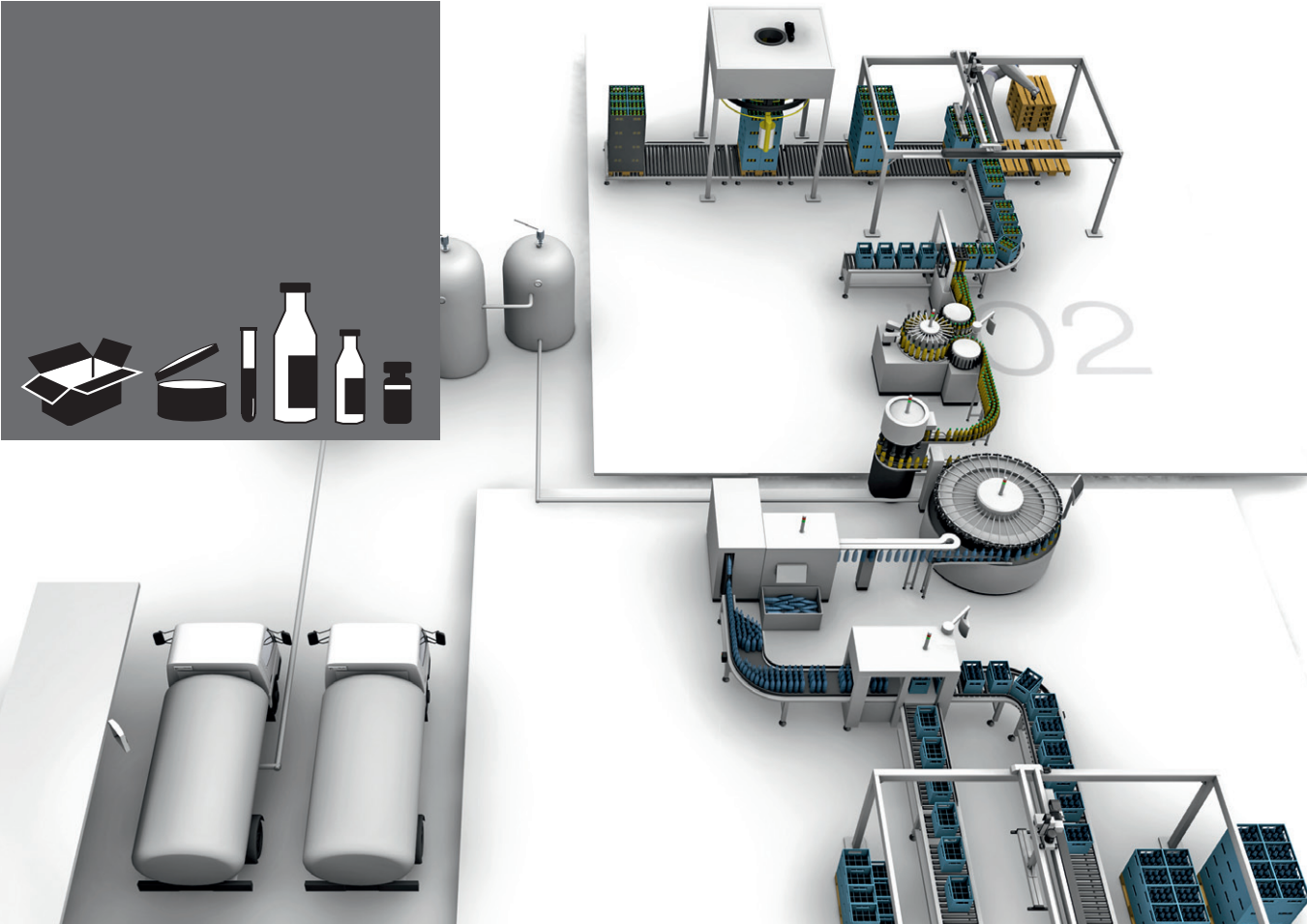


# BALLUFF

sensors worldwide

## Solutions for the Packaging Industry

Implement high standards flexibly, expertly and reliably







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# Filling and Packaging

## Handle complex tasks efficiently

### Broad expertise

The packaging industry has high demands. There are multifaceted requirements to align: the goals of mechanical engineers, producers, dealers and end users as well as globally expanding, regional but diverse markets. Furthermore, there are strict official requirements such as hygiene regulations, as well as constantly new packaging concepts that involve frequent format changes.

Balluff provides you with workable solutions for flexibly mastering these challenges: sensors and systems, network and connection technology for the entire industry and its various fields, primary, secondary and end-of-line packaging. Our products are available worldwide and internationally approved.

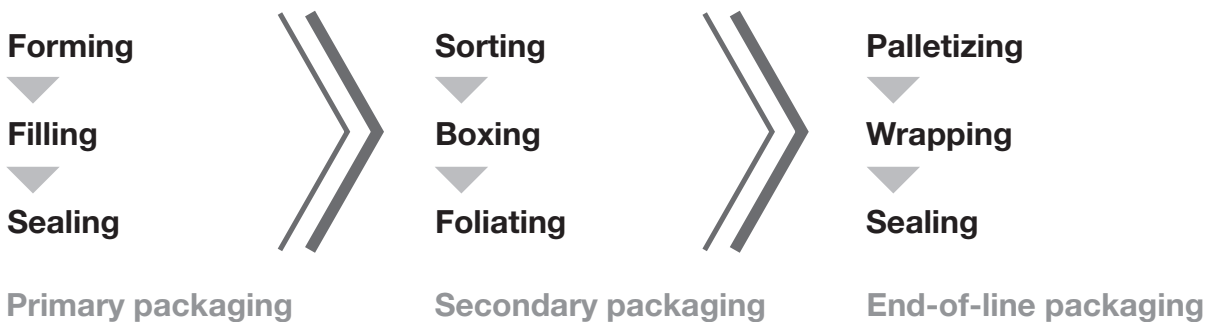
### Balluff technology stands for

- Highest system availability
- Fast and reliable size and product changeover
- Great flexibility even with complex processes, and
- High efficiency over the entire packaging process

### With Balluff, you achieve

- Optimized product lines
- Productive process chains and
- Maximum quality

Use Balluff to easily implement your quality requirements and those of your customers!



### For the best economy

In addition to quality and flexibility, market laws are extremely important. Because the competitive pressures are great. So economy is the first commandment.

Balluff sensors and equipment feature the latest technology and make mature industrial system concepts possible. Even with an extensive product line, they ensure easy operation and guarantee minimum set-up time. The increasing variety of shapes and sizes is then easily handled at high speeds. With high output and reduced costs. For you this means optimal productivity and best value creation.

### In every branch of packaging

Balluff technology can be used throughout the packaging industry. In pharmaceutical and cosmetics manufacturing, or in the food and beverage industries.

Our services are right for all industries and for each individual step. Whether with cans, bottles, vials, tubes or blister packs in primary packaging, with packets or boxes in the secondary segment, or with pallets in end-of-line packaging. Balluff satisfies in every field. For decades.



Foods



Beverages



Cosmetics



Pharmaceutical



Medical devices



# Primary packaging

**Fast, reliable packaging for the pharmaceuticals industry**



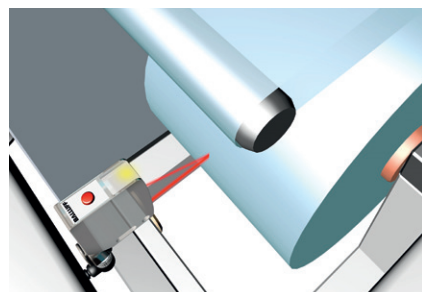
Photoelectric distance sensors BOD  
Page 28/29



Capacitive sensors BCS  
Page 30/31



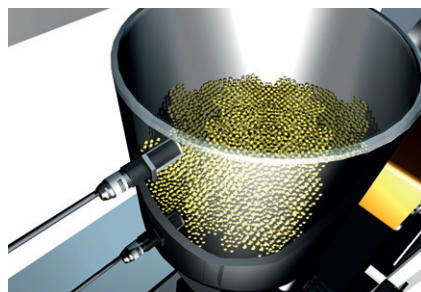
Contrast sensors BKT  
Page 23



**Reliably monitor the diameter of film rolls**

**The benefits to you**

- Precise, continuous measurement
- Regardless of color and material
- High process reliability



**Simple level measuring**

**The benefits to you**

- Reliable detection through non-metallic walls
- Wear- and adjustment-free
- For optimized production

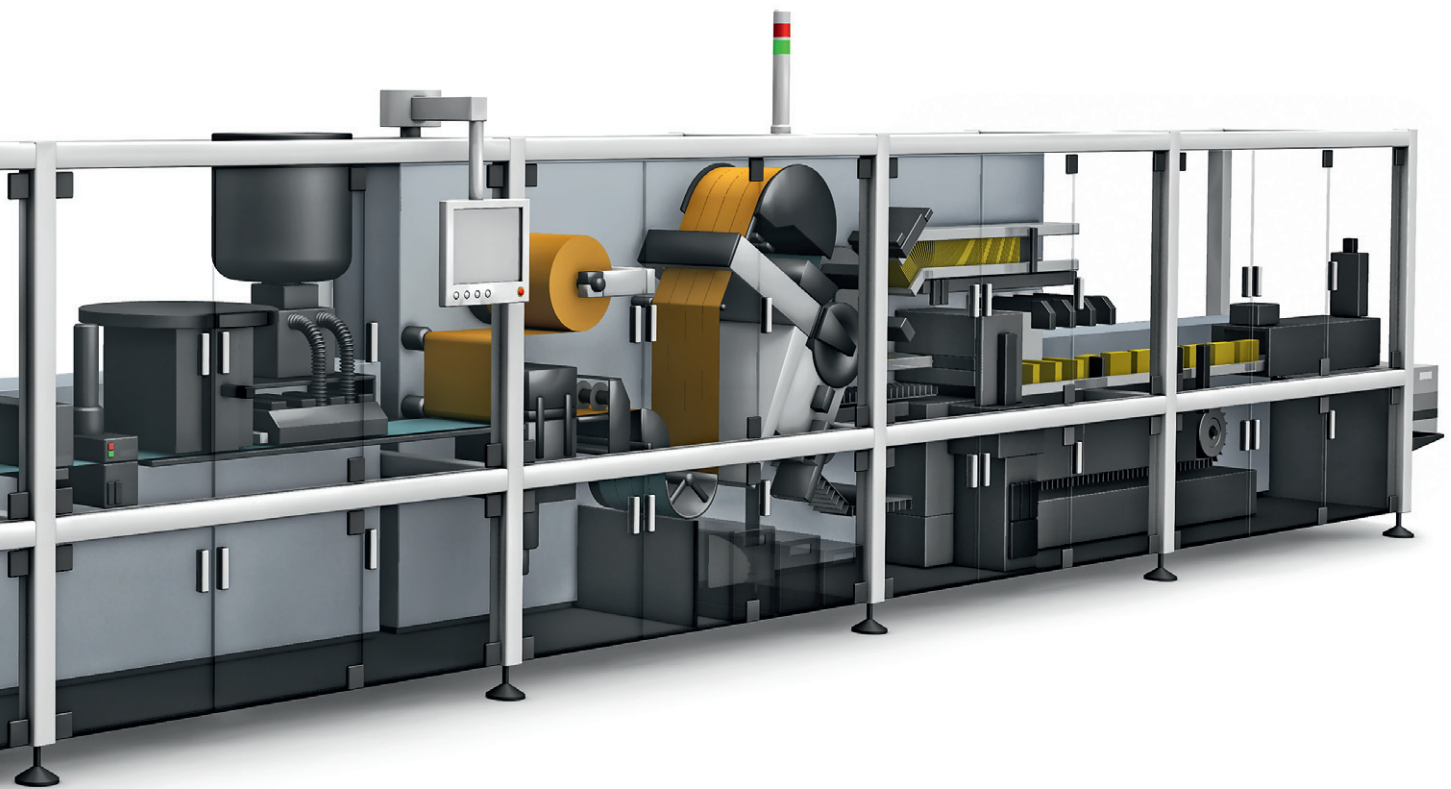


**Cut and punch blister packs precisely**

**The benefits to you**

- Quick, secure production
- Adjusting during operation
- High quality





### Sensors and systems for maximum flexibility

Primary packaging is the area with the greatest variety and highest demands. For positioning and feeding, joining and labeling, monitoring and sealing. Fluid or fixed materials. In ampules and vials, or capsules and blisters. Balluff products guarantee maximum possible flexibility. With extraordinary process reliability.

### Balluff reliability and security for high volumes

With Balluff you can execute the entire packaging process correctly and reliably down to the smallest detail, with the highest level of efficiency. Because Balluff fulfills high demands, even in sensitive areas. Counterfeit protection, format changes, track-and-trace and access controls are easy to achieve with our sensors and systems. Make the right decision with Balluff.



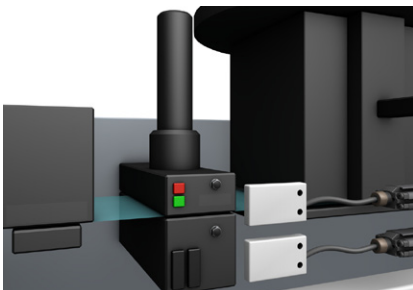
Industrial RFID systems BIS M  
Page 20/21



Vision sensors BVS  
Page 20/21



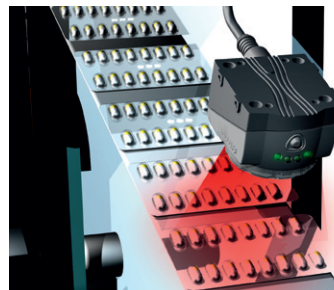
Industrial RFID systems BIS L  
Page 21



**Ensure quality using automatic identification of forming tools**

#### The benefits to you

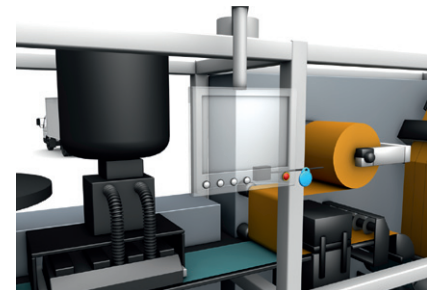
- Easy format change monitoring
- Short set-up times
- Reliable production



**Fill blister packs correctly – one sensor provides optimal quality**

#### The benefits to you

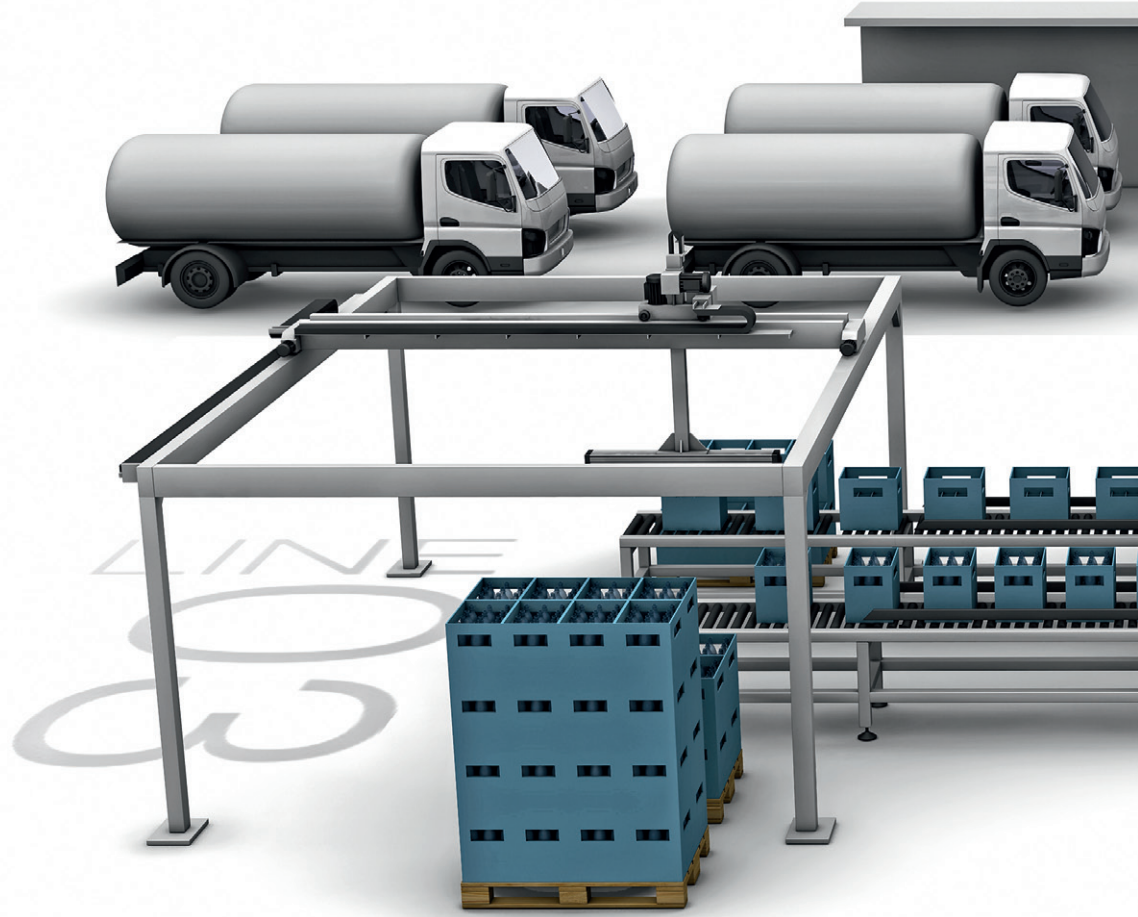
- Best results
- Greatest flexibility
- High productivity



**Ensure access control through stainless steel (read head positioned behind, tag positioned in front of stainless steel wall)**

#### The benefits to you

- Give qualified definitions of machine parameters
- Comprehensible configuration
- Increased process reliability



# Primary packaging

## Strict hygiene for the beverages industry



Through-beam fork sensors BGL  
Page 23



Diffuse sensor BOS with background suppression  
Page 22/23



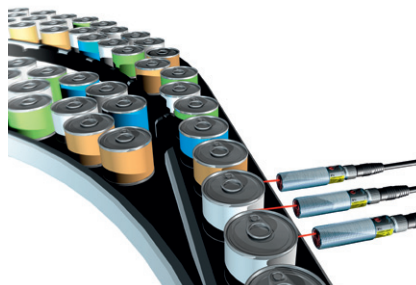
Vision sensors BVS  
Page 20/21



Easily check transparent bottles

### The benefits to you

- Fast, reliable inspection
- High output rate
- High process reliability



Reliably prevent conveyor belt backups

### The benefits to you

- Reliable positioning
- Dependable product flow
- High efficiency

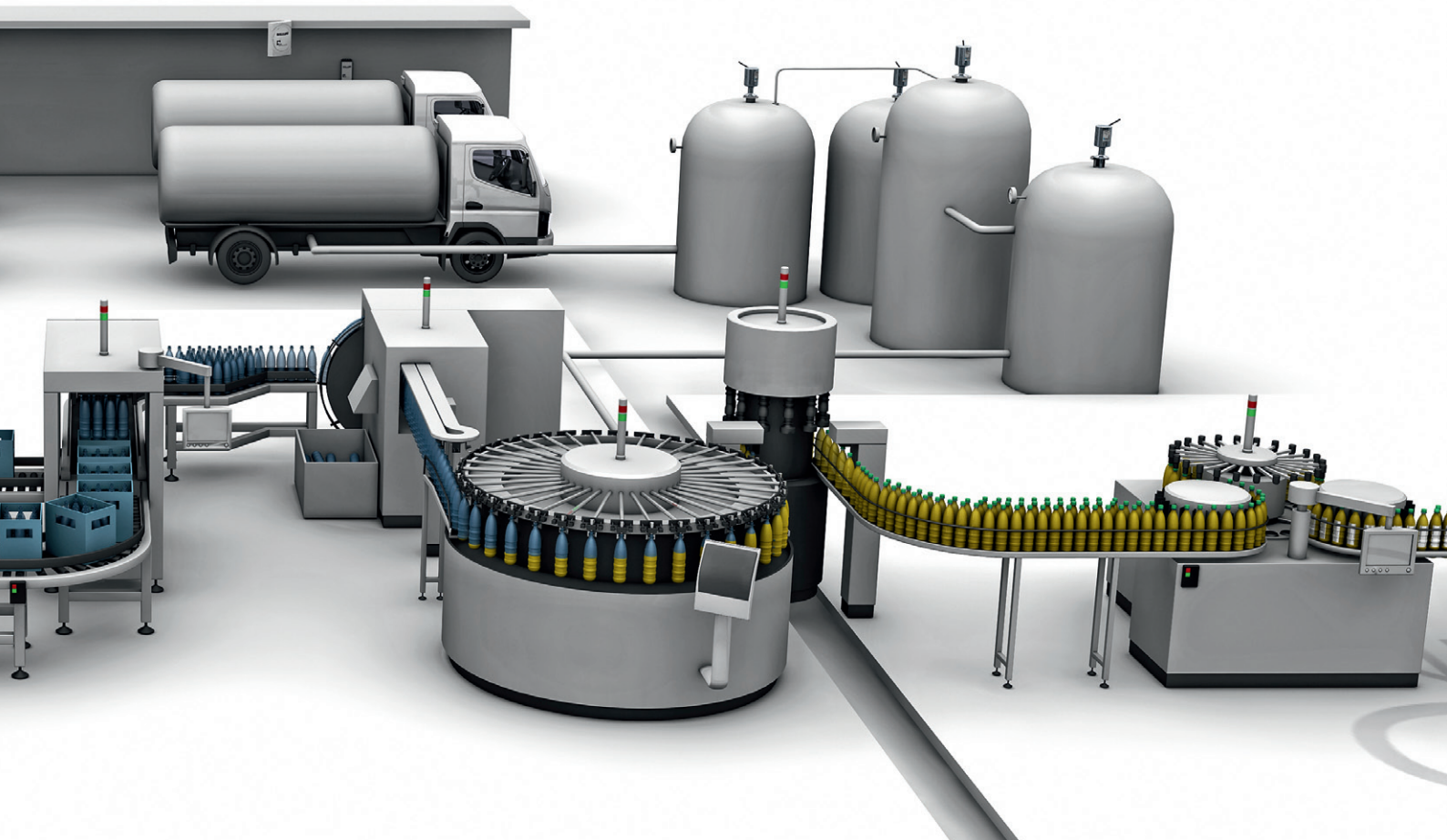


Dependably check seals

### The benefits to you

- Check several features simultaneously
- Easy change during the process
- Best productivity





**Quality through maximum hygiene. Dependability through Balluff!**

Filling plants are subject to the strictest hygiene regulations. Milk products, cosmetics, pharmaceuticals and beverages need to be filled in an aseptic and sterile process and correctly labeled. The requirements are substantial, especially because market laws are also in effect in the consumer sector.

Balluff provides security. Through components that make high cycle rates as well as quick and efficient filling processes possible. Profit from the highest quality.



Color sensors BFS  
Page 23



Micropulse® transducers BTL  
Page 29



FDA and EHEDG compliant



Industrial RFID system BIS U (UHF)  
Page 21



**Reliably detect color labels**

**The benefits to you**

- Greatest precision
- Optimal quality
- Maximum product dependability



**Continuously measure the level with absolute precision: in filling plants, in milk collection technology, etc.**

**The benefits to you**

- Continuous precision measurement
- High filling quality
- Best productivity

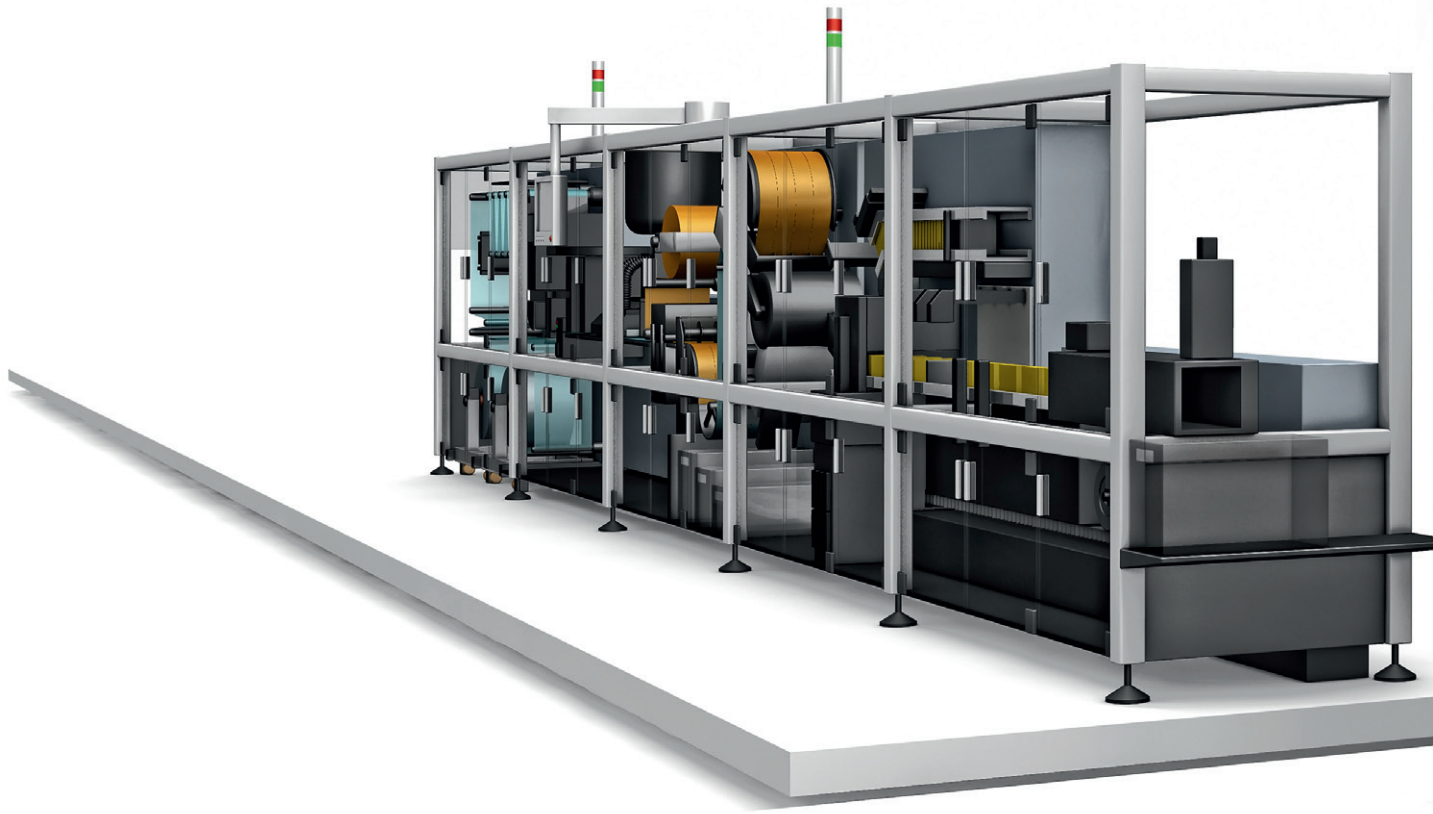
Versions with ATEX certification are also available.



**Identify vehicles securely**

**The benefits to you**

- Reliable track-and-trace
- Automated logistics



# Secondary packaging

## Cartoning – flexibly complete frequent format changes



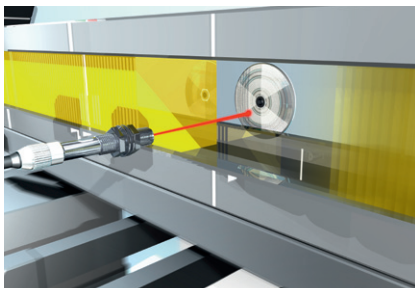
Retro-reflective sensors BOS  
Page 22/23



Inductive couplers BIC  
Page 18



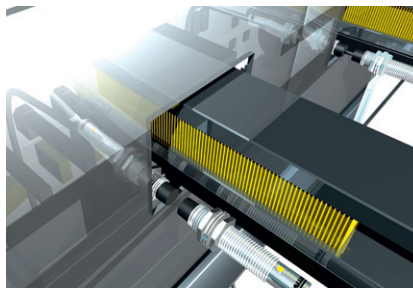
Sensors for pneumatic cylinders BMF  
Page 26/27



### Easily monitor levels

#### The benefits to you

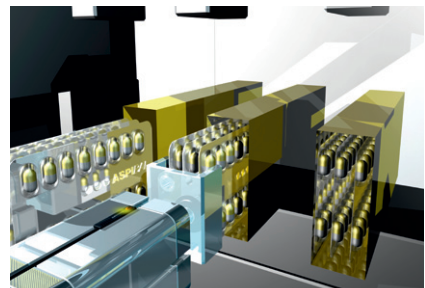
- Reliable loading
- Less scrap
- Greater productivity



### Quickly providing any variety of boxes

#### The benefits to you

- Non-contact signal and power transmission
- Maintenance-free

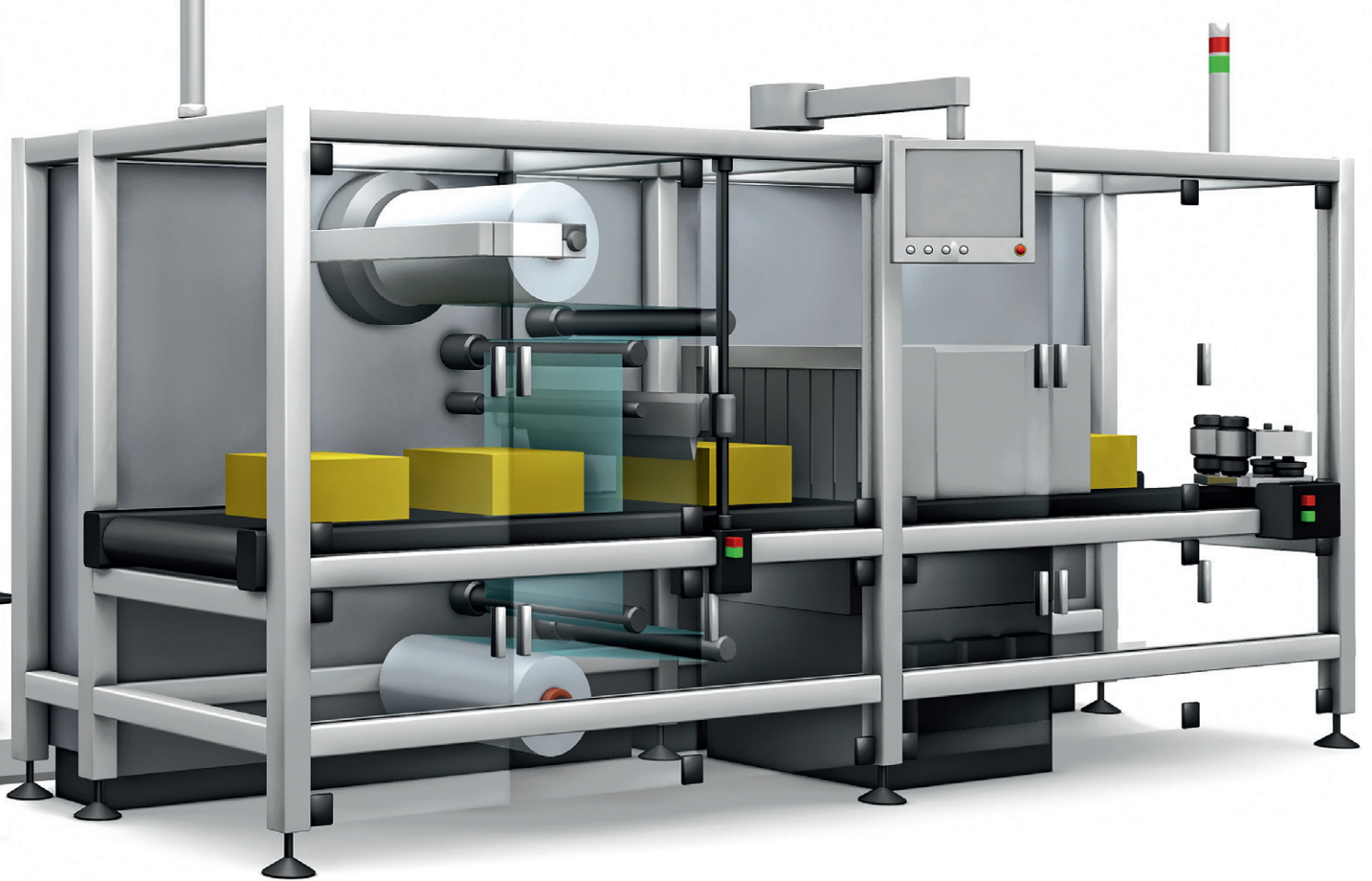


### Correctly feed stacked blister packs

#### The benefits to you

- Precise positioning
- Correct feeding
- Exceptional flexibility





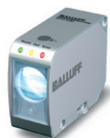
### Dependable production at high-speed

Packaging is conducive to marketing. Constantly new packaging concepts has to grab consumers' attention. The lot sizes are thereby smaller and entail frequent format changes.

The required flexibility and speed are reliably achieved with Balluff products. Because you can configure your machines innovatively and flexibly with our sensors and systems. Day in and day out.



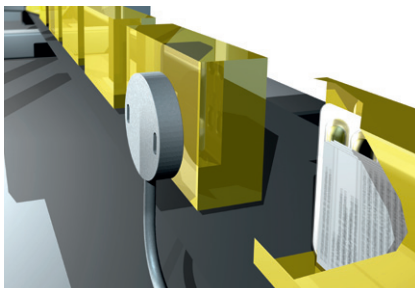
Capacitive sensors BCS  
Page 27



Photoelectric distance sensors BOD  
Page 28/29



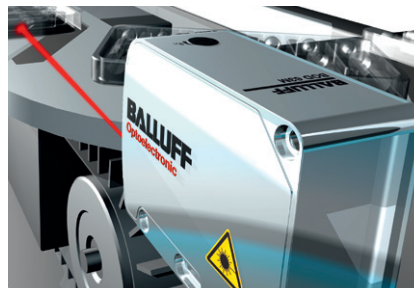
Transducers BTL/BML  
Page 29



### Reliably check packaging inserts

#### The benefits to you

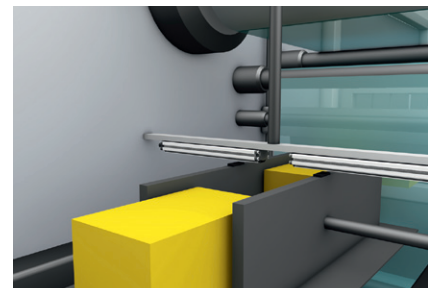
- Correct, fast results from a sealed box
- High efficiency



### Dependably transport boxes

#### The benefits to you

- Gentle drive and transport
- High product quality
- Maximum process reliability



### Adjust formats – automated as well as manually

#### The benefits to you

- Quick format changes in a short time
- Easy measuring and storing of the format data
- Optimizing the output rate



# End-of-line packaging

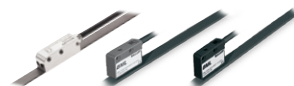
## Crates and boxes quickly palletized



Vision sensors BVS  
Page 20/21



Photoelectric distance sensors BOD  
Page 28/29



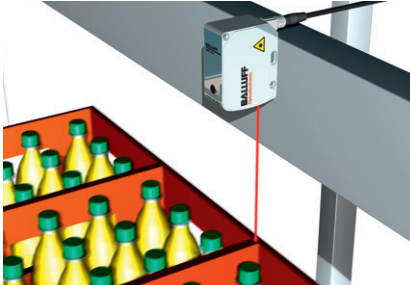
Magnetic linear encoder systems BML  
Page 29



### Dependably check barcodes

#### The benefits to you

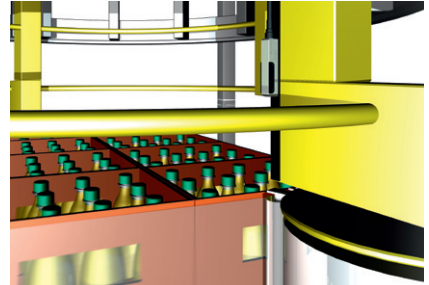
- Read, check and verify codes in one step
- Quick and reliable
- Reliably verify manufacture and expiration dates



### Reliably check pallet heights

#### The benefits to you

- Precise checking over long distance
- High flexibility
- Best efficiency



### Precisely position stretch wrap

#### The benefits to you

- Maximum protection
- Minimum consumption
- Simple to use, wear-free





**For maximum flexibility**

Packaging concepts for goods transport require maximum flexibility. At the same time, you have to produce the greatest possible quantity. To do so, make use of our support: for secure material flow with track-and-trace, correct handling of a wide variety of packages

and reliable handling of packaging material. And for many additional tasks. Balluff offers customized solutions for achieving your goals. Tailored exactly to your requirements. Contact us.



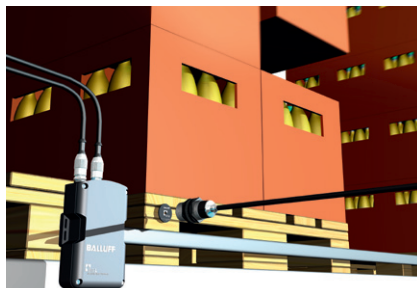
Industrial RFID systems BIS  
Page 20/21



Luminescence sensors BLT  
Object detection catalog



Fieldbus modules and components  
Page 18/19



**Uniquely identify and collate picked pallets**

**The benefits to you**

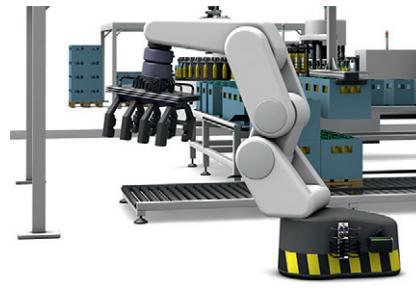
- Reliable even under changing formats
- Portable units for greatest flexibility



**Position bottles correctly before repackaging**

**The benefits to you**

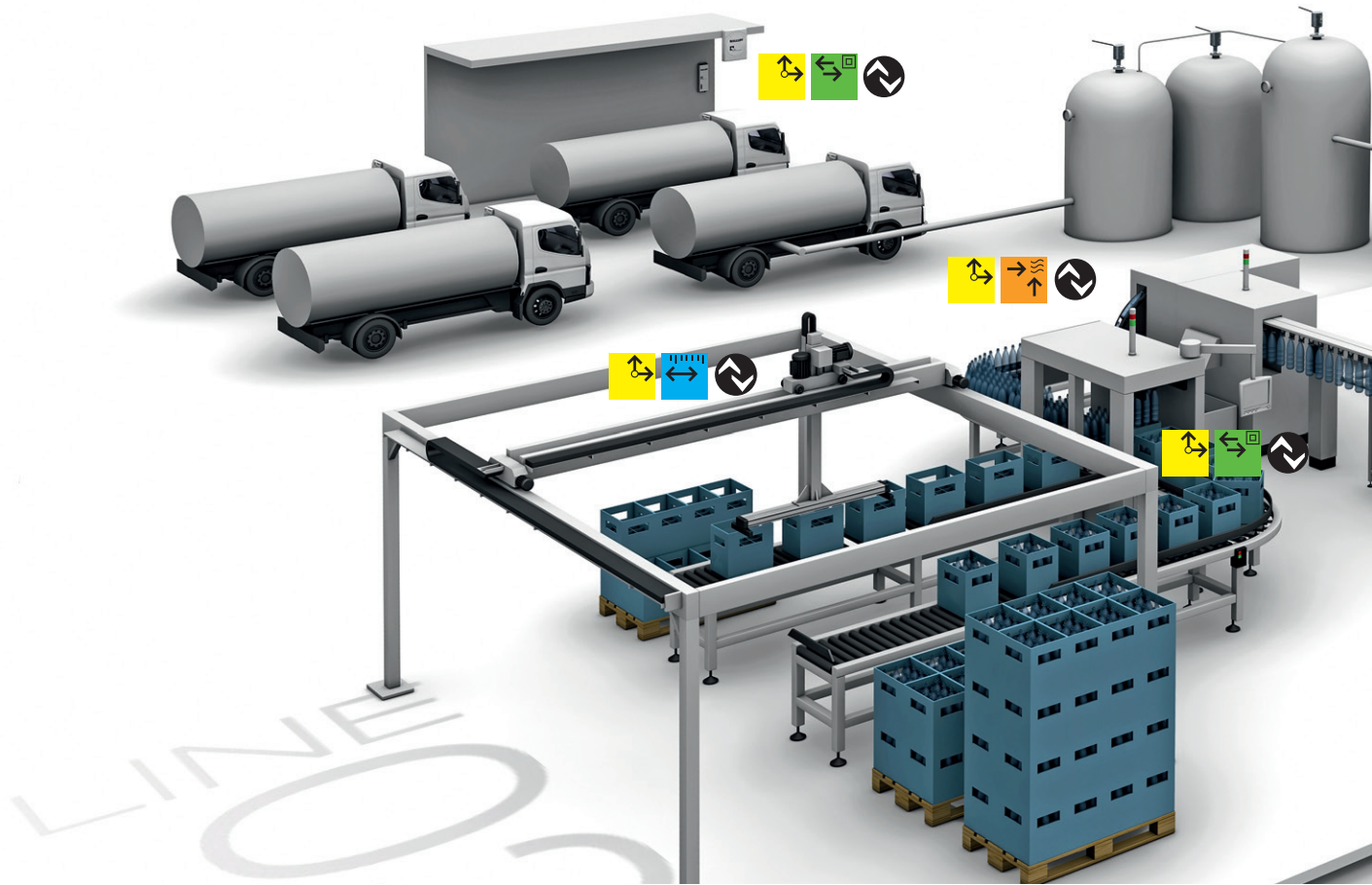
- Exact positioning
- Exceptional reliability
- Best quality



**Connect sensors and actuators to the controller**

**The benefits to you**

- Economical and real-time-capable data transfer
- Quick gripper changes through inductive couplers



# Expert solutions with IO-Link

**Utilize product variety, implement individual requirements**



**Industrial Networking and Connectivity**

## High-performance connection technology

- IO-Link master with various bus connections
- IO-Link hubs for sensor/actuator connection
- Inductive couplers
- Valve cluster switch



## Easily visualizing operating states. IO-Link SmartLight – the intelligent light for displaying machine states

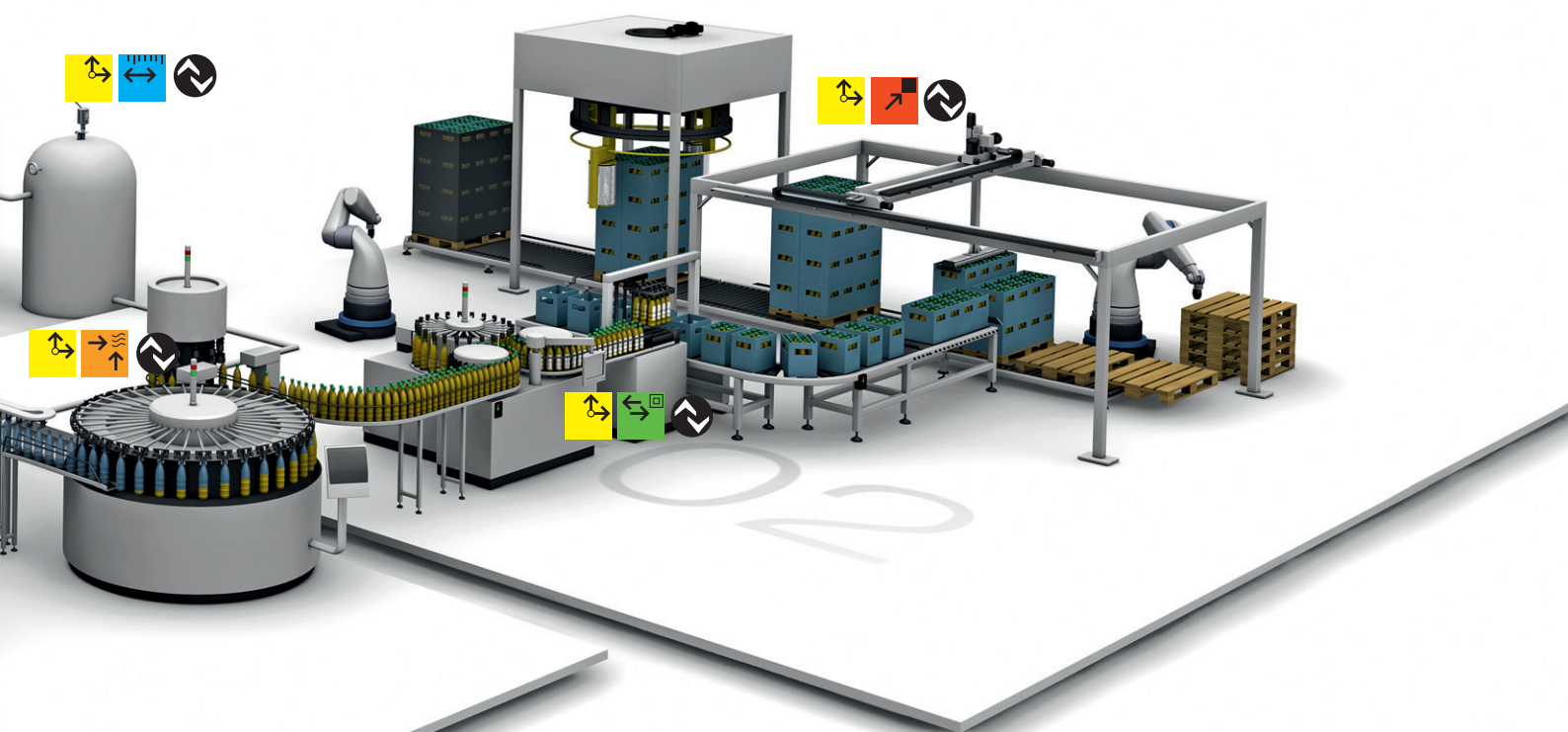


**Industrial Identification**

## Complete identification solutions for transfer systems. IO-Link RFID simplifies the integration of sensors and actuators.







# IO-Link

However complex the functions of the packaging industry, productivity demands simple solutions. And high efficiency requires flexibility and dependability. Balluff high-end performance is reliable and increases the added value in the entire process.

Because high-performance sensors and efficient connection technology guarantee customized solutions and innovative concepts, fine-tuned to your particular requirements. Take advantage of our wide product range and our expert solutions.

**IO-Link** provides you with communication from start to finish, from the control system to the lowest sensor/actuator level. The interface

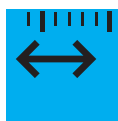
can be used universally and is fieldbus-independent; it transmits all sensor/actuator signals to the controller and, conversely, relays control data to the sensors and actuators. Through this process **IO-Link** integrates all sensors in the fieldbus structure. And enables comprehensive ongoing diagnostics and an automated configuration of parameters for **IO-Link devices** via the controller. **IO-Link** is easy to install. An unshielded standard industrial cable is all that is needed.

At the end of the day, **IO-Link** simplifies network topology while saving time and costs. **IO-Link** helps you maximize every technical opportunity.



**Object Detection**

Position monitoring during assembly. Set up best with IO-Link.



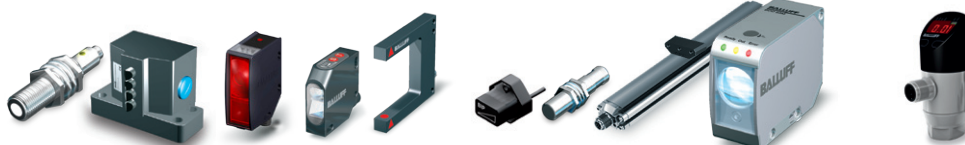
**Linear Position Sensing and Measurement**

Clamping distance monitoring in a machining center. Contactless position measurement with IO-Link.



**Condition Monitoring and Fluid Sensors**

Pressure monitoring in production. IO-Link pressure gauges right where the action is.

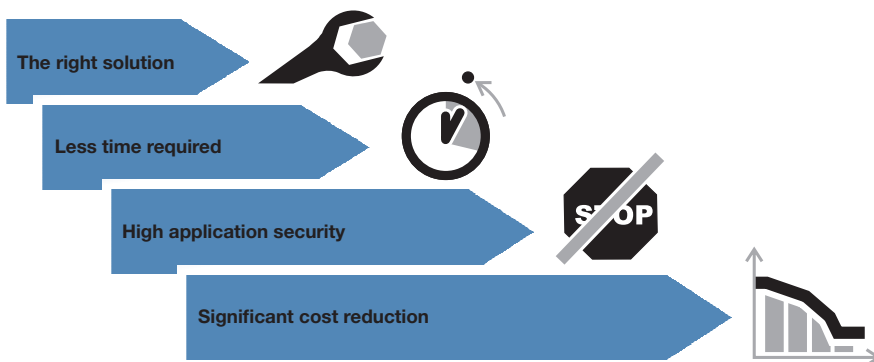


# Services

**Customized. According to your specifications.  
With maximum quality.**

Balluff offers highly efficient sensor technology with high-performance mini sensors and compact connection technology. And more. Because with our extensive services, you can obtain support direct from the manufacturer: from the design and planning of your projects, to testing and setup on-site, to training and support. Over the entire life cycle of our products.

This creates greater planning security and provides faster commissioning and an earlier start of production. This leads to higher productivity and more cost-effectiveness. And this relieves you of additional stress in your everyday work, giving you more time to focus on your core business.



You can find more information in our Services brochure or send us an e-mail: [tsm.de@balluff.com](mailto:tsm.de@balluff.com)

## Application advice

### through our TecSupport:

Discuss your technical requirements. And take advantage of our expertise.

Real-world examples:

- Selection of the correct identification procedure for an assembly line
- IO-Link concept as a cost-effective alternative to conventional wiring
- System consulting for radio frequency identification (RFID): identification of large steel pipes in adverse environments
- Recognizing multiple containers on a pallet in goods receiving

## Commissioning:

Order expert knowledge. And benefit from a quick start of production.

Real-world examples:

- Setting up an optical checkpoint with the BVS vision sensor
- Consulting and support during the programming of RFID systems BIS
- Installation and commissioning of a color detection application with the color sensor BFS

## Fully customized products:

Order individual versions according to your requirements: from preassembly to engineering services. And take advantage of the optimum.

Real-world examples:

- Extending the housing of a BHS high-pressure resistant inductive sensor
- Extra threads for the housing cover of a micropulse transducer BTL
- Customer-specific holder for an RFID data carrier
- Adaptation of the characteristics for analog sensors BAW

**Workshops:** make use of well-founded manufacturer knowledge. And benefit from application security.

- **Professional sensor use:** Select operating principles, install sensors professionally and ensure the reliable operation of your application.
- **Position and Distance Measurement:** This is how you perform precise and wear-free measurements.
- **RFID:** The right data at the right time at the right place.
- **Vision sensor:** Using an image processing sensor, ensure manufacturing quality in three steps.
- **Vision sensor identification:** Reliably identify all kinds of data matrix codes with an image-processing sensor.
- **Industrial networking with IO-Link:** Manage signals intelligently and cost-effectively.





# Traceability for the consumer goods industry

## Controlling the material flow across areas

Traceability for intralogistics means recording each step, for example in the packaging and filling process, and making it traceable at all times. To do so, the entire material flow is detected in automated form using Industrial RFID or barcodes: including everything from the subsuppliers to the primary and secondary packaging to end-of-line packaging. When there are different batches, lot sizes and packaging concepts, this is an immense gain. You have real-time access to all information, enabling you to make corrections even during the process. This makes just-in-time deliveries easier, ensures legal protection and compliance and guarantees product quality. A traceability solution documents whether a product was produced exactly to its specifications. The flexibility required for filling and packaging is given comprehensive support by traceability.

### Key factors for Return on Investment (ROI)

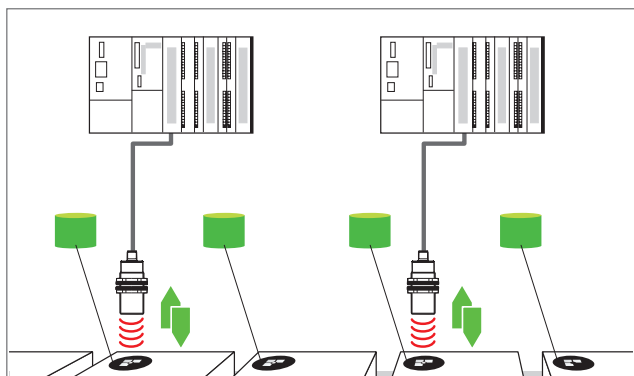
- Checking material flow from various subsuppliers
- Reducing time required and preventing delivery/quality problems
- Complying with legal requirements and documenting quality standards for each product
- Ensuring a high level of transparency, from the subsuppliers to the finished, palletized products

### Procedure

Reusable or disposable RFID data carriers and barcodes are attached to containers, packaging or pallets. As the goods pass through the various stations, the tags automatically receive and store information such as the exact quantity, individual process steps, version and serial number, etc.

### Decentralized data – read and write

For decentralized data storage, read/write tags are usually used.



RFID – read and write

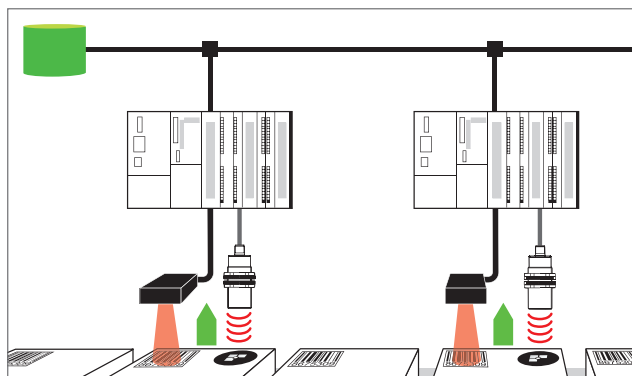


UHF RFID data carriers enable you to track all goods movements between the individual stations – from the incoming components to the outgoing end products.

After use, the RFID tag is either deleted or replaced by a new one. If read/write variants are used, the data can be processed in decentralized form. For the simple read-only variant, a central database is required. We would be glad to advise you on which technology is the best fit.

### Centralized data – read only

For centralized data storage, only an ID or type plate has to be read out, which is attached to the product or equipment via barcode or RFID tag.



Optical/RFID – read only





# Industrial Networking and Connectivity

## Economical connection of sensors/actuators to the controller

### IO-Link

#### Fieldbus modules



Type	8 ports		8 ports 4x IO-Link		M12, D-coded Female		8 ports 4x IO-Link		4 ports 4x IO-Link		4 ports 4x IO-Link		8 ports 4x IO-Link		8 ports		8 ports 4x IO-Link		16 ports		EtherCAT 8x IO-Link 16x I/O			
<b>Ordering code</b>	<b>BNI0052</b>	BNI PNT-302-105-Z015	<b>BNI004U</b>	BNI PNT-502-105-Z015	<b>BNI0054</b>	BNI PBS-302-103-Z001	<b>BNI005R</b>	BNI PBS-502-101-Z001	<b>BNI003P</b>	BNI PBS-507-002-Z001	<b>BNI0030</b>	BNI PBS-504-002-K008	<b>BNI0040</b>	BNI CCL-502-100-Z001	<b>BNI002F</b>	BNI CCL-104-100-Z001	<b>BNI0002</b>	BNI DNT-202-000-Z005	<b>BNI004A</b>	BNI EIP-502-105-Z015	<b>BNI0019</b>	BNI EIP-306-100-Z010	<b>BNI0077</b>	BNI ECT-508-105-Z015
Part number																								
No. of ports	8		8		8		8		4		4		8	8		8		8	16		16		8	
Inputs	16		16		16		16		8		4		12	16				16	16		16		16	
Outputs	16		16		16		16		8		4		12			8		16	16		16		16	
Max. config. inputs/outputs	16		16				16						12					16	16				16	
Analog input I																								
Analog input U																								
Analog output I																								
Analog output U																								
IO-Link ports, max.			4		4		4		4		4		4					4				8		
IO-Link version			1.1		1.1		1.1		1.1		1.1		1.1					1.1				1.1		

### Field components

#### IO-Link

#### Industrial RFID

#### Position switches

#### Linear position sensing and measurement

#### Inductive couplers

#### LED signal tower light



Type	IO-Link Industrial RFID systems read/write units				IO-Link Mechanical multiple position switches		Inductive positioning systems			IO-Link Micropulse transducers		Inductive couplers		IO-Link SmartLight								
<b>Ordering code</b>	<b>BIS00M1</b>	BIS M-402-045-004-07-S4	<b>BIS00LW</b>	BIS M-402-045-002-07-S4	<b>BIS00LK</b>	BIS M-401-045-001-07-S4	<b>BIS00LM</b>	BIS M-451-045-001-07-S4	<b>BNS 819</b>	---100-10-FD-S4	<b>BIP0007</b>	BIP LD2-T014-01-EP02	<b>BIP0004</b>	BIP LD2-T040-02-S4	<b>BTL6-U110-M</b>	---PF-S4	<b>BIC005A</b>	BIC 110-I2A50-Q40KFU-SM4A4A	<b>BIC005C</b>	BIC 210-I2A50-Q40KFU-SM4A5A	<b>BNI0072</b>	BNI IOL-802-000-Z036
Part number																						
IO-Link version	1.0/1.1				1.0					1.1				1.1						1.1		



## Sensor hubs



## Analog adapters



<b>BNI005E</b> BNI TCP-951-000-E028	Unmanaged																			
5																				
<b>BNI0067</b> BNI TCP-952-000-E029	Unmanaged																			
8																				
<b>BNI0048</b> BNI IOL-302-S01-Z013-C01	M12, metal IO-Link																			
8																				
16																				
16																				
16																				
1.0																				
<b>BNI0031</b> BNI IOL-102-000-Z012	M12, metal IO-Link																			
8																				
8																				
1.0																				
<b>BNI000P</b> BNI IOL-101-000-K018	M8, 3-pin IO-Link																			
4																				
4																				
<b>BNI0022</b> BNI IOL-104-S01-K021	M8, 4-pin IO-Link																			
8																				
16																				
1.0																				
<b>BNI0005</b> BNI IOL-102-000-K006	M12, 3-pin IO-Link																			
8																				
8																				
1.0																				
<b>BNI0042</b> BNI IOL-714-000-K023	Analog adapter IO-Link																			
1																				
<b>BNI0041</b> BNI IOL-712-000-K023																				
1																				
<b>BNI004T</b> BNI IOL-716-000-K023																				
1																				
<b>BNI004C</b> BNI IOL-722-000-K023																				
1																				
<b>BNI004E</b> BNI IOL-724-000-K023																				
1																				
1.0																				

## Actuator activation and commissioning tool



<b>BNI004W</b> BNI IOL-770-V06-A027	IO-Link Valve cluster interface																			
1.1																				
<b>BNI005M</b> BNI IOL-771-000-K027	Universal IO-Link on switch																			
1.1																				
<b>BNI001F</b> BNI IOL-750-V01-K007	IO-Link valve terminal connec- tors																			
1.0																				
<b>BNI002U</b> BNI USB-901-000-A501	USB IO-Link master																			
1.0/1.1																				

Tracking and tracing streams of goods



Model	BIS V RFID processor unit			HF read/write head BIS VM, M30x1.5, non-flush, antenna round		HF read/write head BIS VM 80x80x40 mm, non-flush		HF read/write head BIS VM, 25x50x10 mm, non-flush, antenna round		HF read/write head BIS VM, M12x1, non-flush, antenna round		HF read/write head BIS VM, M18x1, non-flush, antenna round	
<b>Ordering code</b> Part number	<b>BIS00T3</b> BIS V-6102-019-C001	<b>BIS00U9</b> BIS V-6110-063-C002	<b>BIS010P</b> BIS V-6111-073-C003	<b>BIS00RF</b> BIS VM-300-001-S4	<b>BIS00T0</b> BIS VM-301-001-S4	<b>BIS00T2</b> BIS VM-351-001-S4	<b>BIS00T9</b> BIS VM-305-001-S4	<b>BIS00T7</b> BIS VM-306-001-S4	<b>BIS00T8</b> BIS VM-307-001-S4				
Profibus	■												
EtherCAT		■											
CC-Link			■										
Degree of protection as per IEC 60529	IP 65	IP 65	IP 65	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67				



Model	Vision Sensors BVS identification								Vision Sensors BVS Standard							
<b>Ordering code</b> Part number	<b>BVS001R</b> BVS ID-3-005-E	<b>BVS0001</b> BVS ID-3-001-E	<b>BVS000T</b> BVS ID-3-003-E	<b>BVS000Y</b> BVS ID-3-007-E	<b>BVS001C</b> BVS ID-3-105-E	<b>BVS0019</b> BVS ID-3-101-E	<b>BVS001A</b> BVS ID-3-103-E	<b>BVS001E</b> BVS ID-3-107-E	<b>BVS000E</b> BVS OI-3-005-E	<b>BVS0003</b> BVS OI-3-001-E	<b>BVS0005</b> BVS OI-3-003-E	<b>BVS0013</b> BVS OI-3-105-E	<b>BVS0014</b> BVS OI-3-101-E	<b>BVS0012</b> BVS OI-3-103-E		
Light type: red, LED	■	■	■	■					■	■	■					
Light type: infrared, LED					■	■	■	■				■	■	■		
Lens	6 mm	8 mm	12 mm	16 mm	6 mm	8 mm	12 mm	16 mm	6 mm	8 mm	12 mm	6 mm	8 mm	12 mm		
Working distance: Reading the barcode and data matrix code	■	■	■	■	■	■	■	■								
Verifying manufacture and expiration dates (OCV)	■	■	■	■	■	■	■	■								
Checking brightness and contrast									■	■	■	■	■	■		
Checking part position, diameter and width									■	■	■	■	■	■		
Detect patterns									■	■	■	■	■	■		
Detect 360 °C <b>patterns</b>																
Detect 360 °C <b>contour</b>																
Ethernet interface	■	■	■	■	■	■	■	■								
RS232 port	■	■	■	■	■	■	■	■								
Degree of protection as per IEC 60529	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54		





Access control for configuration



	<b>BIS00T6</b> BIS VM-352-001-S4	HF read/write head BIS VM, 25x50x10 mm, non-flush, rod antenna	IP 67
	<b>BIS00W2</b> BIS M-410-068-001-00-S115	HF High Frequency BIS M-410 Reading/writing compact processors 56x40x24 mm	IP 67
	<b>BIS00W1</b> BIS M-410-067-001-04-S92		IP 67
	<b>BIS00W4</b> BIS M-410-068-001-09-S72		IP 67
	<b>BIS00W3</b> BIS M-410-068-001-02-S115		IP 67
	<b>BIS00W6</b> BIS M-411-068-001-00-S115	HF High Frequency BIS M-411 Reading/writing compact processors 105x73x24 mm	IP 67
	<b>BIS00W5</b> BIS M-411-067-001-04-S92		IP 67
	<b>BIS00W8</b> BIS M-411-068-001-09-S72		IP 67
	<b>BIS00W7</b> BIS M-411-068-001-02-S115		IP 67
	<b>BIS00Z5</b> BIS U-620-068-101-00-S115	UHF Ultra High Frequency BIS U-62_ processors 164x112x45 mm	IP 65
	<b>BIS00Z9</b> BIS U-620-067-101-04-S92		IP 65
	<b>BIS00Z1</b> BIS U-626-069-101-06-ST31		IP 65
	<b>BIS00Z4</b> BIS U-620-068-101-00-ST29		IP 65
	<b>BIS00Z8</b> BIS U-620-067-101-04-ST30		IP 65
	<b>BIS00Z0</b> BIS U-626-069-101-06-ST32		IP 65
	BIS L-404-035-001-00-S115	Read/write device, 50x40x20 mm Access control	IP 54
	BIS L-204-03/L-BK	Black keyfob	
	BIS L-204-03/L-BL	Blue keyfob	
	BIS L-204-03/L-GN	Green keyfob	
	BIS L-204-03/L-RD	Red keyfob	



	<b>BVS000L</b> BVS OI-3-055-E	Vision Sensors BVS Advanced	IP 54
	<b>BVS000J</b> BVS OI-3-051-E		IP 54
	<b>BVS000K</b> BVS OI-3-053-E		IP 54
	<b>BVS000W</b> BVS OI-3-057-E		IP 54
	<b>BVS0016</b> BVS OI-3-155-E		IP 54
	<b>BVS0015</b> BVS OI-3-151-E		IP 54
	<b>BVS0017</b> BVS OI-3-153-E		IP 54
	<b>BVS0018</b> BVS OI-3-157-E		IP 54
	<b>BVS001M</b> BVS UR-3-001-E	Vision Sensors BVS Universal	IP 54
	<b>BVS001N</b> BVS UR-3-003-E		IP 54
	<b>BVS001L</b> BVS UR-3-005-E		IP 54
	<b>BVS001P</b> BVS UR-3-007-E		IP 54
	<b>BVS001H</b> BVS UR-3-101-E		IP 54
	<b>BVS001J</b> BVS UR-3-103-E		IP 54
	<b>BVS001F</b> BVS UR-3-105-E		IP 54
	<b>BVS001K</b> BVS UR-3-107-E		IP 54

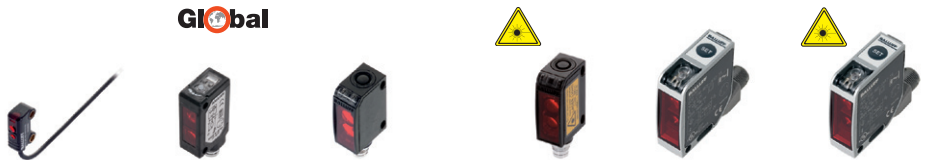
# Object Detection

## Photoelectric sensor technology for miniaturized modules and standard applications



Type	BOS 08M	BOS 08M	BOS 12M	BOS 12M laser	BOS 18M	BOS 18M red light
Supply voltage	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Output function	PNP NO/NC	PNP NO	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC
Connection	Connectors/ cables	Cable	Connectors/ cables	Connectors/ cables	Connectors	Connectors
Ambient temperature	-10...+60 °C	-10...+60 °C	-5...+55 °C, -15...+55 °C, -20...+60 °C	-10...+50 °C	-5...+55 °C	-5...+55 °C
Degree of protection as per IEC 60529	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Light type	Red light	Infrared light	Infrared light, red light	Laser	Infrared light, red light	Infrared light, red light
Special features						
Housing material	Metal	Stainless steel	Metal	Metal	Metal	Metal

Many other products are included in our complete object detection product line.



Type	BOS 2K	BOS 5K	BOS 6K	BOS 6K laser	BOS 21M	BOS 21M laser
Supply voltage	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Output function	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC
Connection	Connectors/ cables	Connectors/ cables	Connectors/ cables	Connectors/ cables	Connectors	Connectors
Ambient temperature	-20...+50 °C	-25...+55 °C	-20...+60 °C	-20...+60 °C	-10...+50 °C, -25...+55 °C	-10...+50 °C
Degree of protection as per IEC 60529	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Light type	Red light	Infrared light, red light	Red light	Laser, red light	Infrared light, red light	Laser
Special features			Teach-in	Teach-in		
Housing material	Plastic	Plastic	Plastic	Plastic	Metal	Metal

Many other products are included in our complete object detection product line.





BOS 18M red light angle head	BOS 18M laser	BOS 18M laser with angle head	BOS 18E M18 BOS 18E D18 BOS 18E	BOS 18KF	BOS 18KW with angle head	BOS Q08M	BOS Q08M laser
10...30 V DC, 10...36 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP NO/NC
Connectors	Connectors/ cables	Connectors/ cables	Connectors	Connectors/ cables	Connectors/ cables	Connectors/ cables	Connectors/ cables
-15...+55 °C, -25...+55 °C	-5...+55 °C, -10...+55 °C, -15...+55 °C	-5...+55 °C	-5...+75 °C, -20...+75 °C	-10...+50 °C -25...+55 °C	-10...+50 °C -25...+55 °C	-10...+60 °C	0...+50 °C
IP 67 Red light	IP 65/IP 67 Laser	IP 67 Laser	<b>IP 69K/IP 68</b> Infrared light, red light	IP 67 Infrared light, red light, laser	IP 67 Infrared light, red light, laser	IP 67 Red light	IP 67 Laser
Metal	Metal	Metal	Stainless steel	Plastic	Plastic	Metal	Metal



BOS 23K	BOS 23K laser	BOS 50K	BKT 67M	Fork sensor BGL-A	Fork sensor BGL-C	Angle sensor BWL	Color sensor BFS 33
10...30 V DC	10...30 V DC, 12...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	24 V DC ±10%
PNP NO/NC	PNP NO/NC	PNP NO/NC	PNP/NPN/ Analog NO/NC	PNP/NPN NO/NC	PNP/NPN Analog NO/NC	PNP/NPN NO/NC	PNP NO/NC
Connectors	Connectors	Connectors	Connectors	Connectors	Connectors	Connectors	Cable
-20...+60 °C	-20...+60 °C	-5...+55 °C, -10...+60 °C	-10...+55 °C	-10...+60 °C	-5...+55 °C	-10...+60 °C	+10...+55 °C
IP 67/IP 69K Red light	IP 67/IP 69K Laser	IP 67 Red light	IP 67 Red, green and blue light	IP 67 Red light, PinPoint, infrared, laser	IP 67 Red light	IP 67 Red light, Pin- Point, infrared, laser	IP 54 White light
			Interchange- able optics	Fluid detection Transparent detection	IO-Link		Fiber optics
Plastic	Plastic	Plastic	Metal	Metal	Metal	Metal	Metal

# Object Detection

## Ultrasonic sensors for special applications



Type	BUS M18M, switching output, straight						BUS M18M, switching output, straight						BUS M18M, switching output, right-angle						BUS M18M, switching output, right-angle					
Ordering code	BUS0020						BUS0029						BUS002A						BUS002C					
Part number	BUS M18M1-GPX1-02/015-S92G						BUS M18M1-GPX1-03/025-S92G						BUS M18M1-GPX1-03/025-S92G						BUS M18M1-XA-03/025-S92G					
Scanning range	20...150 mm						30...250 mm						65...350 mm											
push/pull IO-Link NO/NC	■						■						■											
0...10 V Rising/falling							■						■											
4...20 mA Rising/falling							■						■						■					
Degree of protection as per IEC 60529	IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67	



Type	BUS M30M, Switching output				BUS M30M, Analog output				BUS M30M, switching and analog output				BUS M30M, Switching output				BUS M30M, Analog output				BUS M30M, switching and analog output			
Ordering code	BUS0022				BUS002R				BUS002N				BUS002L				BUS005F				BUS005H			
Part number	BUS M30M1-PPX-03/025-S92K				BUS M30M1-PWX-03/025-S92K				BUS M30M1-XC-03/025-S92K				BUS M30M1-PPC-03/025-S92K				BUS M30M1-PPX-07/035-S92K				BUS M30M1-PWX-07/035-S92K			
Scanning range	30...250 mm				65...350 mm				200...1300 mm				350...3400 mm											
PNP, NO/NC contact	■								■				■											
2x PNP, NO/NC contact					■								■											
0...10 V/4...20 mA					■								■											
PNP NO/NC									■								■							
0...10 V/4...20 mA									■								■							
PNP 125 HZ													■											
0...10 V													■											
4...20 mA													■											
Degree of protection as per IEC 60529	IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67		IP 67	





# Object Detection

## Sensor technology: inductive, magnetic and capacitive

IP 68  
as per BWN

IP 69K

**ECOLAB** **FDA**  
H<sub>2</sub>O<sub>2</sub> resistant

### Inductive Sensors

Stainless steel V4A 316



Type	M8x40 mm flush, 2 mm 0...1.6 mm				Ø 12x50 mm flush, 2 mm				M12x50 mm flush, 2 mm				M12x45 mm flush, 4 mm				M12x65 mm flush, 4 mm				Ø 12x54.5 mm non-flush, 4 mm				M12x54.5 mm non-flush, 4 mm				Ø 18x45 mm flush, 5 mm																											
<b>Ordering code</b> Part number	<b>BES014A</b> BES M08EE-PS020B-S49G				<b>BES0145</b> BES M08EE-POC20B-S49G				<b>BES0141</b> BES M08EE-NSC20B-S49G				<b>BES013W</b> BES M08EE-NOC20B-S49G				<b>BES0430</b> BES G12EE1-PSY20B-S04G-L02				<b>BES0444</b> BES M12EE1-PSY20B-S04G-L01				<b>BES0433</b> BES M12EE-PSC40B-S04G-L01				<b>BES0432</b> BES M12EE-POC40B-S04G-L01				<b>BES0435</b> BES M12EH-PSC40B-S04G-L01				<b>BES0434</b> BES M12EH-POC40B-S04G-L01				<b>BES0436</b> BES M12EH-NSC40B-S04G-L01				<b>BES0431</b> BES G12EE1-PSY40F-S04G-L02				<b>BES0443</b> BES M12EE1-PSY40F-S04G-L01				<b>BES0439</b> BES G18EE1-PSY50B-S04G-L02			
PNP, NO	■																																																							
PNP, NC					■																																																			
NPN, NO									■																																															
NPN, NC													■																																											
Degree of protection: IP 69K and IP 68 according to BWN Pr. 27									■				■				■				■				■				■				■																							
Degree of protection as per IEC 60529	IP 68				IP 68				IP 68				IP 68																																											

### Magnetic Sensors

Festo T-slot

Festo T-slot

SMC Festo C-slot

SMC Festo C-slot



Type	BMF 235 5.5x5x23.5 mm The new scale for every T-slot with M8 connector				BMF 235 5.5x5x23.5 mm The new scale for every T-slot with direct PUR cable				BMF 243 3.8x24x3 mm The new scale for each C-slot (rounded groove) with M8 connector				BMF 243 3.8x24x3 mm The new scale for each C-slot (rounded groove) with direct PUR cable																																																			
<b>Ordering code</b> Part number	<b>BMF00C4</b> BMF 235K-PS-C-2A-SA2-S49-00,3				<b>BMF00C6</b> BMF 235K-PO-C-2A-SA2-S49-00,3				<b>BMF00C2</b> BMF 235K-NS-C-2A-SA2-S49-00,3				<b>BMF00C3</b> BMF 235K-NO-C-2A-SA2-S49-00,3				<b>BMF00AR</b> BMF 235K-PS-C-2A-PU-02				<b>BMF00AT</b> BMF 235K-PO-C-2A-PU-02				<b>BMF00AU</b> BMF 235K-NS-C-2A-PU-02				<b>BMF00AW</b> BMF 235K-NO-C-2A-PU-02				<b>BMF00EL</b> BMF 243K-PS-C-2A-SA2-S49-00,3				<b>BMF00EM</b> BMF 243K-PO-C-2A-SA2-S49-00,3				<b>BMF00EN</b> BMF 243K-NS-C-2A-SA2-S49-00,3				<b>BMF00EP</b> BMF 243K-NO-C-2A-SA2-S49-00,3				<b>BMF00EF</b> BMF 243K-PS-C-2A-PU-02				<b>BMF00EH</b> BMF 243K-PO-C-2A-PU-02				<b>BMF00EJ</b> BMF 243K-NS-C-2A-PU-02				<b>BMF00EK</b> BMF 243K-NO-C-2A-PU-02			
PNP, NO	■																■				■				■				■				■				■				■																							
PNP, NC					■																																																											
NPN, NO									■																																																							
NPN, NC													■																																																			
Degree of protection as per IEC 60529	IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67				IP 67															

**Stainless steel V4A 316**



**+160 °C**  
High temperature range!

**IP 68**  
as per BWN

**IP 69K**

**IP 68 degree of protection in accordance with BWN Pr. 27**

Balluff Factory Standard (BWN): Testing products for use in the foods industry.

**IP 68 degree of protection in accordance with BWN Pr. 20**

Balluff Factory Standard (BWN): temperature storage 48 h at 60 °C, 8 temperature cycles according to EN 60068-2-14/IEC 60068-2-14 between the benchmark temperatures according to the data sheet, 1 h water storage, insulation test, 24 h water storage, insulation test, 8 temperature cycles to EN 60068-2-14 IEC 60068-2-14 between the benchmark temperatures according to the data sheet, 7 days water storage, insulation test.

**IP 69K degree of protection**

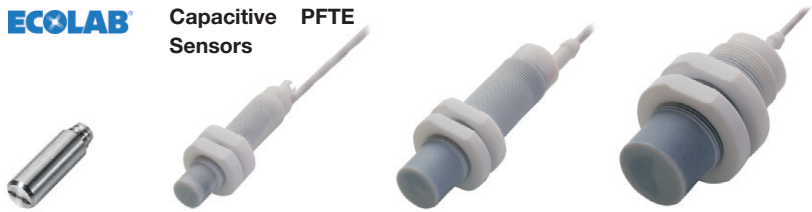
DIN 40050 part 9: Protection against entry of water under high pressure- or steam jet cleaning.



	<b>BES0441</b> BES M18EE1-PSY50B-S04G-L01	M18x45 mm flush, 5 mm	■			
	<b>BES0437</b> BES M18EH-PC80B-S04G-L01	M18x65 mm flush, 8 mm	■			
	<b>BES0438</b> BES M18EH-PC80B-S04G-L01			■		
	<b>BES043A</b> BES G18EE1-PSY80F-S04G-L02	Ø 18x54.5 mm non-flush, 8 mm	■			
	<b>BES0442</b> BES M18EE1-PSY80F-S04G-L01	M18x54.5 mm non-flush, 8 mm	■			
	<b>BES043T</b> BES 515-326-SA49-D-TF-02	M18x1 flush, 5 mm	■			
	<b>BES043U</b> BES 515-360-SA13-D-TF-02	M18x1, non-flush, 8 mm	■			IP 69K IP 69K
	<b>BES043W</b> BES 515-327-SA22-D-TF-02	M30x1.5 flush, 10 mm	■			IP 69K
	<b>BES043Y</b> BES 515-362-SA4-D-TF-02	M30x1.5, non-flush, 15 mm	■			IP 69K
	<b>BES02FO</b> BES 515-327-E5-T-S4	M30x1.5 flush, 10 mm, 0...8.1 mm	■			

**ECOLAB**

**Capacitive PFTE Sensors**



	<b>BMF001Z</b> BMF 10E-PS-D-2-SA1-S49	BMF 10E The stainless steel sensor specifically for the food industry	■			
	<b>BCS006Z</b> BCS M12TTG1-PSM80G-ET02	M12x1 non-flush 1...8 mm	■			
	<b>BCS0070</b> BCS M12TTG1-POM80G-ET02			■		
	<b>BCS0071</b> BCS M12TTG1-NSM80G-ET02				■	
	<b>BCS0072</b> BCS M12TTG1-NOM80G-ET02					■
	<b>BCS0073</b> BCS M18TTI2-PSC15G-AT02	M18x1 non-flush 2...15 mm	■			
	<b>BCS0074</b> BCS M18TTI2-POC15G-AT02				■	
	<b>BCS0075</b> BCS M18TTI2-NSC15G-AT02					■
	<b>BCS0076</b> BCS M18TTI2-NOC15G-AT02					■
	<b>BCS0077</b> BCS M30TH2-PSC30G-AT02	M30x1.5 non-flush 2...30 mm	■			
	<b>BCS0078</b> BCS M30TH2-POC30G-AT02				■	
	<b>BCS0079</b> BCS M30TH2-NSC30G-AT02					■
	<b>BCS007A</b> BCS M30TH2-NOC30G-AT02					■



Many other products are included in our global catalog or online at: [www.balluff.com](http://www.balluff.com)

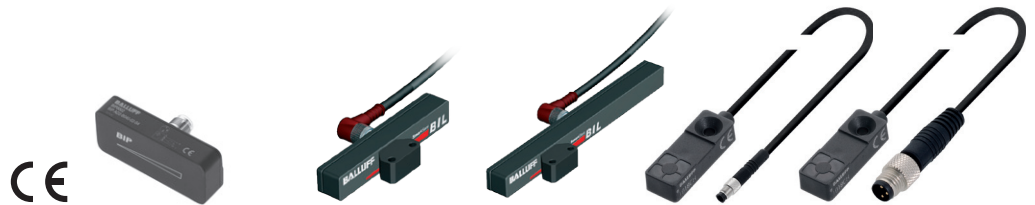
# Linear Position Sensing and Measurement

## The appropriate measuring principle for the optimal solution

### Optical, magneto-inductive and inductive



Type	Working range	Ordering code	Part number	Light type	Output
	BOD 6K 20...80 mm	BOD 6K-RA01-S75-C	BOD 6K-RA01-C-02	Red light	RS485 interface
				Laser light	PNP transistor
	BOD 21M 25...45 mm	BOD 21M-LA01-S92	BOD 21M-LB01-S92	Red light	IO-Link
				Laser light	2x PNP transistor
	BOD 21M 20...200 mm	BOD 21M-LA02-S92	BOD 21M-LB02-S92	Red light	Alarm output
				Laser light	
	BOD 21M 20...500 mm	BOD 21M-LA04-S92	BOD 21M-LB04-S92	Red light	
				Laser light	
	BOD 26K 45...85 mm	BOD 26K-LA01-S4-C	BOD 26K-LA01-C-06	Red light	
				Laser light	
	BOD 26K 45...85 mm	BOD 26K-LA02-S4-C	BOD 26K-LA02-C-06	Red light	
				Laser light	
	BOD 26K 30...100 mm	BOD 26K-LB04-ST15-C	BOD 26K-LBR04-S115-C	Red light	
				Laser light	
	BOD 26K 80...300 mm	BOD 26K-LB05-ST15-C	BOD 26K-LBR05-S115-C	Red light	
				Laser light	



Type	Ordering code	Part number	Output signal	Degree of protection as per IEC 60529
Inductive displacement sensors BIP IO-Link	BIP AD2-B040-02-S4 BIP LD2-T040-02-S4 BIP OD2-B040-02-S4		0...10 V	IP 67
			IO-Link	
			4...20 mA	
Magneto-inductive displacement sensors BIL 60 Voltage 0...10 V out-of-range 11 V or current 4...20 mA, out-of-range 22 mA	BIL EMID0-T060A-01-S75		0...10 V	IP 67
			IO-Link	
			4...20 mA	
Magneto-inductive displacement sensors BIL 160 voltage 0...10 V or current 4...20 mA	BIL ED0-P160A-01-S75		0...10 V	IP 67
			IO-Link	
			4...20 mA	
Inductive distance sensors Block designs, 10x30x6 mm R03, M5, flush	BAW R03KC-UAE-40B-BP00,3-GS26		0...10 V	IP 67
			IO-Link	
			4...20 mA	
Inductive distance sensors Block designs, 10x30x6 mm R03, M8, flush	BAW R03KC-UAE-40B-BP00,3-GS49		0...10 V	IP 67
			IO-Link	
			4...20 mA	





# Fluid Sensors

## Level detection with **SMARTLEVEL** technology



**SMARTLEVEL** 15



**SMARTLEVEL** 15



**SMARTLEVEL** 500+

Type	M18x1 non-flush Media-dependent					M30x1.5 non-flush Media-dependent					M30x1.5 non-flush Media-dependent									
<b>Ordering code</b> Part number	<b>BCS008A</b> BCS M18TTI2-PSCFAG-AT02	<b>BCS008C</b> BCS M18TTI2-POCFAG-AT02	<b>BCS008E</b> BCS M18TTI2-NSCFAG-AT02	<b>BCS008F</b> BCS M18TTI2-NOCFAG-AT02							<b>BCS0086</b> BCS M30TTH2-PSCFAG-AT02	<b>BCS0087</b> BCS M30TTH2-POCFAG-AT02	<b>BCS0088</b> BCS M30TTH2-NSCFAG-AT02	<b>BCS0089</b> BCS M30TTH2-NOCFAG-AT02		<b>BCS00TZ</b> BCS M30TTH2-GPCFVG-AT02				
PNP/NPN and NO/NC user codable																				
PNP, NO	■										■					■				
PNP, NC		■										■								
NPN, NO			■										■							
NPN, NC				■										■						
Degree of protection as per IEC 60529	IP 64	IP 64	IP 64	IP 64							IP 64	IP 64	IP 64	IP 64		IP 67				



**SMARTLEVEL** 15



Type	40x40x10 mm Uniflat, flush Media-dependent				
<b>Ordering code</b> Part number	<b>BCS00U8</b> BCS Q40BBAA-PSCFAC-EP00,3-GS49	<b>BCS00U7</b> BCS Q40BBAA-POCFAC-EP00,3-GS49			
PNP, NO	■				
PNP, NC		■			
Degree of protection as per IEC 60529	IP 67	IP 67			

The new capacitive SmartLevel sensors in the Uniflat design detect conductive media through non-metallic container walls with a thickness up to 10 mm extremely reliably.

Their installation is quick and easy. This is because they can be screwed on or attached to bypass tubes with cable ties. Their connection is made using a 2 m cable or a short pigtail line and an M8 plug.

The codable output function provides PNP or NPN and normally open or normally closed functionality.

#### SmartLevel

- Suppress foam and deposits
- Adjustment-free installation
- Are easy to install on tubes with cable ties
- Regular cleaning can be omitted



**SMARTLEVEL 500+**



**SMARTLEVEL 15**



**SMARTLEVEL 50**



**Pressure rated to 10 bar**

	M30x1.5 non-flush Media-dependent	Ø 50x10 mm flush Media-dependent	Ø 50x10 mm flush Media-dependent	R 3/8" non-flush Level adjustable
<b>BCS00HJ</b> BXS M30T4M3-GPCFVG-S04G				
<b>BCS0080</b> BCS D50TT05-PSCFAC-ET02				
<b>BCS0081</b> BCS D50TT05-POCFAC-ET02				
<b>BCS0082</b> BCS D50TT05-NSCFAC-ET02				
<b>BCS0083</b> BCS D50TT05-NOCFAC-ET02				
<b>BCS00UW</b> BCS D50TT06-PSCFSC-ET02				
<b>BCS00UY</b> BCS D50TT06-POCFSC-ET02				
<b>BCS00WO</b> BCS D50TT06-NSCFSC-ET02				
<b>BCS00UZ</b> BCS D50TT06-NOCFSC-ET02				
<b>BCS006H</b> BCS S01T401-PSCFNG-KM16-T02				
<b>BCS006J</b> BCS S01T401-POCFNG-KM16-T02				
<b>BCS006K</b> BCS S01T401-NSCFNG-KM16-T02				
<b>BCS006L</b> BCS S01T401-NOCFNG-KM16-T02				
IP 64, connection side IP 67	IP 67	IP 67	IP 67	IP 67



Other 3/8" types and NPTF 3/8" are available.

**Selection list for SMARTLEVEL according to liquids**

- SMART 15**  
Conductivity value approx. 0.7...15 mS
- SMART 50**  
Conductivity value approx. 15...50 mS
- SMART 500+**  
Conductivity value Approx. 50...500 mS and greater

Industrial wastewater (depending on conductivity of the medium)	
Disinfectants (media containing chlorine)	
Table salt solution	
Rinsing agents	
Milk/buttermilk/yogurt	
Fruit juice	
Coolant/lubricants	Ketchup/mustard
Formic acid (30 %)	
	Sulfuric acid (10 %)
	Calcium chloride (30 %)
Blood	Hydrochloric acid (40 %)
Beer	Seawater
	Nitric acid (12 %)



# Fluid Sensors

## For media in which standard pressure sensors reach their limit



2 programmable switching points (NO or NC)



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

Type	PNP -1...2 bar -14.5...29 psi PNP -1...10 bar -14.5...145 PNP 0...2 bar 0...29 psi PNP 0...5 bar 0...73 psi PNP 0...10 bar 0...145 psi PNP 0...20 bar 0...290 psi PNP 0...50 bar 0...725 psi PNP 0...100 bar 0...1450 psi PNP 0...250 bar 0...3626 psi PNP 0...400 bar 0...5802 psi PNP 0...600 bar 0...8702 psi PNP -1...2 bar -14.5...29 psi PNP -1...10 bar -14.5...145 PNP 0...2 bar 0...29 psi PNP 0...5 bar 0...73 psi PNP 0...10 bar 0...145 psi PNP 0...20 bar 0...290 psi
<b>Ordering code</b>	<b>BSP005M</b>
Part number	BSP V002-IV003-D00A0B-S4 <b>BSP005N</b> BSP V010-IV003-D00A0B-S4 <b>BSP005P</b> BSP B002-IV003-D00A0B-S4 <b>BSP005R</b> BSP B005-IV003-D00A0B-S4 <b>BSP005T</b> BSP B010-IV003-D00A0B-S4 <b>BSP005U</b> BSP B020-IV003-D00A0B-S4 <b>BSP005W</b> BSP B050-IV003-D00A0B-S4 <b>BSP005Y</b> BSP B100-IV003-D00A0B-S4 <b>BSP005Z</b> BSP B250-IV003-D00A0B-S4 <b>BSP0060</b> BSP B400-IV003-D00A0B-S4 <b>BSP0061</b> BSP B600-IV003-D00A0B-S4 <b>BSP006F</b> BSP V002-IV003-A00A0B-S4 <b>BSP006H</b> BSP V005-IV003-A00A0B-S4 <b>BSP006J</b> BSP B002-IV003-A00A0B-S4 <b>BSP006K</b> BSP B005-IV003-A00A0B-S4 <b>BSP006L</b> BSP B010-IV003-A00A0B-S4 <b>BSP006M</b> BSP B020-IV003-A00A0B-S4
Ambient/media temperature	-40...+85 °C/-40...+125 °C
Display/function indicators	7 segment display/LED
Degree of protection as per IEC 60529	IP 67 (when connected)
Process connection	G1/2" EN 3852



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

Type	PNP -1...2 bar -14.5...29 psi PNP -1...10 bar -14.5...145 PNP 0...2 bar 0...29 psi PNP 0...5 bar 0...73 psi PNP 0...10 bar 0...145 psi PNP 0...20 bar 0...290 psi PNP 0...50 bar 0...725 psi PNP 0...100 bar 0...1450 psi PNP 0...250 bar 0...3626 psi PNP 0...400 bar 0...5802 psi PNP 0...600 bar 0...8702 psi
<b>Ordering code</b>	<b>BSP0062</b>
Part number	BSP V002-IV003-A02A0B-S4 <b>BSP0063</b> BSP V005-IV003-A02A0B-S4 <b>BSP0064</b> BSP B002-IV003-A02A0B-S4 <b>BSP0065</b> BSP B005-IV003-A02A0B-S4 <b>BSP0066</b> BSP B010-IV003-A02A0B-S4 <b>BSP0067</b> BSP B020-IV003-A02A0B-S4 <b>BSP0068</b> BSP B050-IV003-A02A0B-S4 <b>BSP0069</b> BSP B100-IV003-A02A0B-S4 <b>BSP006A</b> BSP B250-IV003-A02A0B-S4 <b>BSP006C</b> BSP B400-IV003-A02A0B-S4 <b>BSP006E</b> BSP B600-IV003-A02A0B-S4
Ambient/media temperature	-40...+85 °C/-40...+125 °C
Display/function indicators	7 segment display/LED
Degree of protection as per IEC 60529	IP 67 (when connected)
Process connection	G1/2" EN 3852

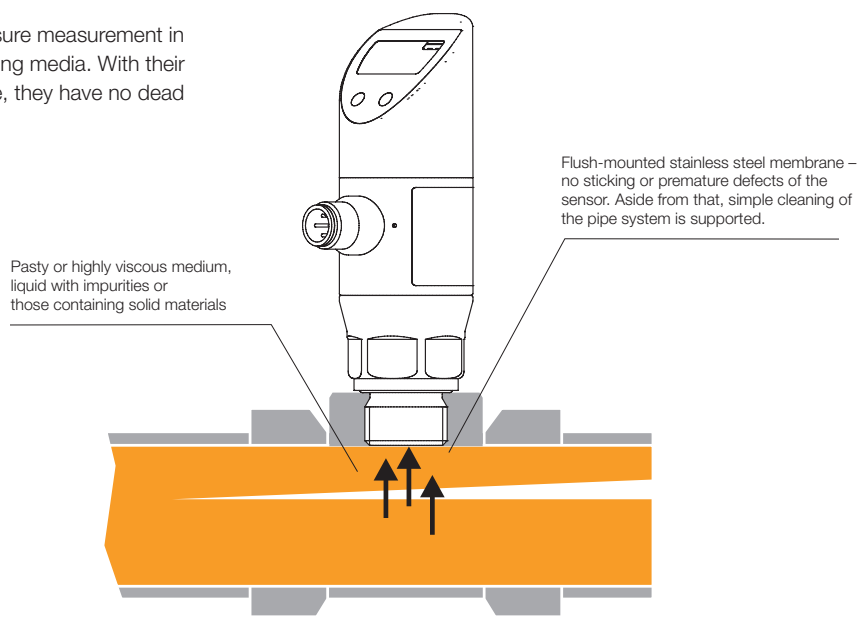
<b>BSP006N</b>	0...50 bar	PNP
BSP B050-IV003-A00A0B-S4	0...725 psi	
<b>BSP006P</b>	0...100 bar	PNP
BSP B100-IV003-A00A0B-S4	0...1450 psi	
<b>BSP006R</b>	0...250 bar	PNP
BSP B250-IV003-A00A0B-S4	0...3626 psi	
<b>BSP006T</b>	0...400 bar	PNP
BSP B400-IV003-A00A0B-S4	0...5802 psi	
<b>BSP006U</b>	0...600 bar	PNP
BSP B600-IV003-A00A0B-S4	0...8702 psi	

Other process connections  
(e.g. TriClamp, Varivent, etc.)  
available on request.



**Flush-mounted BSP pressure sensors**

Pressure sensors BSP are ideally suited for pressure measurement in viscous, paste-like, crystallizing or solids-containing media. With their flush-mounted, welded stainless steel membrane, they have no dead spaces and can be cleaned particularly well.



# Accessories

## Connectors and power supplies

**ECOLAB**

**IP 68**  
as per BWN

**IP 69K**



Type	M12, can be fabricated, body: PBT transparent, contact: brass										M8, 3-pin straight			M8, 3-pin right-angle			M8, 3-pin with LED			M8, 4-pin straight			M8, 4-pin right-angle			M12, 3-pin with LED right-angle																													
<b>Ordering code</b> Part number	<b>BCC0CAA</b> BCC S445-0000-1A-000-51X475-000-C024										<b>BCC06WA</b> BCC S313-0000-10-001-PX8334-100-C002			<b>BCC06WE</b> BCC S323-0000-10-001-PX8334-100-C002			<b>BCC08CZ</b> BCC S323-0000-10-004-PX0334-020			<b>BCC0A2F</b> BCC S323-0000-10-004-PX0334-030			<b>BCC08EO</b> BCC S323-0000-10-004-PX0334-050			<b>BCC0A2H</b> BCC S323-0000-10-004-PX0334-100			<b>BCC097W</b> BCC S323-0000-10-004-PX8334-030-C002			<b>BCC06WC</b> BCC S314-0000-10-003-PX8434-100-C002			<b>BCC06WF</b> BCC S324-0000-10-003-PX8434-100-C002			<b>BCC0A2L</b> BCC S425-0000-1A-004-VX8334-050			<b>BCC0A2M</b> BCC S425-0000-1A-004-VX8334-100			<b>BCC06U9</b> BCC S425-0000-1A-004-VX8334-150			<b>BCC06UA</b> BCC S425-0000-1A-004-VX8334-200			<b>BCC06UC</b> BCC S425-0000-1A-004-VX8334-250			<b>BCC08CM</b> BCC S425-0000-1A-004-PX0334-020		
Length	10 m										10 m			2 m			3 m			5 m			10 m			3 m			10 m			10 m			5 m			10 m			15 m			20 m			25 m			2 m					
Cable material	PA										PUR			PUR			PUR			PUR			PUR			PUR			PVC			PVC			PVC			PVC			PUR														
Degree of protection as per IEC 60529	IP 67										IP 68			IP 68			IP 69K			IP 69K			IP 69K			IP 68			IP 68			IP 69K			IP 69K			IP 69K			IP 69K			IP 69K											

Other lengths on request.

**ECOLAB**

**IP 68**  
as per BWN

**IP 69K**



Type	M12, 4-pin right-angle			M12, 4-pin with LED, right-angle							M12, 5-pin straight			M12, 8-pin shielded, straight			M12, 5-pin shielded, right-angle																																										
<b>Ordering code</b> Part number	<b>BCC097Y</b> BCC S425-0000-1A-003-PX8434-030-C002			<b>BCC06WJ</b> BCC S425-0000-1A-003-PX8434-100-C002							<b>BCC097J</b> BCC S425-0000-1A-003-PX8434-250-C002			<b>BCC08CT</b> BCC S425-0000-1A-008-PX0434-020			<b>BCC0A2J</b> BCC S425-0000-1A-008-PX0434-030			<b>BCC08CU</b> BCC S425-0000-1A-008-PX0434-050			<b>BCC0A2K</b> BCC S425-0000-1A-008-PX0434-100			<b>BCC0977</b> BCC S425-0000-1A-008-PX8434-100-C002			<b>BCC06MT</b> BCC S415-0000-1A-017-PX8534-100			<b>BCC06WK</b> BCC S415-0000-1A-017-PX8534-100-C002			<b>BCC097E</b> BCC S415-0000-1A-017-PX8534-250-C002			<b>BCC09JJ</b> BCC S418-0000-1A-069-PS8825-100-C002			<b>BCC09JK</b> BCC S418-0000-1A-069-PS8825-200-C002			<b>BCC097A</b> BCC S425-0000-1A-016-PS8525-100-C002				<b>BCC09JH</b> BCC S425-0000-1A-017-PS8525-100-C002			<b>BCC06MR</b> BCC S425-0000-1A-017-PX8534-100			<b>BCC06WK</b> BCC S415-0000-1A-017-PX8534-100-C002			<b>BCC06WL</b> BCC S425-0000-1A-017-PX8534-100-C002		
Length	3 m			10 m							25 m			2 m			3 m			5 m			10 m			10 m			10 m			10 m			10 m			10 m			10 m			10 m			10 m												
Cable material	PUR			PUR							PUR			PUR			PUR			PUR			PUR			PUR			PUR			PUR			PUR			PUR			PUR			PUR															
Degree of protection as per IEC 60529	IP 68			IP 68							IP 68			IP 68			IP 69K			IP 68			IP 68			IP 68			IP 68			IP 68			IP 68			IP 68			IP 68			IP 68			IP 68												

Other lengths on request.





											M12, 3-pin with LED right-angle
	<b>BCC08CN</b>	BCC S425-0000-1A-004-PX0334-030		3 m	PUR	IP 69K					
	<b>BCC08CP</b>	BCC S425-0000-1A-004-PX0334-050		5 m	PUR	IP 69K					
	<b>BCC08CR</b>	BCC S425-0000-1A-004-PX0334-100		10 m	PUR	IP 69K					
	<b>BCC06UE</b>	BCC S425-0000-1A-004-PX0334-150		15 m	PUR	IP 69K					
	<b>BCC06UF</b>	BCC S425-0000-1A-004-PX0334-200		20 m	PUR	IP 69K					
	<b>BCC06UH</b>	BCC S425-0000-1A-004-PX0334-250		25 m	PUR	IP 69K					
	<b>BCC06UJ</b>	BCC S425-0000-1A-004-PX0334-400		40 m	PUR	IP 69K					
	<b>BCC097Z</b>	BCC S425-0000-1A-004-PX8334-030-C002		3 m	PUR	IP 68					
	<b>BCC06M7</b>	BCC S415-0000-1A-003-VX8434-100		10 m	PVC	IP 69K			M12, 4-pin straight		
	<b>BCC06M8</b>	BCC S415-0000-1A-003-VX8434-150		15 m	PVC	IP 69K					
	<b>BCC06M9</b>	BCC S415-0000-1A-003-VX8434-200		20 m	PVC	IP 69K					
	<b>BCC06MA</b>	BCC S415-0000-1A-003-VX8434-250		25 m	PVC	IP 69K					
	<b>BCC06MC</b>	BCC S415-0000-1A-003-VX8434-300		30 m	PVC	IP 69K					
	<b>BCC06ME</b>	BCC S415-0000-1A-003-VX8434-350		35 m	PVC	IP 69K					
	<b>BCC06WH</b>	BCC S415-0000-1A-003-PX8434-100-C002		10 m	PUR	IP 68					
	<b>BCC097H</b>	BCC S415-0000-1A-003-PX8434-250-C002		25 m	PUR	IP 68					
	<b>BCC06MF</b>	BCC S425-0000-1A-003-VX8434-100		10 m	PVC	IP 69K			M12, 4-pin right-angle		
	<b>BCC06MH</b>	BCC S425-0000-1A-003-VX8434-150		15 m	PVC	IP 69K					
	<b>BCC06MJ</b>	BCC S425-0000-1A-003-VX8434-200		20 m	PVC	IP 69K					
	<b>BCC06MK</b>	BCC S425-0000-1A-003-VX8434-250		25 m	PVC	IP 69K					
	<b>BCC06ML</b>	BCC S425-0000-1A-003-VX8434-300		30 m	PVC	IP 69K					
	<b>BCC06MM</b>	BCC S425-0000-1A-003-VX8434-350		35 m	PVC	IP 69K					
	<b>BCC06F2</b>	BCC S425-0000-1A-003-PX8434-100		10 m	PUR	IP 69K					



Output voltage 24 V DC  
For additional information and conditions of use, see product data sheet.

	<b>BCC097E</b>	BCC S415-0000-1A-017-PX8534-250-C002		25 m	PUR	IP 68	
	<b>BCC097F</b>	BCC S425-0000-1A-017-PX8534-250-C002		25 m	PUR	IP 68	

Type	Ordering code	Part number	Output current	Output power	Degree of protection as per IEC 60529
Single phase, isolated output (4-pin), SELV	<b>BAE00EN</b>	BAE PS-XA-1W-24-038-601	3.8 A	91.2 W	IP 67
	<b>BAE00FW</b>	BAE PS-XA-1W-24-038-607			
Single phase, Grounded output (4-pin), PELV	<b>BAE00EP</b>	BAE PS-XA-1W-24-038-602	3.8 A	91.2 W	IP 67
	<b>BAE00ER</b>	BAE PS-XA-1W-24-038-603			
Single phase, isolated output (5-pin), SELV	<b>BAE00ET</b>	BAE PS-XA-1W-24-080-604	8 A	192 W	IP 67
	<b>BAE00FL</b>	BAE PS-XA-1W-24-080-605			
Single phase, Grounded output (4-pin), PELV	<b>BAE00FY</b>	BAE PS-XA-1W-24-080-606	8 A	192 W	IP 67

# BALLUFF

sensors worldwide



Systems and service



Industrial Networking and Connectivity



Industrial Identification



Object Detection



Linear Position Sensing and Measurement



Condition Monitoring and Fluid Sensors



Accessories

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