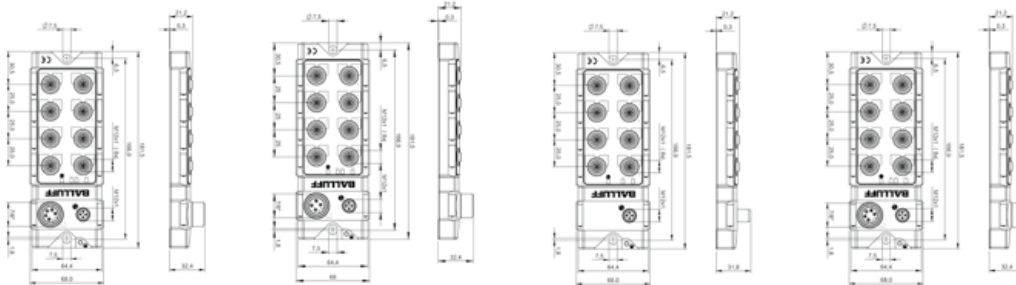
DISCRETE I/O HUBS

	BNI005P BNI IOL-104-S01-Z012-C02	BNI0080 BNI IOL-302-000-Z042	BNI003U BNI IOL-302-000-Z012	
Dimension	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Analog inputs	none	none	none	
Digital inputs	16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	
Digital outputs	none	8x PNP	16x PNP	
Outputs, number	16	8	16	
Inputs, number	16	16	16	
Output current max.	n/a	2A	2 A	
Connection slots	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	
Additional function	n/a	n/a	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	3 ms	3 ms	3 ms	
Scope of delivery	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	





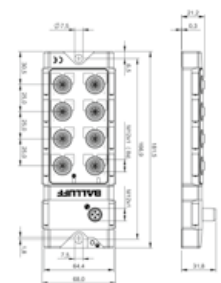
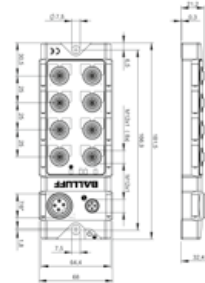
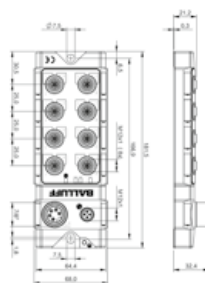
BNI0035 BNI IOL-302-000-Z013	BNI0050 BNI IOL-302-000-Z026	BNI003C BNI IOL-302-S01-Z012	BNI003A BNI IOL-302-S01-Z013	
68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 32.4 x 181.5 mm	
Die-cast zinc	Die-cast zinc	Die-cast zinc	Die-cast zinc	
IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
none	none	none	none	
16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	16x PNP, Type2	
16x PNP	16x PNP	16x PNP	16x PNP	
16	16	16	16	
16	16	16	16	
2 A	2 A	2 A	2 A	
8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	8x M12 Female, 5-pole, A-coded	
n/a	n/a	n/a	n/a	
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C	
IP67	IP67	IP67	IP67	
3 ms	3 ms	3 ms	3 ms	
Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	





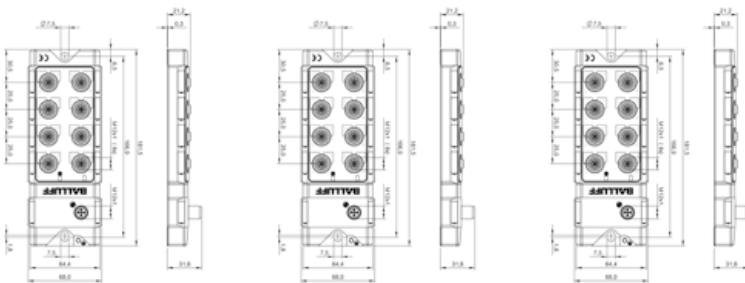
DISCRETE I/O HUBS

	BNI0048 BNI IOL-302-S01-Z013-C01	BNI0051 BNI IOL-302-S01-Z026	BNI0031 BNI IOL-102-000-Z012	
Dimension	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 31.8 x 181.5 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Analog inputs	none	none	none	
Digital inputs	16x PNP, Type2	16x PNP, Type2	8x PNP, Type2	
Digital outputs	16x PNP	16x PNP	none	
Outputs, number	16	16	none	
Inputs, number	16	16	8	
Output current max.	2 A	2 A	n/a	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Additional function	n/a	n/a	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	3 ms	3 ms	3 ms	
Scope of delivery	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	





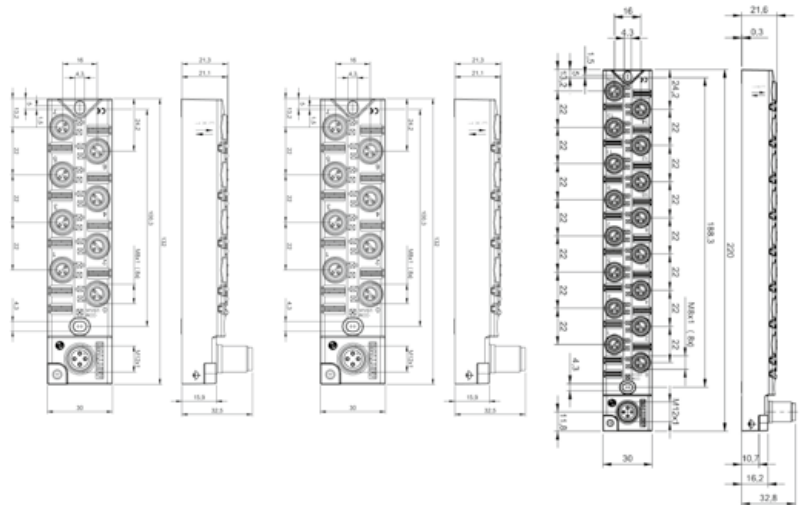
BNI0063 BNI IO-L-106-000-Z012	BNI0062 BNI IO-L-106-S01-Z012	BNI0061 BNI IO-L-106-S01-Z012-C01		
68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm		
Die-cast zinc	Die-cast zinc	Die-cast zinc		
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1		
none	none	none		
16x NPN, Type2	16x NPN, Type2	16x NPN, Type2		
none	none	none		
none	none	none		
16	16	16		
n/a	n/a	n/a		
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded		
n/a	n/a	n/a		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
-5...70 °C	-5...70 °C	-5...70 °C		
IP67	IP67	IP67		
2.5 ms	3 ms	3.5 ms		
Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw		





DISCRETE I/O HUBS

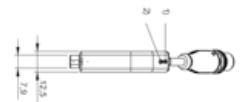
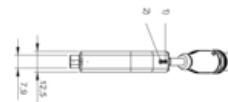
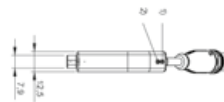
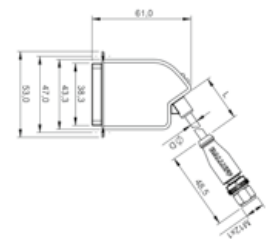
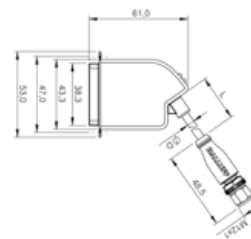
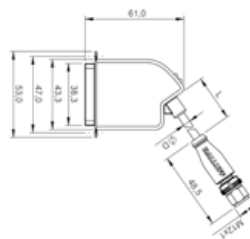
	BNI0099 BNI IOL-102-002-Z019	BNI0093 BNI IOL-309-002-Z019	BNI00AU BNI IOL-302-002-Z046	
Dimension	30 x 32.5 x 132 mm	30 x 32.5 x 132 mm	30 x 32.8 x 220 mm	
Housing material	Die-cast zinc	Die-cast zinc	Die-cast zinc	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Analog inputs	none	none	none	
Digital inputs	8x PNP, Type3	8x PNP, Type3	16x PNP, Type 3	
Digital outputs	none	8x PNP	8x PNP	
Outputs, number	none	8	16	
Inputs, number	8	8	16	
Output current max.	n/a	300 mA	300 mA	
Connection slots	8x M8 Female, 3-pole	8x M8 Female, 3-pole	16x M8 Female, 3-pole	
Additional function	Extension port	Extension port	Extension port	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Cycle time min.	3.2 ms	3.5 ms	4.0 ms	
Scope of delivery	Module, Blind plugs M8 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Module, Blind plugs M8 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	Module, Part label (28x), Blind plugs M8 (4x), Ground strap, Lock washer, Short guide, M4x6 screw	



VALVE INTERFACES



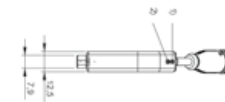
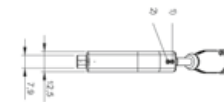
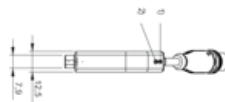
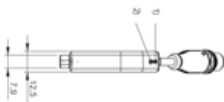
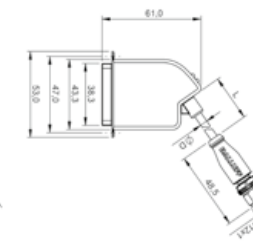
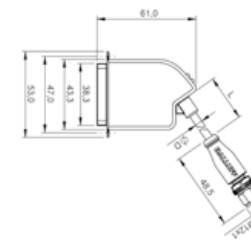
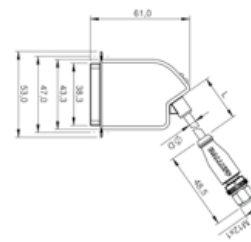
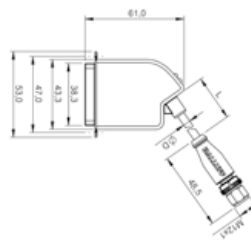
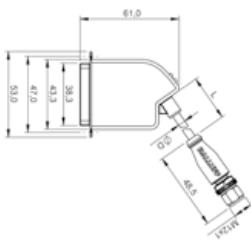
	BNI006J BNI IOL-750-V08-K007	BNI006K BNI IOL-750-V10-K007	BNI006N BNI IOL-751-V08-K007	
Principle of operation	Active splitter	Active splitter	Active splitter	
Dimension	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	
Housing material	PA	PA	PA	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Port class	A	A	A	
Digital inputs	none	none	none	
Digital outputs	24	24	24	
Outputs, number	24	24	24	
Output current max.	300 mA	300 mA	300 mA, separate output power	
Connection slots	25 pin D-sub female	25 pin, D-sub female	25 pin, D-sub female	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP40	IP40	IP40	
For use with	Festo MPA	SMC VQC	Festo MPA	



Housing material definitions:
PA Polyamide



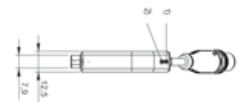
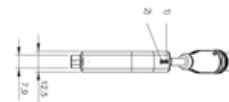
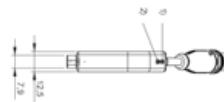
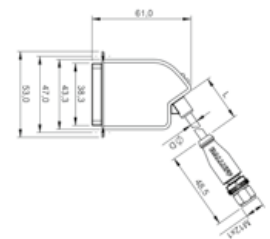
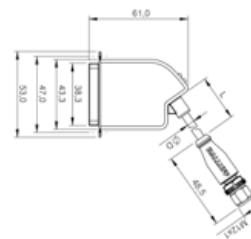
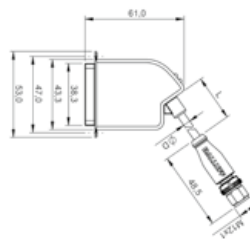
BNI006P BNI IOL-751-V10-K007	BNI006Y BNI IOL-752-V08-K007	BNI006Z BNI IOL-752-V10-K007	BNI006L BNI IOL-750-V13-K007	BNI006M BNI IOL-751-V09-K007
Active splitter	Active splitter	Active splitter	Active splitter	Active splitter
53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm
PA	PA	PA	PA	PA
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
A	B	B	B	B
none	none	none	none	none
24	24	24	22	16
24	24	24	22	16
300 mA separate output power	300 mA, isolated output power	300 mA, isolated output power	300 mA	300 mA, separate output power
25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP40	IP40	IP40	IP40	IP40
SMC VQC	Festo MPA	SMC VQC	Numatics	Festo CPV



VALVE INTERFACES



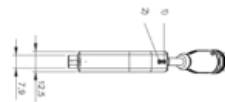
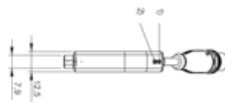
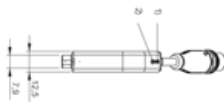
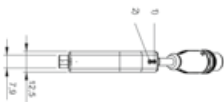
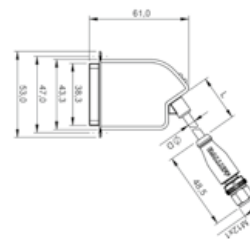
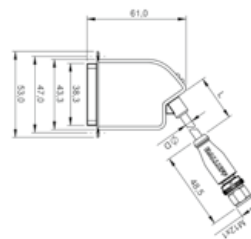
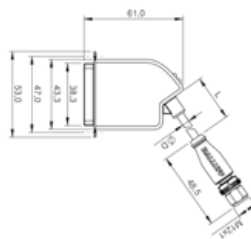
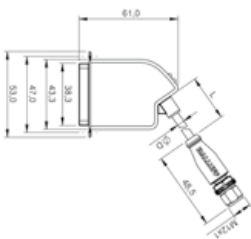
	BNI006R BNI IOL-751-V13-K007	BNI006F BNI IOL-752-V13-K007	BNI006E BNI IOL-750-V09-K007	
Principle of operation	Active splitter	Active splitter	Active splitter	
Dimension	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	
Housing material	PA	PA	PA	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Port class	A	B	A	
Digital inputs	0	0	0	
Digital outputs	22	22	16	
Outputs, number	22	22	16	
Output current max.	300 mA, separate output power	300 mA, isolated output power	300 mA	
Connection slots	25 pin D-sub female	25 pin D-sub female	25 pin D-sub female	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP40	IP40	IP40	
For use with	Numatics	Numatics	Festo CPV	



Housing material definitions:
PA Polyamide



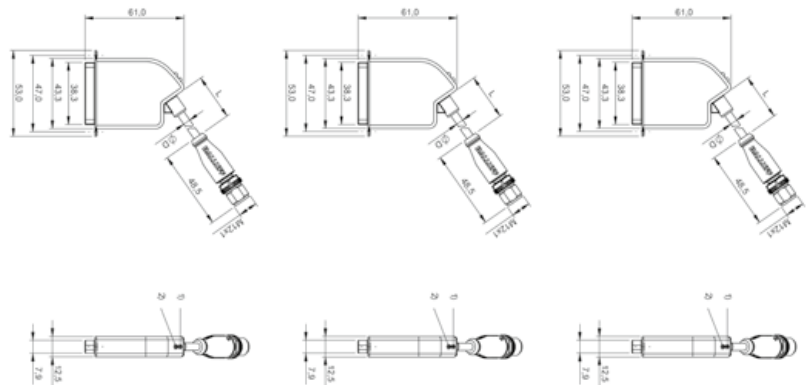
BNI006H BNI IOL-750-V11-K007	BNI006T BNI IOL-751-V11-K007	BNI006U BNI IOL-752-V09-K007	BNI006W BNI IOL-752-V11-K007	
Active splitter	Active splitter	Active splitter	Active splitter	
53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	
PA	PA	PA	PA	
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
A	A	B	B	
0	0	0	0	
16	16	16	16	
16	16	16	16	
300 mA	300 mA, separate output power	300 mA, isolated output power	300 mA, isolated output power	
25 pin D-sub female	25 pin D-sub female	25 pin D-sub female	25 pin D-sub female	
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	
IP40	IP40	IP40	IP40	
SMC VQC	SMC VQC	Festo CPV	SMC VQC	



VALVE INTERFACES



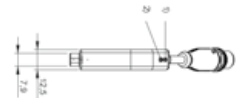
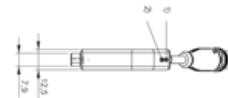
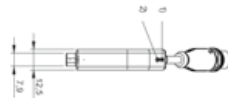
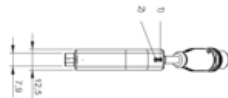
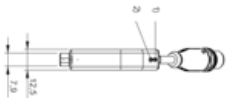
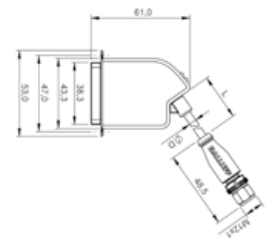
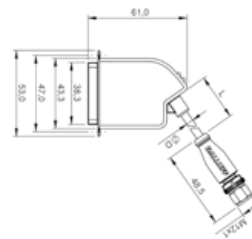
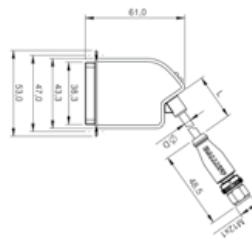
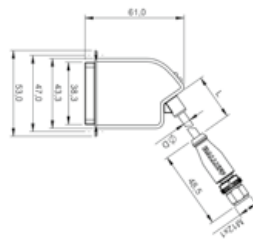
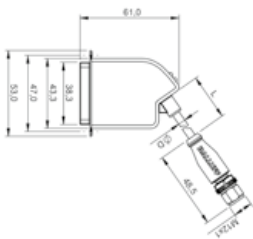
	BNI IO01F BNI IO-Link 1.0-V01-K007	BNI IO01H BNI IO-Link 1.0-V03-K007	BNI IO01K BNI IO-Link 1.0-V01-K007	
Principle of operation	Active splitter	Active splitter	Active splitter	
Dimension	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	
Housing material	PA	PA	PA	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Port class	A	A	A	
Digital inputs	none	none	none	
Digital outputs	24	24	24	
Outputs, number	24	24	24	
Output current max.	2 A	2 A	2 A, separate output power	
Connection slots	25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP40	IP40	IP40	
For use with	Festo MPA	SMC VQC	Festo MPA	



Housing material definitions:
PA Polyamide



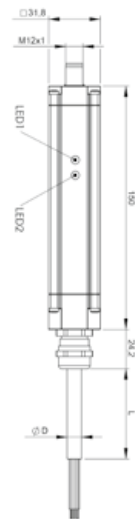
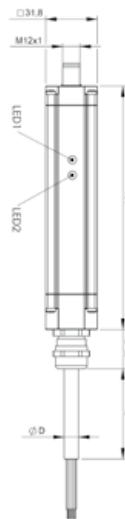
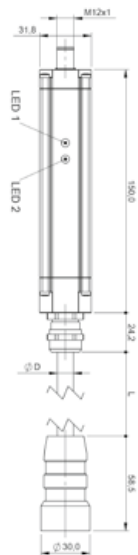
BNI001M BNI IOL-751-V03-K007	BNI001E BNI IOL-750-V02-K007	BNI001J BNI IOL-750-V04-K007	BNI001L BNI IOL-751-V02-K007	BNI001N BNI IOL-751-V04-K007
Active splitter	Active splitter	Active splitter	Active splitter	Active splitter
53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm	53 x 60.8 x 12.5 mm
PA	PA	PA	PA	PA
IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
A	A	A	A	A
none	none	none	none	none
24	16	16	16	16
24	16	16	16	16
2 A, separate output power	2 A	2 A	2 A, separate output power	2 A, separate output power
25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female	25 pin, D-sub female
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP40	IP40	IP40	IP40	IP40
SMC VQC	Festo CPV	SMC VQC	Festo CPV	SMC VQC



UNIVERSAL DISCRETE I/O

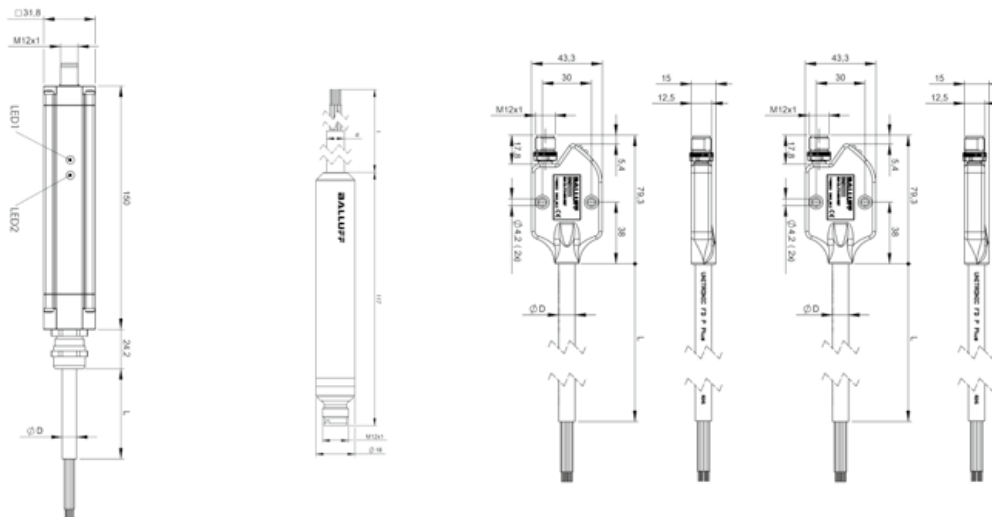


	BNI004W BNI IOL-770-V06-A027	BNI007E BNI IOL-770-000-A027	BNI005Z BNI IOL-771-000-A027	
Dimension	31.8 x 31.8 x 185 mm	31.8 x 31.8 x 185 mm	31.8 x 31.8 x 185 mm	
Housing material	Aluminum	Aluminum	Aluminum	
Connection slots	M27 Female 26-pole	Open cable, 25-pole	Open cable, 17-pole	
Analog inputs	none	none	none	
Analog output	none	none	none	
Digital inputs	none	none	none	
Digital outputs	24xPNP	24xPNP	16xPNP	
Outputs, number	24	24	16	
Inputs, number	none	none	none	
Output current max.	300 mA	300 mA	300 mA	
Additional function	Broken wire detect	Broken wire detect	Broken wire detect	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Ambient temperature	-5...70 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	





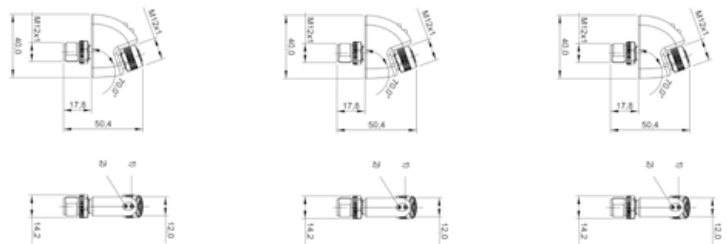
BNI005Y BNI IOL-772-000-A027	BNI00AE BNI IOL-772-002-E032	BNI005M BNI IOL-771-000-K027	BNI005N BNI IOL-772-000-K027	
31.8 x 31.8 x 180 mm	18 x 18 x 1775 mm	43.3 x 15 x 83.3 mm	43.3 x 15 x 83.3 mm	
Aluminum	Stainless steel (1.4305)	PA	PA	
Open cable, 10-pole	Open cable, 10-pole	Open cable, 17-pole	Open cable	
none	none	none	none	
none	none	none	none	
none	8x PNP, Type 3	16	8	
8xPNP	8x IO configurable	16	8	
8	8	16	8	
none	8	16	8	
300 mA	1.6 A	200 mA	200 mA	
Broken wire detect	none	none	none	
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
-5...55 °C	-5...60 °C	-5...55 °C	-5...55 °C	
IP67	IP69K/IP68	IP54	IP54	



ANALOG IO



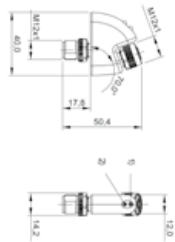
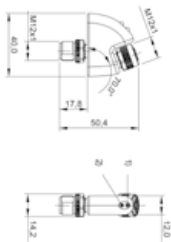
	BNI004C BNI IOL-722-000-K023	BNI004E BNI IOL-724-000-K023	BNI0042 BNI IOL-714-000-K023	
Dimension	14.2 x 50.4 x 40 mm	14.2 x 50.4 x 40 mm	14.2 x 50.4 x 40 mm	
Housing material	PA	PA	PA	
Connection slots	M12x1 Female, 5-pole, A-coded	M12x1 Female, 5-pole, A-coded	M12x1 Female, 5-pole, A-coded	
Analog inputs	none	none	Analog, voltage (0...10 V)	
Analog output	Analog, current (4...20 mA)	Analog, voltage (0...100 mA)	none	
Digital inputs	none	none	none	
Digital outputs	none	none	none	
Outputs, number	1	1	none	
Inputs, number	none	none	1	
Output current max.	none	none	none	
Additional function	none	none	none	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
IP rating	IP67	IP67	IP67	



Housing material definitions:
PA Polyamide



BNI0041 BNI IOL-712-000-K023	BNI004T BNI IOL-716-000-K023			
14.2 x 50.4 x 40 mm	14.2 x 50.4 x 40 mm			
PA	PA			
M12 Female-5pole, A-coded	M12 Female-5pole, A-coded			
Analog, current (4...20 mA)	Analog, temperature (Pt100)			
none	none			
none	none			
none	none			
none	none			
1	1			
none	none			
none	none			
IO-Link 1.0	IO-Link 1.0			
-5...70 °C	-5...70 °C			
IP67	IP67			





TEMPERATURE AND ANALOG I/O

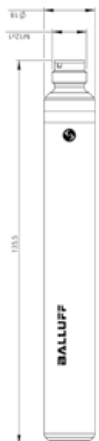
	BNI00C6 BNI IOL-730-002-E023	BNI00C7 BNI IOL-740-002-E023	BNI00C8 BNI IOL-725-002-E023	
Principle of operation	Converter	Converter	Converter	
Dimension	Ø18 135.5 mm	Ø18 135.5 mm	Ø18 135.5 mm	
Housing material	Stainless steel (1.4305) PTFE	Stainless steel (1.4305) PTFE	Stainless steel (1.4305) PTFE	
Signal type	Analog, voltage/analog, current/analog, temperature	Analog, temperature	Analog, voltage/analog, current	
Fastening detail	Diameter 18.0 mm, mounting clamps	Diameter 18.0 mm, mounting clamps	Diameter 18.0 mm, mounting clamps	
Connection slots	M12x1-Female, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded	M12x1-Female, 5-pole, A-coded	
Configurable analog inputs	Thermocouple (Type J, Type K) Pt100, Pt1000, Voltage, Current	Thermocouple (Type J, Type K) Pt100, Pt1000		
Configurable analog output			Voltage, Current	
Digital inputs				
Operating voltage U _b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Inputs, number				
Output current max.	1.4 A	1.4 A	1.4 A	
Additional function				
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Approval/conformity	CE	CE	CE	
IP rating	IP67	IP67	IP67	



Housing material definitions:
PTFE Polytetrafluorethylene



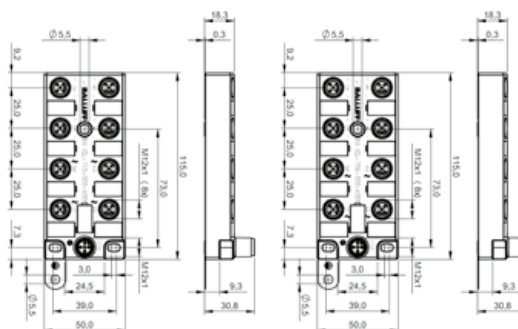
BNI00C9 BNI IOL-717-002-E023				
Converter				
Ø18 135.5 mm				
Stainless steel (1.4305) PTFE				
Analog, voltage/analog, current/analog, temperature				
Diameter 18.0 mm, mounting clamps				
M12x1-Female, 5-pole, A-coded				
Voltage, Current, Pt100, Pt1000				
18...30.2 VDC				
IO-Link 1.1				
-5...70 °C				
CE				
IP67				





ANALOG I/O HUBS

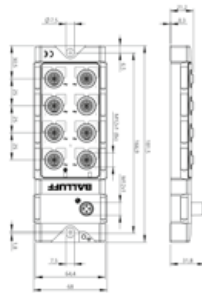
	BNI0008 BNI IOL-710-000-K006	BNI0007 BNI IOL-709-000-K006	
Dimension	50 x 31 x 115 mm	50 x 31 x 115 mm	
Housing material	PA	PA	
Interface	IO-Link 1.0	IO-Link 1.0	
Analog inputs	4x Analog, voltage (0...10 V)	4x Analog, current (4...20 mA)	
Digital inputs	4x PNP, Type2	4x PNP, Type2	
Digital outputs	none	none	
Auxiliary interfaces	n/a	n/a	
Outputs, number	none	none	
Inputs, number	8	8	
Output current max.	n/a	n/a	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Additional function	n/a	n/a	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	
Cycle time min.	3 ms	3 ms	
Scope of delivery	Part label (12x), Blind plugs M12 (4x), Short guide	Part label (12x), Blind plugs M12 (4x), Short guide	





TEMPERATURE AND ANALOG I/O HUBS

	BNI100AJ BNI 10L-719-002-Z012
Dimension	68 x 31.8 x 181.5 mm
Housing material	Die-cast zinc
Interface	IO-Link 1.1
Analog inputs	8x Configurable Analog, voltage/analog, current/analog, temperature (0...10 V/-10...10 V/0...5 V/-5...5 V/5...10 V/4...20 mA/ 0...20 mA/Pt100/Pt1000/Thermocouple Type J/Thermocouple Type K)
Digital inputs	none
Digital outputs	none
Outputs, number	none
Inputs, number	8
Output current max.	n/a
Connection slots	8x M12x1-Female, 5-pole, A-coded
Additional function	n/a
Operating voltage Ub	18...30.2 VDC
Ambient temperature	-5...70 °C
IP rating	IP67
Cycle time min.	54.4 ms
Scope of delivery	Part label (20x), Blind plugs M12 (4x), Ground strap, Lock washer, Short guide, M4x6 screw





SIGNAL CONVERTER

	BNI100C1 BNI10L-760-002-E066		
Principle of operation	Converter		
Dimension	Ø18 135.5 mm		
Housing material	Stainless steel (1.4305) PTFE		
Signal type			
Fastening detail	Diameter 18.0 mm, mounting clamps		
Connection slots	M12x1 -Female, 8-pole, A-coded		
Configurable analog inputs	none		
Configurable analog output	none		
Digital inputs	2x PNP, Type 3		
Operating voltage U_b	18...30.2 VDC		
Inputs, number	2		
Output current max.	1.4 A		
Additional function	RS232		
Interface	IO-Link 1.1		
Ambient temperature	-5...55 °C		
Approval/conformity	CE		
IP rating	IP67		

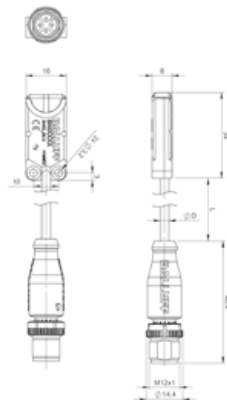


Housing material definitions:
 PP Polypropylene



MEMORY MODULE

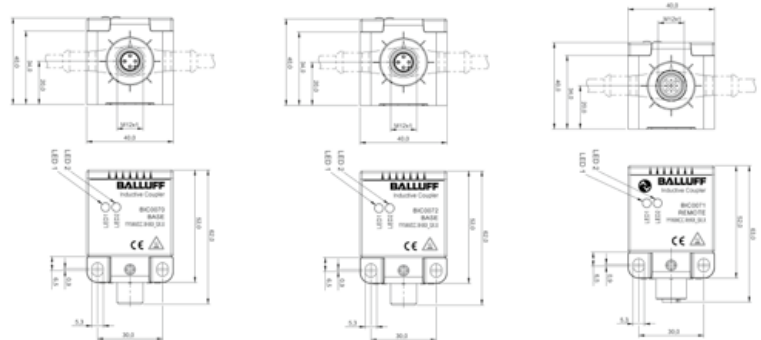
	BN100AM BNI IOL-910-002-K060		
Dimension	34 x 16 x 8 mm		
Housing material	PP		
Connection type	Cable with connector, 0.30 m, PUR		
IO-Link function	IO-Link Memory Device		
Interface	IO-Link 1.1		
Data storage	1 kB		
Operating voltage U_b	18...30.2 VDC		
Ambient temperature	-25...70 °C		
IP rating	IP67 when threaded in		
Cycle time min	2 ms		





INDUCTIVE COUPLERS

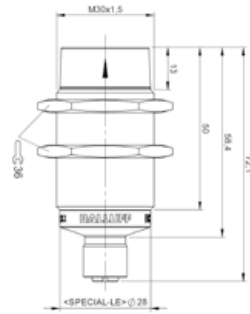
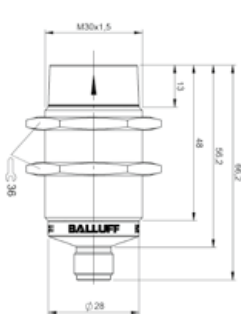
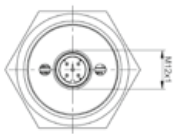
	BIC0070 BIC 1B0-ITA50-Q40KFU-SM4A4A	BIC0072 BIC 1B0-IT005-Q40KFU-SM4A4A	BIC0071 BIC 2B0-ITA50-Q40KFU-SM4A5A	
Component	Base	Base	Remote	
Dimension	40 x 40 x 63 mm	40 x 40 x 63 mm	40 x 40 x 63 mm	
Style	block style	block style	block style	
Housing material	PBT	PBT	PBT	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Installation	non-flush	non-flush	non-flush	
Connection	Connector, M12x1, 4-pole	Connector, M12x1, 4-pole	Connector, M12x1, 5-pole	
Function	IO-Link	IO-Link	IO-Link	
Transmission distance	0...5 mm	0...5 mm	0...5 mm	
Output voltage	24 VDC	24 VDC	24 VDC	
Rated output current	500 mA	500 mA (auto shutoff)	500 mA	
Transmission power	12 W	12 W	12 W	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE	CE	CE	



Housing material definitions:
PBT Polybuteneterephthalate



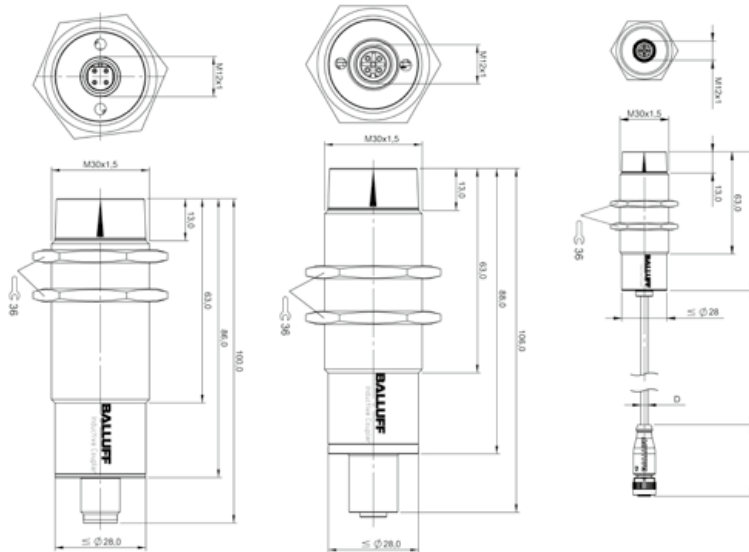
BIC007L BIC 1B0-ITA50-M30MF1-SM4A5A	BIC007E BIC 2B0-ITA50-M30MF1-SM4A5A			
Base	Remote			
M30 x 66.2 mm	M30 x 72.1 mm			
M30x1.5	M30x1.5			
Brass	Brass			
IO-Link 1.1	IO-Link 1.1			
non-flush	non-flush			
Connector, M12x1, 5-pole	Connector, M12x1, 5-pole			
IO-Link	IO-Link			
0...10 mm	0...10 mm			
24 VDC	24 VDC			
650 mA	650 mA			
15.6 W	15.6 W			
-5...55 °C	-5...55 °C			
IP67	IP67			
CE	CE			





INDUCTIVE COUPLERS

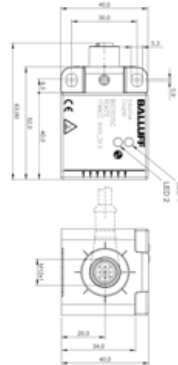
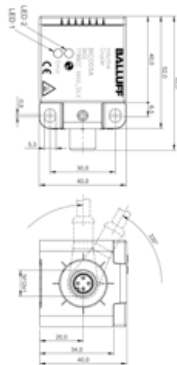
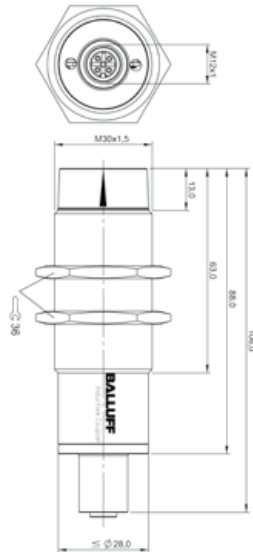
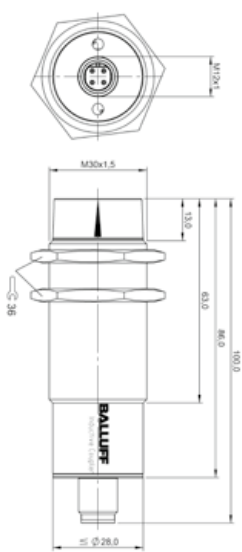
	BIC0053 BIC 110-IAA50-M30MI3-SM4A4A	BIC0054 BIC 210-IAA50-M30MI3-SM4A5A	BIC005H BIC 210-IAA50-M30MI3-BPX04-002-M45A	
Component	Base	Remote	Remote	
Dimension	M30 x 100 mm	M30 x 106 mm	M30 x 85.5 mm	
Style	M30x1.5	M30x1.5	M30x1.5	
Housing material	Brass	Brass	Brass	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Installation	non-flush	non-flush	non-flush	
Connection	Connector, M12x1, 4-pole	Connector, M12x1, 5-pole	Connector, 5-pole, 0.20 m, PUR	
Function	IO-Link (Input Only)	IO-Link (Input Only)	IO-Link (Input Only)	
Transmission distance	0...5 mm	0...5 mm	0...5 mm	
Output voltage	24 VDC	24 VDC	24 VDC	
Rated output current	500 mA	500 mA	500 mA	
Transmission power	12 W	12 W	12 W	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
IP rating	IP67	IP67	IP67	
Approval/conformity	CE	CE	CE	
Process Data	10 bytes Device In Zone	10 bytes Device In Zone	10 bytes Device In Zone	



Housing material definitions:
PBT Polybuteneterephthalate



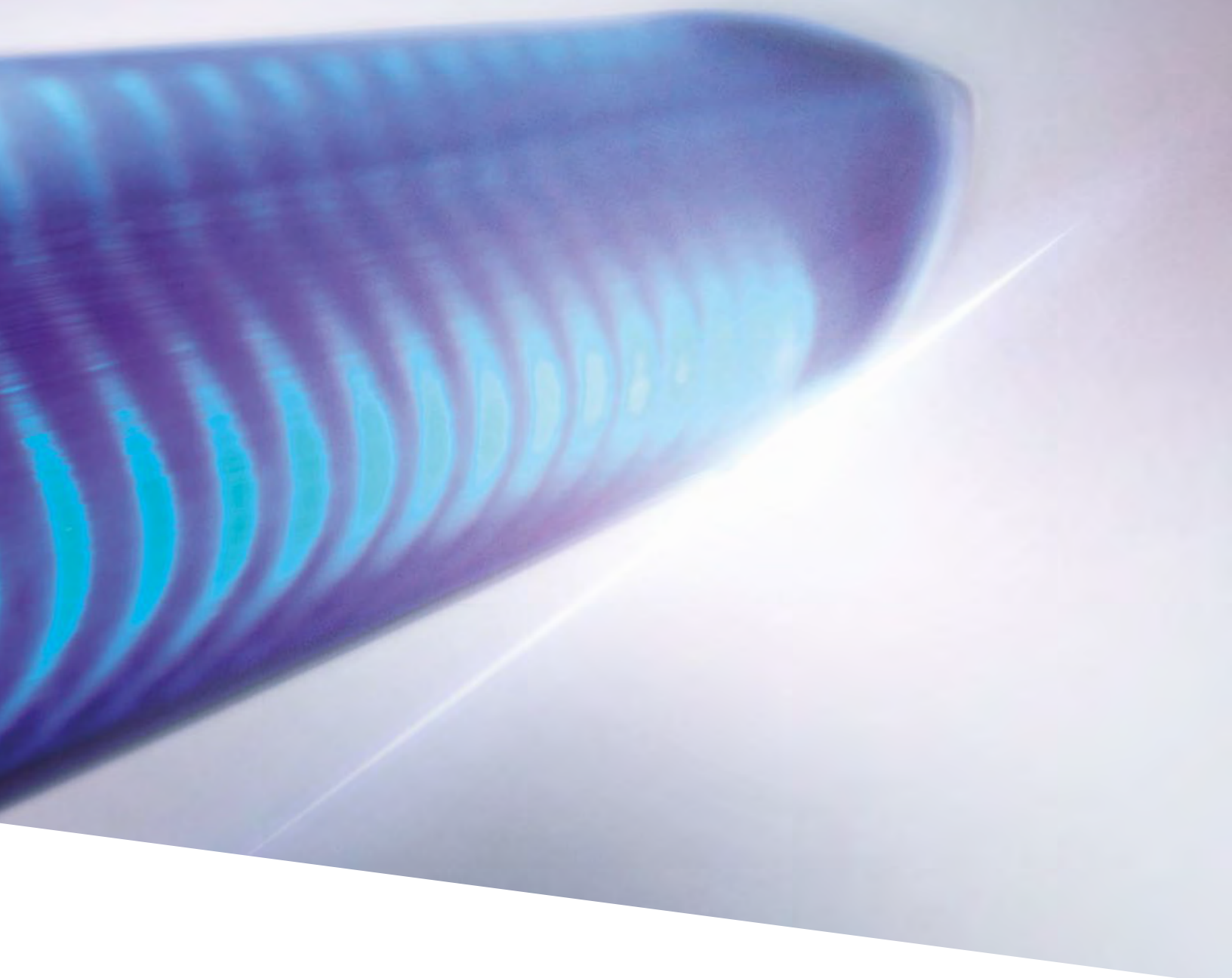
BIC000C BIC 110-I2A50-M30MI3-SM4A4A	BIC000E BIC 210-I2A50-M30MI3-SM4A5A	BIC005A BIC 110-I2A50-Q40KFU-SM4A4A	BIC005C BIC 210-I2A50-Q40KFU-SM4A5A	
Base	Remote	Base	Remote	
M30 x 100 mm	M30 x 106 mm	40 x 40 x 63 mm	40 x 40 x 63 mm	
M30x1.5	M30x1.5	block style	block style	
Brass	Brass	PBT	PBT	
IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
non-flush	non-flush	non-flush	non-flush	
Connector, M12x1, 4-pole	Connector, M12x1, 5-pole	Connector, M12x1, 4-pole	Connector, M12x1, 5-pole	
IO-Link (Input Only)	IO-Link (Input Only)	IO-Link (Input Only)	IO-Link (Input Only)	
0...5 mm	0...5 mm	0...5 mm	0...5 mm	
24 VDC	24 VDC	24 VDC	24 VDC	
500 mA	500 mA	500 mA	500 mA	
12 W	12 W	12 W	12 W	
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	
IP67	IP67	IP67	IP67	
CE	CE	CE	CE	
3 bytes Device In Zone	3 bytes Device In Zone	3 bytes Device In Zone	3 bytes Device In Zone	



All the information you need at a glance

HUMAN MACHINE INTERFACES

 *innovating automation*



With our signaling and display devices, you know at all times what and where things stand with production and exactly where a tool is located. You can reliably monitor the state of machines and systems and display the sensor output signals.

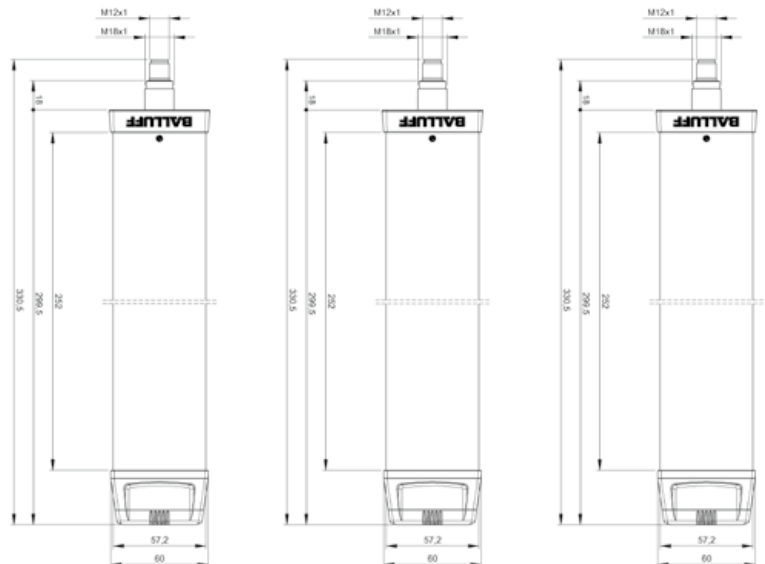
Your Balluff solutions

- SmartLight tower lights
- SmartLight indicator



SMARTLIGHT TOWER LIGHT

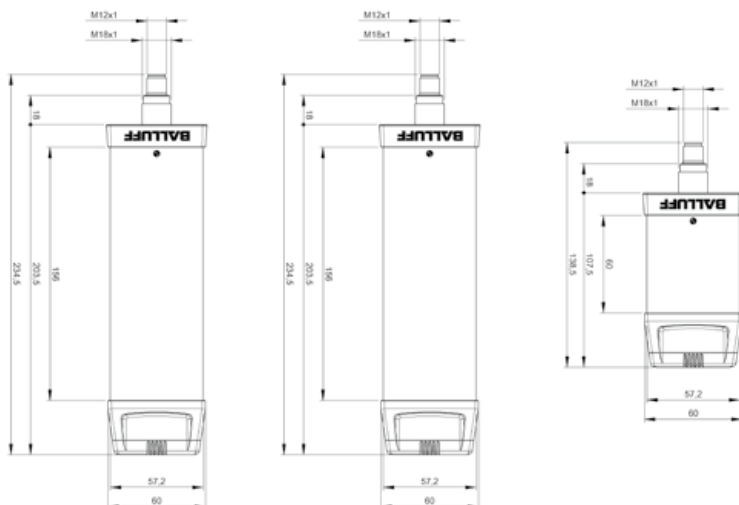
	BNI0083 BNI IOL-802-000-Z037	BNI0084 BNI IOL-802-000-Z037-006	BNI0085 BNI IOL-802-102-Z037	
Dimension	60 x 60 x 330 mm	60 x 60 x 330 mm	60 x 60 x 330 mm	
Housing material	PC, transparent	PC, transparent, chrome	PC, transparent	
Fastening detail	1-hole screw mount	1-hole screw mount	1-hole screw mount	
Segments, number max.	5	5	5	
Colors, number	7	7	7	
Predefined colors	Yellow, white, green, blue, red, orange, configurable	Yellow, white, green, blue, red, orange, configurable	Yellow, white, green, blue, red, orange, configurable	
Function indicator	Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	
Display	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	
Buzzer function	yes	yes	yes	
Volume max.	95 dB/m	95 dB/m	95 dB/m	
IO-Link function	Device	Device	Device	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
IP rating	IP30	IP30	IP30	
Approval/conformity	CE	CE	CE, cULus	
Process data	On/off	On/off	mode select, color select, on/off	



Housing material definitions:
 PC Polycarbonate



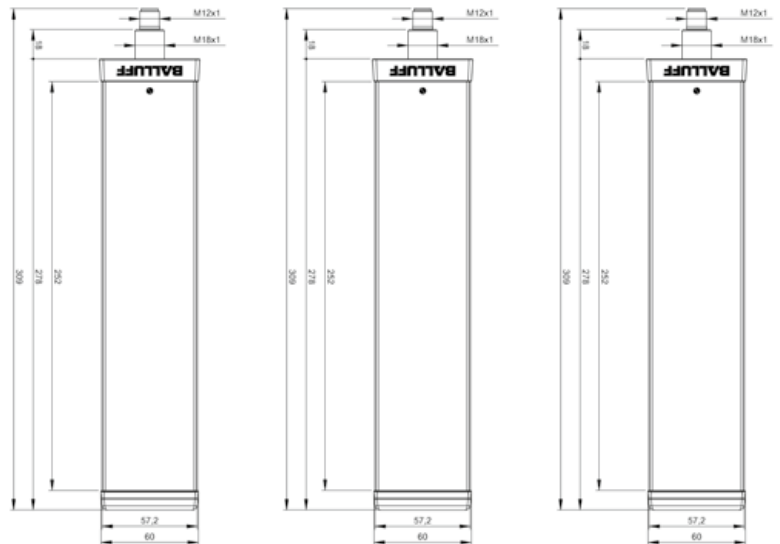
BNI0086 BNI IOL-801-000-Z037	BNI008A BNI IOL-801-102-Z037	BNI0087 BNI IOL-800-000-Z037		
60 x 60 x 235 mm	60 x 60 x 235 mm	60 x 60 x 140 mm		
PC, transparent	PC, transparent	PC, transparent		
1-hole screw mount	1-hole screw mount	1-hole screw mount		
3	3	1		
7	7	7		
Yellow, white, green, blue, red, orange, configurable	Yellow, white, green, blue, red, orange, configurable	Yellow, white, green, blue, red, orange, configurable		
Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	Run light, stack light, flexible		
Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable		
yes	yes	yes		
95 dB/m	95 dB/m	95 dB/m		
Device	Device	Device		
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
-5...50 °C	-5...50 °C	-5...55 °C		
IP30	IP30	IP30		
CE	CE, cULus	CE, cULus		
On/off	mode select, color select, on/off	On/off		





SMARTLIGHT TOWER LIGHT

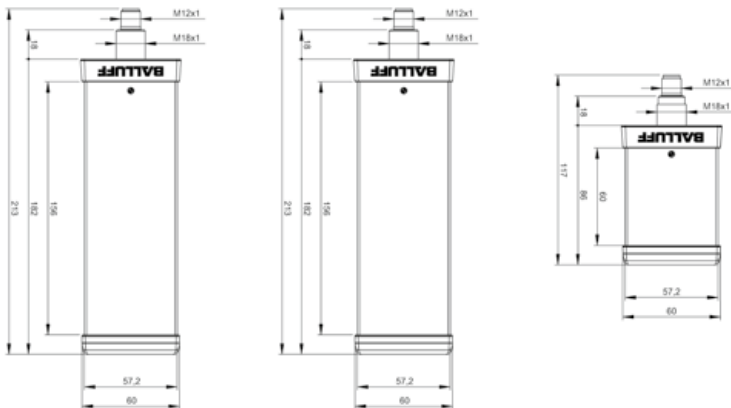
	BNI0072 BNI IOL-802-000-Z036	BNI0081 BNI IOL-802-000-Z036-006	BNI0082 BNI IOL-802-102-Z036	
Dimension	60 x 60 x 310 mm	60 x 60 x 310 mm	60 x 60 x 310 mm	
Housing material	PC, Transparent	PC, Transparent, chrome	PC, Transparent	
Fastening detail	1-hole screw mount	1-hole screw mount	1-hole screw mount	
Segments, number max.	5	5	5	
Colors, number	7	7	7	
Predefined colors	Yellow, white, green, blue, red	Yellow, white, green, blue, red	Yellow, white, green, blue, red, orange, configurable	
Function indicator	Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	
Display	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	
Buzzer function	no	no	no	
Volume max.	none	none	none	
IO-Link function	Device	Device	Device	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
IP rating	IP65	IP65	IP65	
Approval/conformity	CE	CE	CE	
Process data	On/off	On/off	mode select, color select, on/off	



Housing material definitions:
 PC Polycarbonate



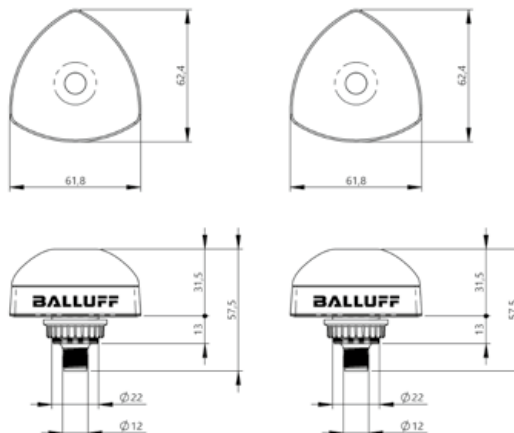
BNI007F BNI IOL-801-000-Z036	BNI0088 BNI IOL-801-102-Z036	BNI007T BNI IOL-800-000-Z036		
60 x 60 x 215 mm	60 x 60 x 215 mm	60 x 60 x 120 mm		
PC, Transparent	PC, Transparent	PC, Transparent		
1-hole screw mount	1-hole screw mount	1-hole screw mount		
3	3	1		
7	7	7		
Yellow, white, green, blue, red	Yellow, white, green, blue, red, orange, configurable	Yellow, white, green, blue, red		
Run light, level indicator, stack light, flexible	Run light, level indicator, stack light, flexible	Run light, stack light, flexible		
Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable	Static, flashing, flashing freely programmable		
no	no	no		
none	none	none		
Device	Device	Device		
IO-Link 1.1	IO-Link 1.1	IO-Link 1.1		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
-5...50 °C	-5...50 °C	-5...50 °C		
IP65	IP65	IP65		
CE	CE	CE		
On/off	mode select, color select, on/off	On/off		





SMARTLIGHT INDICATOR

	BNI00CZ BNI IOL-803-102-R036	BNI00EO BNI IOL-803-103-R036		
Number of segments max.	6	6		
Color spectrum per segment	Red, green, yellow, blue, white	Red, green, yellow, blue, white		
Supply voltage U_b	18...30V DC	18...30V DC		
Function indicator IO-Link	Green LED or Segment 1 (Fail Safe)	Green LED or Segment 1 (Fail Safe)		
Connection: IO-Link	M12, A-coded, male	M12, A-coded, male		
Max. load current	<100 mA	<100 mA		
Degree of protection per IEC60529	IP 65	IP 65		
Operating/Storage temperature	-5...+55 °C / -15...+70 °C	-5...+55 °C / -15...+70 °C		
Mounting	M22x1 thread with key	M22x1 thread with key		
Dimension (LxWxH) mm	60x60x30	60x60x30		
Base housing material	Fortron	Fortron		
Lens material	Polycarbonate	Polycarbonate		
Sensor type	None	IR laser, time-of-flight		
Sensor range	None	100mm adjustable down		
Approval/conformity	CE, cULus	CE, cULus		
Interface	IO-Link 1.1	IO-Link 1.1		
Cycle time	7.2 ms with IO-Link 1.1 Master	7.2 ms with IO-Link 1.1 Master		
IO-Link process data length	8-byte output, 1-byte input	8-byte output, 1-byte input		





Wide range of voltages and power levels

POWER SUPPLIES

 *innovating automation*



With our power supplies you can power any of your applications. At Balluff you will find a wide selection of voltages and power levels for reliable and efficient power supply. Our devices are approved according to CE/TÜV, UL or CCC.

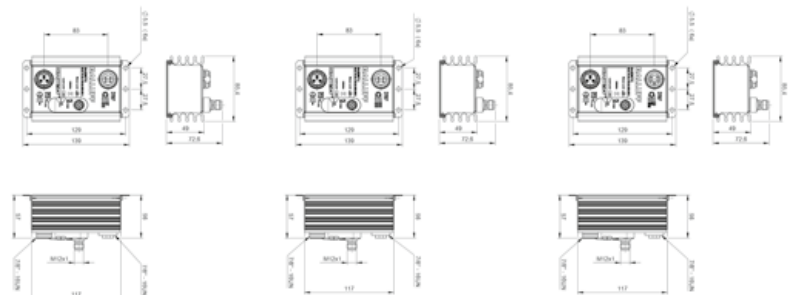
Your Balluff solutions

- IP67 machine mount power supplies
- IP20 DIN rail power supplies
- Communication adapter and signal converter

IP67 MACHINE MOUNT
POWER SUPPLIES



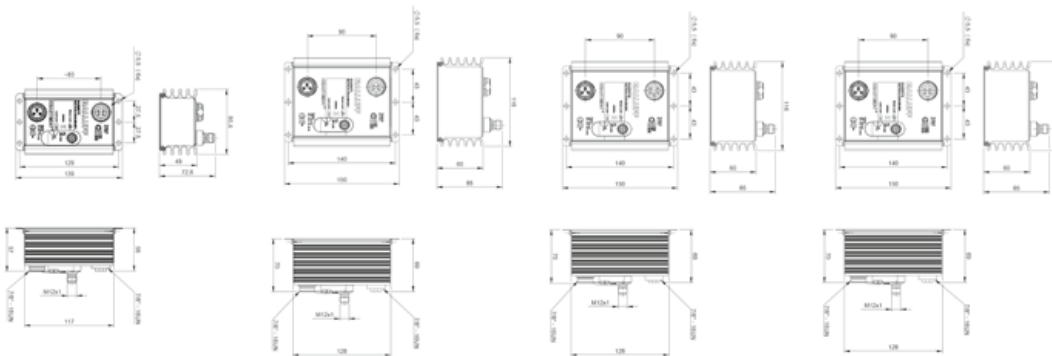
	BAE00TH BAE PS-XA-1W-24-038-601-I	BAE00J BAE PS-XA-1W-24-038-602-I	BAE00K BAE PS-XA-1W-24-038-603-I	
Dimension	85.4 x 72.6 x 139 mm	85.4 x 72.6 x 139 mm	85.4 x 72.6 x 139 mm	
Version	IP67	IP67	IP67	
Fastening detail	Flange mounting	Flange mounting	Flange mounting	
Housing material	Aluminum PC	Aluminum PC	Aluminum PC	
Connection type	Cable with connector	Cable with connector	Cable with connector	
Output capacity max.	91.2 W	91.2 W	91.2 W	
Connector style	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 4-pole, DC	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 4-pole, DC	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 5-pole, DC	
Input voltage	100...240 V AC, 1-phase	100...240 V AC, 1-phase	100...240 V AC, 1-phase	
Rated output voltage DC	24 V Isolated	24 V Grounded	24 V Isolated	
Rated output current	3.8 A	3.8 A	3.8 A	
Output current max.	6 A for max. 4s	6 A for max. 4s	6 A for max. 4s	
IP rating	IP67 with connector	IP67 with connector	IP67 with connector	
Approval/conformity	CE, cURus, IO-Link	CE, cURus, IO-Link	CE, cURus, IO-Link	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	
For use with BNI	DeviceNet	EtherNet/IP	Prof/CC-Link	



Housing material definitions:
PC Polycarbonate



BAE00TP BAE PS-XA-1W-24-038-607-I	BAE00TL BAE PS-XA-1W-24-080-604-I	BAE00TM BAE PS-XA-1W-24-080-605-I	BAE00TN BAE PS-XA-1W-24-080-606-I	
85.4 x 72.6 x 139 mm	116 x 85 x 150 mm	116 x 85 x 150 mm	116 x 85 x 150 mm	
IP67	IP67	IP67	IP67	
Flange mounting	Flange mounting	Flange mounting	Flange mounting	
Aluminum PC	Aluminum PC	Aluminum PC	Aluminum PC	
Cable with connector	Cable with connector	Cable with connector	Cable with connector	
91.2 W	192 W	192 W	192 W	
7/8" Male, 3-pole, AC, M12x1 IO-Link, 7/8" Female, 4-pole, DC	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 4-pole, DC	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 5-pole, DC	7/8" Male, 3-pole, AC M12x1 IO-Link, 7/8" Female, 4-pole, DC	
100...240 V AC, 1-phase	100...240 V AC, 1-phase	100...240 V AC, 1-phase	100...240 V AC, 1-phase	
24 V Isolated	24 V Isolated	24 V Isolated	24 V Grounded	
3.8 A	8 A	8 A	8 A	
6 A for max. 4s	12 A for max. 4s	12 A for max. 4s	12 A for max. 4s	
IP67 with connector	IP67 with connector	IP67 with connector	IP67 with connector	
CE, cURus, IO-Link	CE, cURus, IO-Link	CE, cURus, IO-Link	CE, cURus, IO-Link	
-25...70 °C	-25...70 °C	-25...70 °C	-25...70 °C	
EtherNet/IP	EtherNet/IP	Profi/CC-Link	EtherNet/IP	

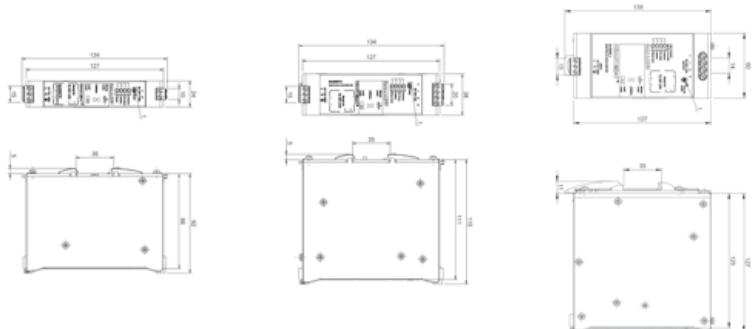


IP20 DIN RAIL
POWER SUPPLIES



	BAE00TR BAE PS-XA-1W-24-025-101	BAE00T4 BAE PS-XA-1S-24-050-102	BAE00LJ BAE PS-XA-1S-24-100-103	
Dimension	24 x 127 x 92 mm	38 x 127 x 120 mm	60 x 127 x 127 mm	
Version	DIN rail	DIN rail	DIN rail	
Fastening detail	DIN rail mount	DIN rail mount	DIN rail mount	
Housing material	Aluminum	Aluminum	Aluminum	
Connection type	Input: Terminal 2.1...2.5mm ² , Input: AWG14...AWG13, Output: Terminal 0.65...2.5mm ² , Output: AWG19...AWG13, Alarm: Terminal 0.25...1.5 mm ² , Alarm: AWG23...AWG16	Input: Terminal 2.1...2.5mm ² , Input: AWG14...AWG13, Alarm: Terminal 0.25...1.5 mm ² , Alarm: AWG23...AWG16, Output: AWG18...AWG13, Output: Terminal 0.75...2.5mm ²	Input: Terminal 2.1...2.5mm ² , Input: AWG14...AWG13, Output: terminal 1...4 mm ² , Output: AWG17...AWG11, Alarm: Terminal 0.25...1.5 mm ² , Alarm: AWG23...AWG16	
Output capacity max.	60 W	120 W	240 W	
Connector style	Terminals	Terminals	Terminals	
Input voltage	100...240 V AC, 1-phase	115/230 V AC automatic selection, 1-phase	115/230 V AC automatic selection, 1-phase	
Rated output voltage DC	24 V	24 V	24 V	
Rated output current	2.5 A	5 A	10 A	
Output current max.	3.75 A for max. 4s 1x/min.	7.5 A for max. 4s 1x/min.	15 A for max. 4s 1x/min.	
IP rating	IP20	IP20	IP20	
Approval/conformity	CE, CB, cURus, cULus	CE, CB, cURus, cULus	CE, CB, cURus, cULus	
Ambient temperature	-25...70 °C	-25...70 °C	-25...70 °C	

Require BAE00TF for IO-Link connectivity

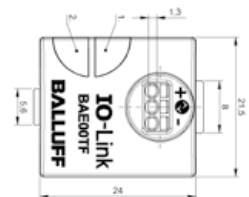
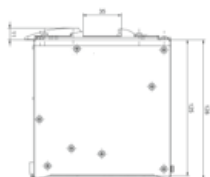
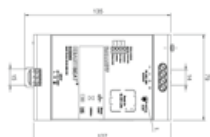




COMMUNICATION ADAPTER
AND SIGNAL CONVERTER

BAE00M3 BAE PS-XA-1S-24-200-104
79 x 127 x 139 mm
DIN rail
DIN rail mount
Aluminum
Output: AWG12... AWG11, Input: Terminal 2.1...2.5mm ² , Input: AWG14...AWG13, Alarm: Terminal 0.25...1.5 mm ² , Alarm: AWG23...AWG16, Output:Terminal 3.3...4 mm ²
480 W
Terminals
115/230 V AC automatic selection, 1-phase
24 V
20 A
30 A for max. 4s 1x/min.
IP20
CE
-25...70 °C

BAE00TF BAE SC-AE-I01	
Principle of operation	Infrared
Version	IO-Link 1.1
Application	Communication Adapter
Connection type 01	Spring clamp terminals
Use	HEARTBEAT power supplies
Material	PC
Dimension	21.5 x 24 x 10.7 mm
Fastening detail	Snap fastener
Ambient temperature	-25...70 °C
Approval/conformity	IO-Link
Process data	Output Voltage+ Current, On/off, Alarms



Housing material definitions:
PC – Polycarbonate

We assist you expertly and personally

SERVICES

 *innovating automation*



Meeting your specific needs

Our products are precisely tailored to your needs. Our services are too. As the leader in IO-Link technology, we provide fast commissioning, optimum process flows, cost effective solutions and the greatest possible planning security. Would you like advice on products and services? Tailor-made solutions? Or expert know-how on site? We are here to give you our comprehensive support – expert, uncomplicated and totally according to your specifications.

Your Balluff solutions

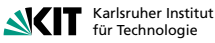
- Technical support
- Training
- Support and consultation
- Development and integration
- Product-accompanying services
- Customer-specific solutions



REFERENCES

Our complete commitment is to the success of our customers. We draw on future-looking technologies, market-oriented solutions and the expertise of an experienced manufacturer to increase your competitiveness. This is why leading companies worldwide trust in Balluff solutions.

We work together with such companies as:



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BAE00T4	BAE PS-XA-1S-24-050-102	200
BAE00TF	BAE SC-AE-I01	201
BAE00TH	BAE PS-XA-1W-24-038-601-I	198
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BN10091	BN1 IOL-302-S02-R026	156	BSP008F	BSP B100-EV002-D00S1B-S4	96	BSP00C5	BSP B005-EV002-A01S1B-S4	97
BN10092	BN1 PNT-507-005-Z040	140	BSP008H	BSP B250-EV002-D00S1B-S4	96	BSP00C6	BSP B010-EV002-A01S1B-S4	97
BN10093	BN1 IOL-309-002-Z019	166	BSP008J	BSP B400-EV002-D00S1B-S4	96	BSP00C7	BSP B020-EV002-A01S1B-S4	97
BN10096	BN1 EIP-508-005-E002	136	BSP008K	BSP B600-EV002-D00S1B-S4	96	BSP00C8	BSP B050-EV002-A01S1B-S4	97
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BN1009M	BN1 PNT-508-005-E002	138	BSP008N	BSP B002-EV002-A00S1B-S4	96	BSP00CC	BSP B400-EV002-A01S1B-S4	97
BN1009T	BN1 EIP-507-005-Z040	135	BSP008P	BSP B005-EV002-A00S1B-S4	96	BSP00CE	BSP B600-EV002-A01S1B-S4	97
BN1009U	BN1 ECT-507-005-Z040	142	BSP008R	BSP B010-EV002-A00S1B-S4	96	BSP00CF	BSP V002-EV003-D00S1B-S4	98
BN100A9	BN1 PNT-527-005-Z040	140	BSP008T	BSP B020-EV002-A00S1B-S4	96	BSP00CH	BSP V010-EV003-D00S1B-S4	98
BN100AA	BN1 EIP-527-005-Z040	136	BSP008U	BSP B050-EV002-A00S1B-S4	96	BSP00CJ	BSP B002-EV003-D00S1B-S4	98
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BN100AE	BN1 IOL-772-002-E032	175	BSP008Y	BSP B250-EV002-A00S1B-S4	96	BSP00CL	BSP B010-EV003-D00S1B-S4	98
BN100AJ	BN1 IOL-719-002-Z012	181	BSP008Z	BSP B400-EV002-A00S1B-S4	96	BSP00CM	BSP B020-EV003-D00S1B-S4	98
BN100AM	BN1 IOL-910-002-K060	183	BSP0090	BSP B600-EV002-A00S1B-S4	96	BSP00CN	BSP B050-EV003-D00S1B-S4	98
BN100AP	BN1 IOL-104-002-E012	150	BSP0091	BSP V002-EV002-A02S1B-S4	96	BSP00CP	BSP B100-EV003-D00S1B-S4	98
BN100AR	BN1 IOL-302-002-E012	150	BSP0092	BSP V010-EV002-A02S1B-S4	96	BSP00CR	BSP B250-EV003-D00S1B-S4	98
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BN100AU	BN1 IOL-302-002-Z046	166	BSP0094	BSP B005-EV002-A02S1B-S4	96	BSP00CU	BSP B600-EV003-D00S1B-S4	98
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BN100C1	BN1 IOL-760-002-E066	182	BSP0097	BSP B050-EV002-A02S1B-S4	96	BSP00CZ	BSP B002-EV003-D01S1B-S4	99
BN100C6	BN1 IOL-730-002-E023	178	BSP0098	BSP B100-EV002-A02S1B-S4	96	BSP00E0	BSP B005-EV003-D01S1B-S4	99
BN100C7	BN1 IOL-740-002-E023	178	BSP0099	BSP B250-EV002-A02S1B-S4	96	BSP00E1	BSP B010-EV003-D01S1B-S4	99
BN100C8	BN1 IOL-725-002-E023	178	BSP009A	BSP B400-EV002-A02S1B-S4	96	BSP00E2	BSP B020-EV003-D01S1B-S4	99
BN100C9	BN1 IOL-717-002-E023	179	BSP009C	BSP B600-EV002-A02S1B-S4	96	BSP00E3	BSP B050-EV003-D01S1B-S4	99
BN100CE	BN1 EIP-508-105-R015-007	136	BSP009E	BSP V002-EV002-A03S1B-S4	97	BSP00E4	BSP B100-EV003-D01S1B-S4	99
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BN100CL	BN1 IOL-355-S02-R013	129	BSP009J	BSP B005-EV002-A03S1B-S4	97	BSP00E7	BSP B600-EV003-D01S1B-S4	99
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BN100CN	BN1 IOL-302-S02-Z012	158	BSP009L	BSP B020-EV002-A03S1B-S4	97	BSP00E9	BSP V010-EV003-A01S1B-S4	99
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BOD0026	BOD 24K-LI05-S92	76	BSP00A5	BSP B400-EV002-D01S1B-S4	97	BSP00EW	BSP B020-EV003-A03S1B-S4	99
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BOS016T	BOS 23K-GI-RR10-S4	75	BSP00A8	BSP V010-EV003-A02S1B-S4	98	BSP00F0	BSP B250-EV003-A03S1B-S4	99
BOS0171	BOS 23K-GI-RD10-S4	72	BSP00A9	BSP B002-EV003-A02S1B-S4	98	BSP00F1	BSP B400-EV003-A03S1B-S4	99
BOS017A	BOS 23K-GI-RH10-S4	74	BSP00AA	BSP B005-EV003-A02S1B-S4	98	BSP00F2	BSP B600-EV003-A03S1B-S4	99
BOS01JJ	BOS 50K-PI-RD11-S4	73	BSP00AC	BSP B010-EV003-A02S1B-S4	98	BSP00LP	BSP B010-EV003-A03S1B-S4-001	104
BOS01UA	BOS 18M-PI-RD30-S4	72	BSP00AE	BSP B020-EV003-A02S1B-S4	98	BSP00LR	BSP V050-HV002-D00S1B-S4-001	104
BOS01UC	BOS 18M-PI-RE30-S4	70	BSP00AF	BSP B050-EV003-A02S1B-S4	98	BSP00PJ	BSP V002-DV004-D06S1A-S4	100
BOS01UE	BOS 18M-PI-PR30-S4	75	BSP00AH	BSP B100-EV003-A02S1B-S4	98	BSP00PK	BSP V010-DV004-D06S1A-S4	100
BOS01UF	BOS 18M-XI-RS30-S4	71	BSP00AJ	BSP B250-EV003-A02S1B-S4	98	BSP00PL	BSP B002-DV004-D06S1A-S4	100
BOS01UT	BOS 23K-XI-RS11-S4	71	BSP00AK	BSP B400-EV003-A02S1B-S4	98	BSP00PM	BSP B005-DV004-D06S1A-S4	100
BOS023E	BOS 18E-PI-RD30-S4	72	BSP00AL	BSP B600-EV003-A02S1B-S4	98	BSP00PN	BSP B010-DV004-D06S1A-S4	100
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BOS023J	BOS 18E-XI-RS30-S4	70	BSP00AP	BSP B002-EV003-A00S1B-S4	98	BSP00PT	BSP B100-DV004-D06S1A-S4	100
BOS0246	BOS 08E-PI-KH22-00,2-S49	74	BSP00AR	BSP B005-EV003-A00S1B-S4	98	BSP00PU	BSP B250-DV004-D06S1A-S4	100
BOS0247	BOS 08E-PI-KH22-S49	74	BSP00AT	BSP B010-EV003-A00S1B-S4	98	BSP00PW	BSP B400-DV004-D06S1A-S4	100
BOS026R	BOS 21M-UUI-RP30-S4	81	BSP00AU	BSP B020-EV003-A00S1B-S4	98	BSP00PY	BSP B600-DV004-D06S1A-S4	100
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