

# BALLUFF

sensors worldwide

## Bottling and Packaging

Solutions for high standards: flexible, expert and reliable



## Bottling and Packaging

Complex tasks efficiently handled

# “Reliably control packaging processes – maximum security and optimal quality“

### Broad expertise

The packaging industry has high demands. Far greater than in other sectors. The needs of many other branches affect each other and can be reconciled. Whether machine builders, producers, dealers or end consumers – all the desires are brought into agreement. With all the complexity, simple solutions are called for. In such various branches as pharmaceuticals, cosmetics, foods or beverages, or in the various segments of primary, secondary or tertiary packaging. For wet and dry. For globally growing, regional but unequal markets. These are immense challenges that you can solve reliably using Balluff expertise.

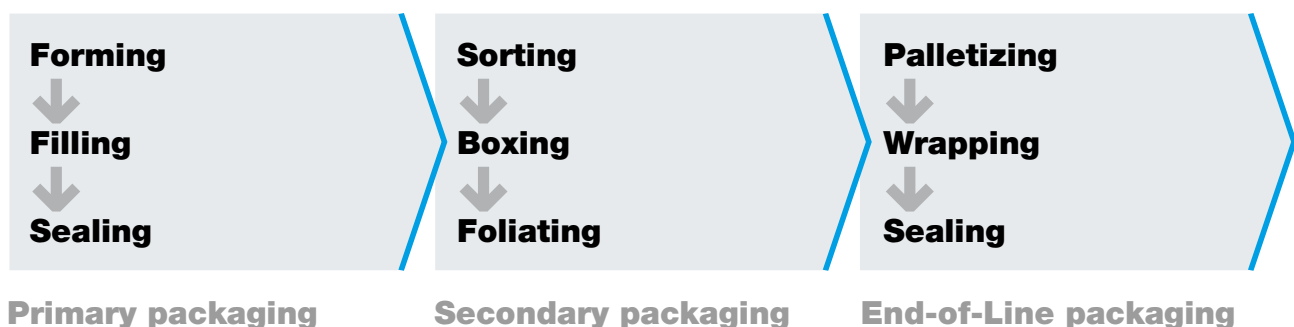
Because Balluff is high-quality technology for

- Greatest equipment uptime
- Fast and reliable size and product changeover
- Great flexibility even with complex processes, and
- High efficiency over the entire packaging process

And Balluff offers you partnership for

- Optimized product lines
- Productive process chains and
- maximum quality
- Global availability

Use Balluff to realize 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 provide the latest technology and mature industrial systems concepts. Even with a comprehensive product line featuring simple operation and minimum setup times, so that you can easily manage the increasing variety of forms and shapes at greater speed. With greater production and reduced costs. For you this means higher productivity and better value creation.

**In every branch of packaging**

Balluff technology can be used throughout the packaging industry. In pharmaceutical and cosmetics manufacturing, foods and beverages. Balluff performance is right for every branch. And 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 has the right solution wherever you look. For decades.



Foods



Beverages



Cosmetics



Pharmaceutical



Medical devices

# Primary Packaging

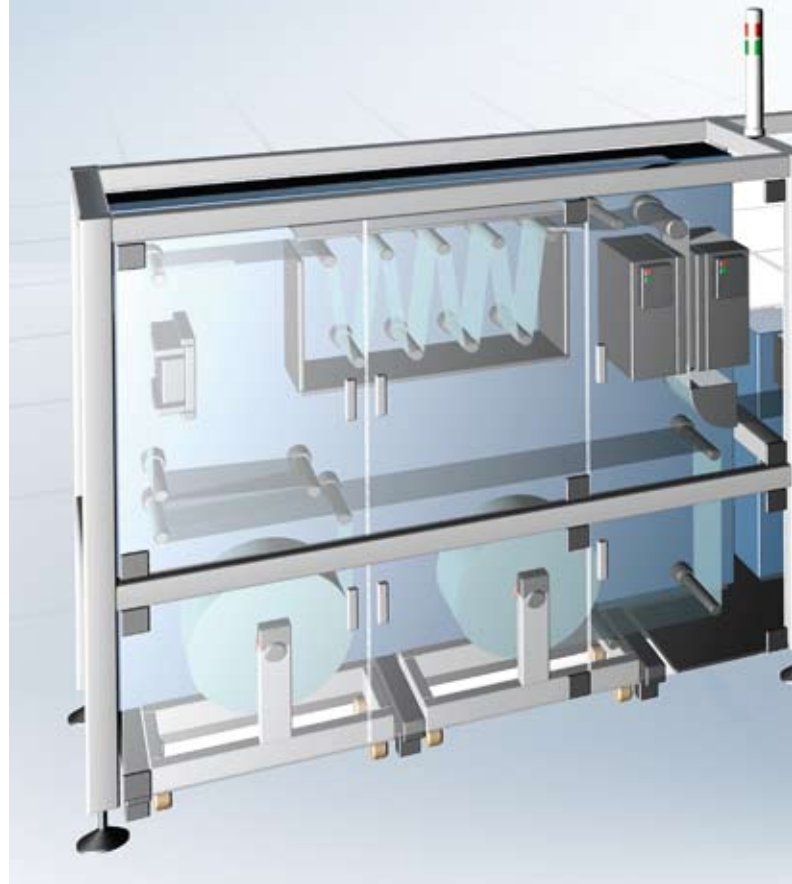
Fast, reliable packaging for the pharmaceuticals industry

## Sensors and systems for maximum flexibility

In no other segment of the packaging industry is the variety so great and the tasks so varied as in primary packaging. Whether liquid or solid, whether vials and bottles or cans and blister packs, whether positioning and feeding, joining and marking, checking and sealing - Balluff systems and solutions stand for the highest degree of flexibility. And with process reliability you can count on. With Balluff the entire packaging process is carried out correctly and reliably down to the smallest detail. Brand-conformal and extremely efficiently.

## Balluff reliability for high production quantities

Balluff meets high requirements for counterfeit protection, correctness of contents and documentability. Wherever the highest level of exactness and reliability are in demand, with Balluff you make the right decision. Because Balluff products increase throughput and guarantee quality. And stand for reliable packaging processes even in sensitive areas.



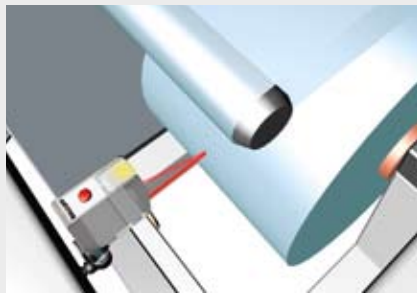
Photoelectric Distance Sensors BOD



Capacitive Sensors BCS



Contrast Sensor BKT

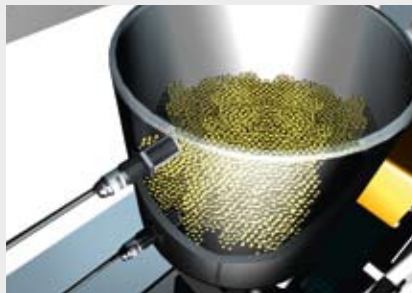


### Reliably monitor the diameter of film rolls

The benefits to you

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

Ensure high security and quality right at the beginning of the process chain – with our BOD 21M photoelectric sensors. They detect the roll diameter continuously and with high precision. Regardless of the color or material of the film. Reliably and precisely. Use them to ensure the desired film drive, so that the storage roll is always correctly filled.



### Simple level measuring

The benefits to you

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

Whether tablets, capsules or powder – BCS capacitive sensors easily and reliably detect levels. Even through container walls. And BCS sensors can be installed in a jiffy. Wear- and adjustment free, they prevent production downtimes. BCS sensors optimize your manufacturing process and increase your success: Capacitive BCS for dependable equipment.



### Cut and punch blister packs precisely

The benefits to you

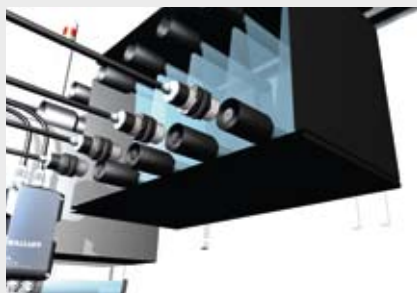
- **Optimized, fast production**
- **On-the-fly adjustment**
- **High quality**

Having become information carriers in and of themselves, blister packs have to meet ever higher demands. BKT 67M contrast sensors ensure fast, precise detection of print marks and thereby high-quality cutting or punching of blister packs. Ensure quality while saving time. Because the BKT 67M can be adjusted on-the-fly.



BIS Industrial RFID Systems

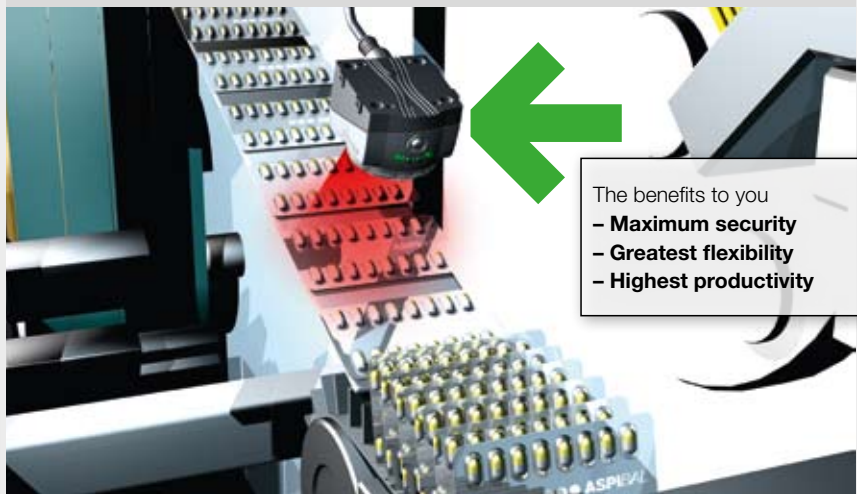
BVS Vision Sensors



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

- The benefits to you
- **Ease of identification**
  - **Short setup times for tool changing**
  - **Increased efficiency**

Use Balluff BIS Industrial RFID systems and ensure optimal productivity with GMP and GAMP compliance. Use BIS to simply identify forming tools in your facility. Automatic tool detection and parameter setting reduces setup times when changing tools, saves cost and ensures high efficiency.



- The benefits to you
- **Maximum security**
  - **Greatest flexibility**
  - **Highest productivity**

**Correctly fill blister packs – one sensor provides 100% quality**

With our BVS Vision Sensor you've chosen higher productivity, greater efficiency and 100% quality. And you can check at a glance whether the blister pack is completely and correctly filled. Use the Balluff BVS Vision Sensor wherever multiple monitoring functions are required at the same time or in rapid succession. The BVS Vision Sensor adapts itself to the task at hand. It reliably detects all the parts even when workpieces are changed. Reconfigurations, even in-process, are always possible. So you always remain flexible. Monitor your production using the BVS with absolute reliability. With one sensor for unbeatable efficiency.

# Primary Packaging

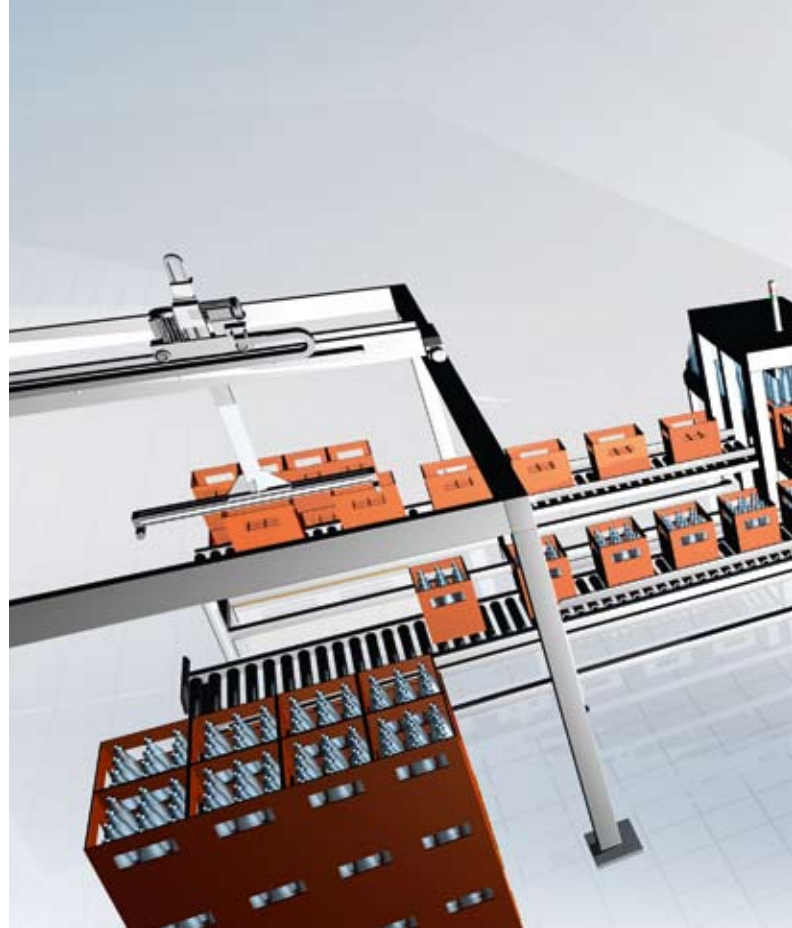
Strict hygiene  
for the beverages industry

## Quality through the strictest hygiene. Dependability through Balluff!

Bottling plants are subject to the strictest hygiene regulations. Milk products, cosmetics, pharmaceuticals and beverages need to be sterile filled and correctly sealed. Bottles and containers need to be correctly labeled. The demands on you are considerable, since highest quality is subject to the laws of the marketplace here as well. Use Balluff to ensure both reliable bottling and flawless inspection. While dependably increasing your number of cycles.

Manage your tasks simply and easily with Balluff. Balluff sensors and systems allow you to continuously fill the bottles with extreme accuracy, seal them absolutely correctly and achieve high product and quality dependability. It all moves smoothly even on conveyor belts. Because Balluff sensors optimize your product flow. Scrap is reduced to a minimum.

And the entire production process runs flawlessly.



BOS Retro-Reflective Sensors



BOS Diffuse Sensor with Background Suppression



BVS Vision Sensors



### Easily check transparent bottles

The benefits to you

- **Fast, reliable inspection**
- **Less scrap**
- **High process dependability**

Dependably checking transparent bottles is usually difficult. But not with the BOS 6K retro-reflective sensor. Specially developed for transparent objects, it dependably detects dirty or even damaged bottles so that they can be removed from the process. Reduce scrap and ensure process dependability.



### Reliably prevent conveyor belt backups

The benefits to you

- **Reliable positioning**
- **Dependable product flow**
- **High efficiency**

Performance shows up on conveyor belts. Here is where efficiency and cycle rates of a system are evidenced. Ensure product flow by correctly detecting bottle positions – using reliable diffuse sensors with red light and background suppression. So you can prevent conveyor belt backups or take countermeasures even during the process.

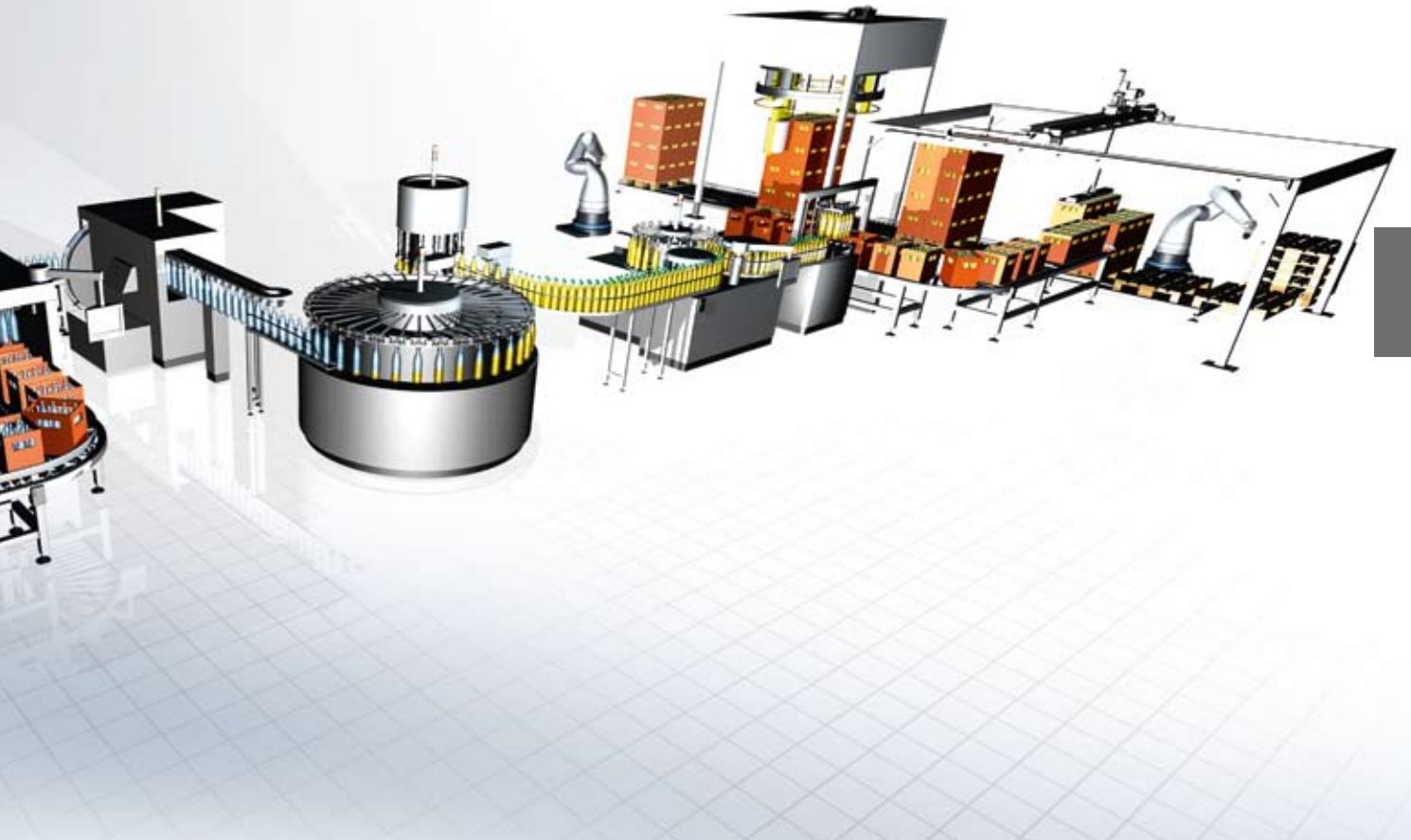


### Dependably check seals

The benefits to you

- **Absolute dependability**
- **Optimal quality**
- **Changeovers even in-process**

To seal bottles perfectly, the cap needs to be correctly seated. Leave the inspection to our Vision Sensor. It checks positions absolutely reliably and reduces scrap. While increasing the productivity of your equipment. Even with frequent size changes. Reconfigurations, even in-process, are always possible.



BFS Color Sensors



BTL Micropulse® Transducers



FDA- and  
EHEDG-  
conformal



**Reliably detect color labels**

- The benefits to you
- **Greatest precision**
  - **Best quality**
  - **Maximum product dependability**

Labels and imprints are an essential component of product design. Additional printing and ink marks are not desirable. The BFS 27K color sensor provides the highest-precision detection capability. Dependably check whether the correct color label is present. Fast teach-in and tracking capability are guaranteed.



- The benefits to you
- **Continuous precision measurement**
  - **High bottling quality**
  - **Increased productivity**

**Continuously measure levels with absolute precision**

Dependably filling liquids means reliably detecting levels. No simple undertaking when foaming occurs. The liquid should not flow too quickly or – from an economic standpoint – too slowly. With the analog BTL transducer you are on the safe side. It continuously detects the level with absolute precision to enable optimal flow rate. The BTL Micropulse® transducer guarantees fewer level errors, better fill quality and increases the productivity of your system. Even under the strictest hygienic requirements.

## Secondary Packaging

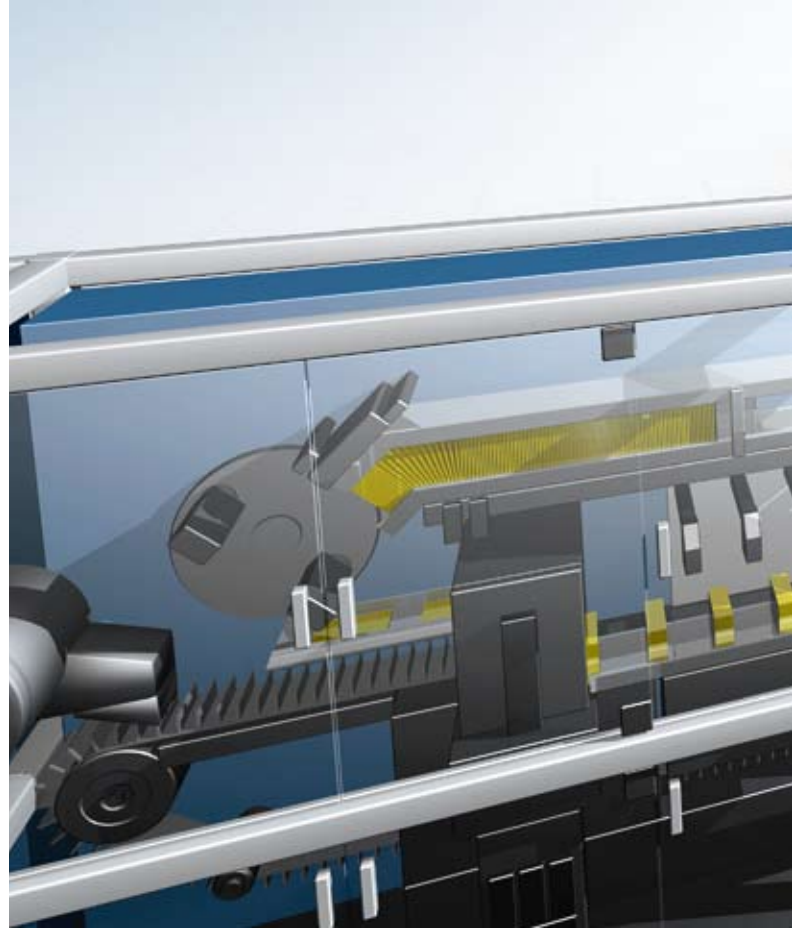
### Boxing – Flexible image packaging

#### Dependable production at high-speed

Packaging is like a business card. It contacts the customer and tells him about the product. Packaging stands for distinctiveness, not just outward appearance. Packaging is rather an important marketing instrument that affects purchase decisions and represents brand value.

And so the secondary segment needs to think about the consumer. Also key are reliable filling, the strictest hygiene requirements, documentation and traceability. Not to mention the variety of paperboard in terms of material and container type. Your customers make high demands. Which apply to you as well.

Use our help to solve complex tasks. For maximum flexibility Balluff – for you!



BOS Retro-Reflective Sensors



BIC Inductive Couplers



Sensors for Pneumatic Cylinders BMF

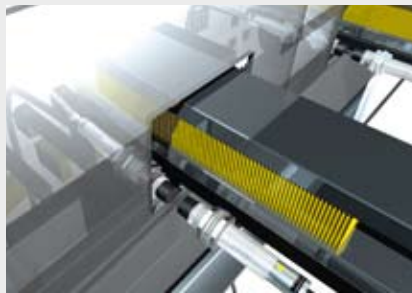


#### Easily monitor levels

The benefits to you

- **Reliable loading**
- **Less scrap**
- **Increased productivity**

Use our simple and economical solution for detecting and counting objects – such as level control in the box ready-bin. The BOS 12M retro-reflective sensor guarantees continuous feed of folding boxes. Reliably load the bin and ensure higher productivity.

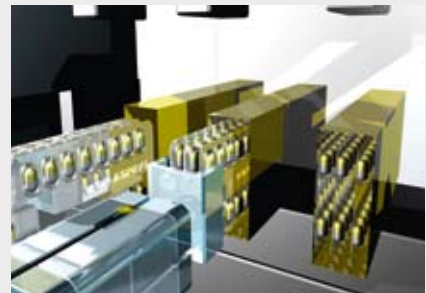


#### Make ready any variety of boxes at high speed

The benefits to you

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

There is virtually no limit to the variety of box size and shapes. And changing sizes usually involves great effort. Not with inductive couplers. Quick changes are made in the bat of an eyelash. Non-contact power and signal transmission saves not only setup time. You also get complete freedom from maintenance.



#### Correctly feed stacked blister packs

The benefits to you

- **Precise positioning**
- **Correct feeding**
- **High flexibility**

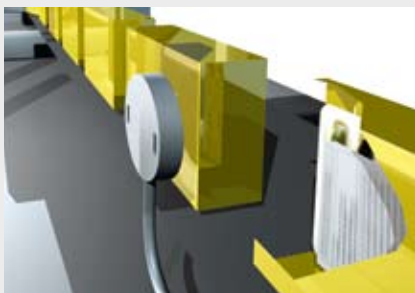
Damage to pill and tablet packaging has to be prevented at all costs. To correctly feed blister packs in folding boxes, the pneumatic cylinder needs to be precisely and reliably positioned. A piece of cake with our BMF. Plus you have a variable mounting system and are completely independent of the cylinder type.





BCS Capacitive Sensors

BOD Photoelectric Distance Sensors



### Simply inspect for enclosures

- The benefits to you
- **Correct, fast results from a sealed box**
  - **High efficiency**

The blister pack is correctly filled and the stack secure in the box. But what about the enclosure? With BCS capacitive sensors you can check whether it's there even after the box is closed. Reliably and precisely. Ensure maximum quality even at high speeds and enormous cycle rates.



- The benefits to you
- **Gentle drive and transport**
  - **High product quality**
  - **Maximum process dependability**

### Dependably transport boxes

Boxes with highly sensitive contents are always challenging. And transporting them on conveyors is a touchy process. Boxes glide smoothly when conveyor belts are controlled using the BOD 63M photoelectric sensor: with safe acceleration and soft braking even in the curves. Ensure high product quality and maximum process dependability. And increase the efficiency of your equipment at the same time: With IO-Link, the universal interface that ensures detailed diagnostics and centralized setup. IO-Link is fast and easy to install, saving you time and money.

# End-of-Line Packaging

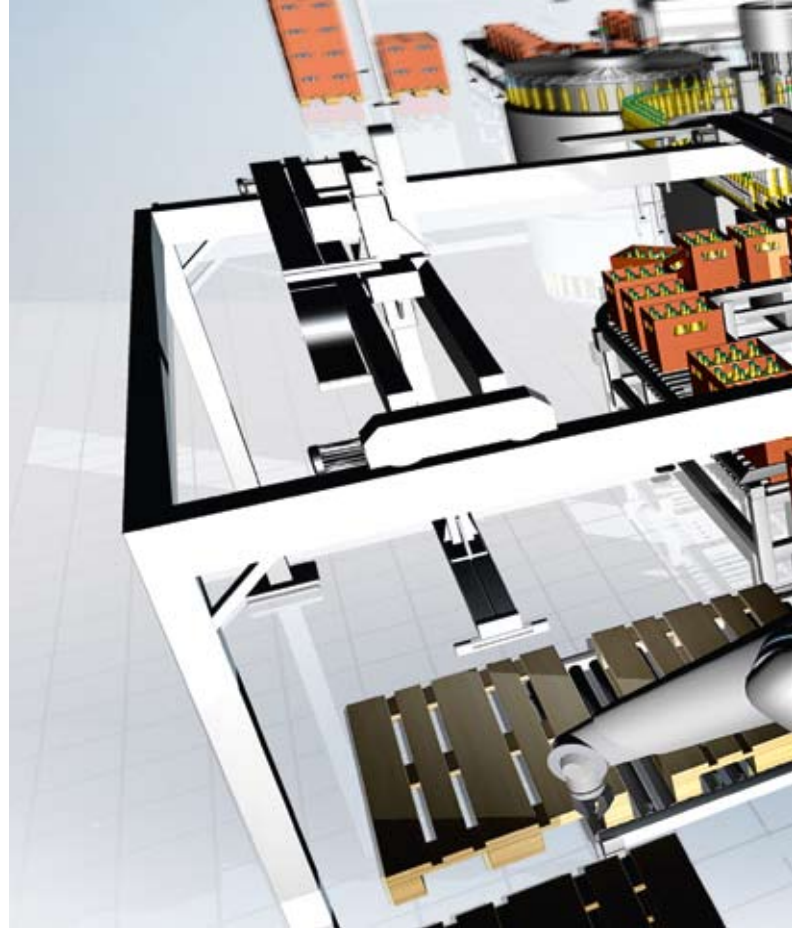
Crates and boxes quickly palletized

## For maximum flexibility

Quality is the key to success. Especially in end-of-line packaging. Dependable material flow, correct handling of any variety of packages, reliable use of packaging material or securing hazardous areas are just a few of the things you have to deal with. Add to that pre-picked pallets with various products in various sizes. And the list goes on. Many kinds of tasks that are solved not just in the automation itself, but in the development state of refined packaging lines.

Whether user or developer, use a comprehensive sensor product line with industrial RFID and vision systems for your complex process steps and your design.

Build our solutions in. And rely on decades of experience and reliable Balluff partnership. For optimized production sequences, maximum flexibility and highest quality. For increased productivity. Day in and day out.



BVS Vision Sensors



BOD Photoelectric Distance Sensors



BML Magnetic Linear Encoder System



### Dependably inspect packaging film printing

- The benefits to you
- **Identify up to 32 features at one time with 100% accuracy**
  - **Almost effortless even with frequent changes**

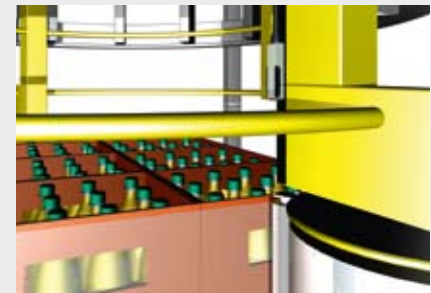
The BVS Vision Sensor shows all its strengths in classic inspection tasks. In one step it checks presence, position and correct form of a printed image. And more. Just the way you want it. With minimal effort – even with frequent size changes and various packaging types. Use a multi-talented sensor.



### Reliably check pallet heights

- The benefits to you
- **Precise checking over long distance**
  - **High flexibility**
  - **Maximum flexibility**

Flexible packaging units and package sizes require a flexible wrapping system. The BOD 63M photoelectric distance sensor detects the height of the stack from up to 6 m away with high precision and ensures efficient wrapping. Use the BOD 63M for the highest productivity and maximum efficiency.



### Precisely position stretch wrap

- The benefits to you
- **Maximum protection**
  - **Minimum consumption**
  - **Simple to use, wear-free**

Pallets need to be well protected for secure transport. The rotating BML ensures minimal stretch film consumption. It reliably detects the position of the rotating film roll and provides the trigger pulse for cutting. Immune to dust and maintenance-free. Profit from simple installation to retrofit your system.



BIS Industrial RFID Systems



BTL Luminescence Sensor



**Uniquely identify and collate picked pallets**

- The benefits to you
- **Simple and reliable, even when size is changed**
  - **Portable for greatest flexibility**

Flexible picking and customer-specific palletizing places great demands on your logistics. Master the situation with BIS Industrial RFID. Not only identify any possible combinations, but track them as well. And the pallets can be assigned at any time using stationary or handheld readers.



- The benefits to you
- **Exact positioning**
  - **High reliability**
  - **Best quality**

**Correctly position bottles before wrapping**

Bottle labels and packaging are indispensable as advertising vehicles. But image works even better when the product itself becomes the advertiser. Bottles are packaged in unprinted shrink wrap and aligned so that all the labels are visible from the outside. The BLT 21M luminescence sensor easily detects alignment markings that are invisible to us and the customer. Take advantage of its reliability. And your customers will appreciate significantly reduced costs, since no additional imprint is needed

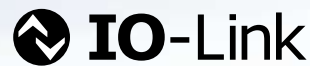
# Increase productivity with solution expertise

Industrial Identification,  
Industrial Networking

As complex as the entire packaging sector is down to the lowest levels, productivity still demands simple solutions. And requires flexibility and dependability for high efficiency. Balluff high-end performance is reliable and increases the value-added in the entire process.

Industrial identification has proven itself when there are changing lot sizes and frequent size changes, especially when extreme quality, performance, reliability, flexibility and speed are demanded.

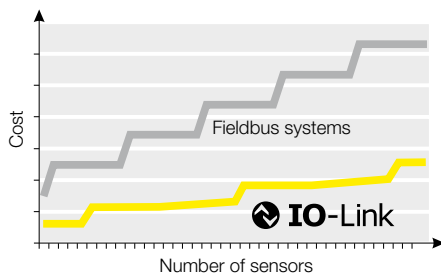
Take advantage of our high-performance sensors, and then also enjoy the benefits of outstanding connectivity solutions. Whether for the pharmaceuticals or beverage industry, foods and snacks or various segments of primary, secondary and end-of-line packaging – use Balluff performance to easily exceed your requirements.



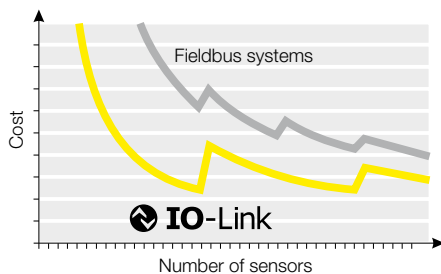
**Development and Design**

**Installation and Startup**

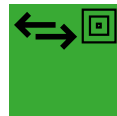
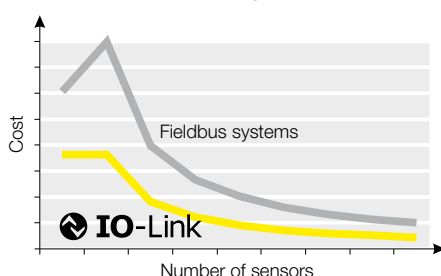
## Reduce connection costs using IO-Link



## Reduce port costs using IO-Link



## Reduce initial costs using IO-Link



**BIS Industrial RFID system – for the utmost dependability and maximum transparency**

**Vision sensor BVS – a multi-talent offers 100% quality**

Use the high-performance BIS industrial RFID systems for 100% data integrity and optimized production processes. And profit from more than 20 years of Balluff RFID expertise.

With non-contact BIS systems your data are always at the right place at the right time, allowing you to manage the information flow in any modern production environment. BIS is:

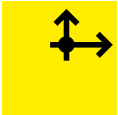
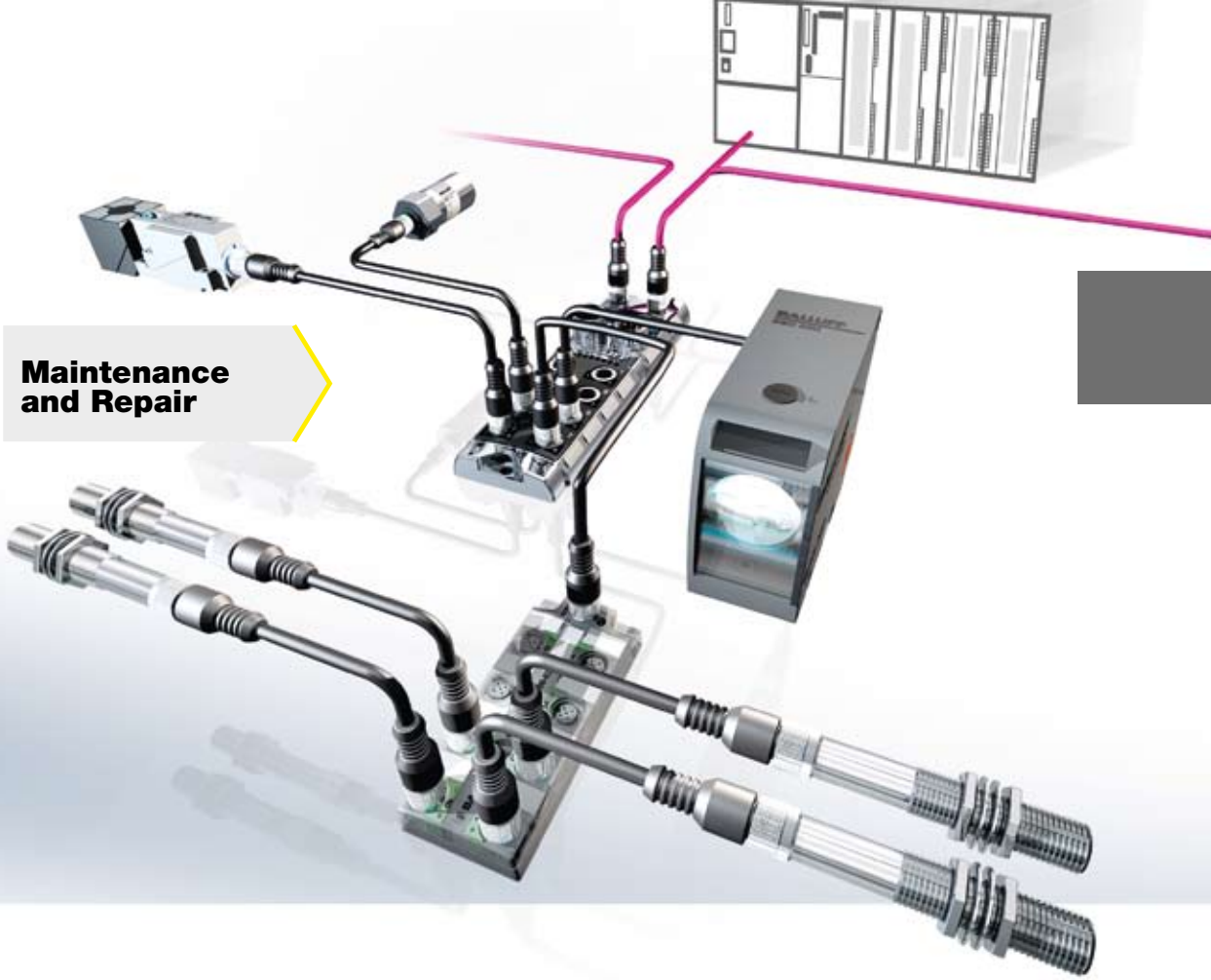
- Flexible and fast with unlimited read/write cycles
- High-performance even with large data quantities and dynamic applications
- Flexible with numerous form factors and ideally matched components
- Capable of integration anywhere in the world
- Cost-effective

With the BVS Vision Sensor you choose

- Higher productivity
  - Greater economy and
  - Unrestricted quality.
- Use the Balluff BVS Vision Sensor wherever multiple monitoring functions are required at the same time or in rapid succession. Simply adapt the Vision Sensor to your requirements. It reliably detects all the parts even when workpieces are changed. Reconfigurations, even in-process, are always possible. So you always remain flexible. Monitor your production using the BVS with absolute reliability. One sensor is all you need for high efficiency.

**Operation**

**Maintenance and Repair**



**IO-Link – The interface for optimal process quality**

The manufacturer-neutral, uniform communication standard with the decisive plus

- Simple to install, no new cables needed
- Centralized parameter setting from the controller
- Send and reliably monitor data

IO-Link makes it all simpler and easier. In any direction. Using simple standard cables. Through

- High equipment availability
- Reduced downtimes
- Easy size and product changing

Convince yourself of optimal process quality with IO-Link. Quite simply. Because you already have enough challenges.



**BNI Valve Terminal Plugs – Simplest handling with IO-Link**

Use the BNI valve terminal plugs to connect decentralized valve terminals easily to the controller. Child's play with IO-Link. And high process quality is guaranteed.

Additional benefits to you:

- Compact adapter body: for direct plug-in with minimal space requirement
- Great flexibility, since valve terminal plugs are pin-compatible with a wide range of valve terminals
- Optimized cabling using 3-conductor standard, and
- Modularity, since up to 16 solenoids can be driven.



**Non-contact power and signal transmission with BIC inductive couplers**

Whenever modules need to be quickly disconnected and correctly coupled, Balluff Inductive Couplers are the first choice. They connect sensors and actuators non-contact and therefore wear-free. Reliably transmit power and signals. And provide advantages for flexible packaging equipment with changing batch sizes. You reduce setup times when replacing complete system components. So you can immediately respond to new requirements. Because converting is child's play with Balluff inductive couplers. And cable breaks are a thing of the past. Simply select from the various performance classes. And ensure maximum uptime of your packaging equipment. With maximum flexibility.



**BCC connectors and connection cable for high efficiency**

Fully utilize the potential of high-quality through optimized connection technology. And use perfectly matched connectors and connection cable: for the best possible connection of high-performance technology.

Profit from

- Simple, fast utilization
- Guaranteed high enclosure rating and
- High shock and vibration immunity

# Comprehensive technological expertise, reliable partnership

Your goals – our guidelines

## Technological variety

Balluff not only masters the entire technological variety with all the operating principles, but also offers innovative technology and the most modern electronics – verified down to the last detail in our own accredited testing laboratory.

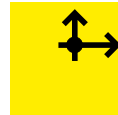
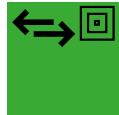
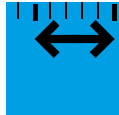
Balluff technology can be used anywhere in the world. And Balluff technology has been proven in every possible industrial sector. Not just in the global packaging industry, but also in automotive, wood and plastics or energy, metalworking and hydraulics.

## Individual solutions – more efficiency

Balluff products increase throughput, quality and productivity day in and day out. They create the prerequisites for meeting the demands of the global market when it comes to greater performance and cost reduction. Including in the most demanding areas. Simply describe what you need to do. We'll have the answer – just the way you need it.



**more added value**



### Object detection

- Inductive Sensors
- Sensors for Pneumatic Cylinders
- Magnetic Field Sensors
- Capacitive Sensors
- Ultrasonic Sensors
- Pressure Sensors
- Photoelectric Sensors
- Fiber Optic Systems
- Slot Sensors
- Dynamic Optical Windows
- Light Grids
- Contrast sensors
- Luminescence sensor
- Color Sensors
- Angle sensors
- Mechanical single and multiple position switches

### Linear position sensing

- Micropulse® Transducers Profile
- Micropulse® Transducers Rod-style
- Magnetic Linear Encoder Systems
- Incremental and Absolute Encoders
- Inductive Linear Position Sensors
- Inductive Distance Sensors
- Magneto-inductive Position Sensors
- Photoelectric Distance Sensors

### Industrial Identification

- Industrial RFID Systems
- Vision Sensors

### Industrial Networking and Connectivity

- Connectors
- Splitter Boxes
- Valve Connectors
- IO-Link
- Inductive Couplers
- BUS Systems
- Wireless
- Electrical Devices

### Mechanical Accessories

- Fastening Components
- Mounting Systems

**Sales and Logistics Services – personal consulting, outstanding support, reliable partnership**

Demand more than high-quality and innovative products for the most demanding requirements. Demand maximum support: expert advisors and individual, process-tailored services. Both technical aspects and life cycle costs are taken into consideration as early as the idea and concept phase. Because productivity depends on the sensor, on requirements-optimized delivery schedules and on reliable partnership.

Profit from our Sales and Logistics Services department. To get the best solutions. Expert support for tightened processes. More efficiency. Optimized value added. And highest productivity. With Balluff for more added value.

- Balluff Partner Extranet
- E-Catalogs
- [www.balluff.com](http://www.balluff.com)
- Electronic Data Interchange (EDI)
- Assembly Kit
- Managed Inventory



As outstanding as our products are, we offer even more: Error proving, Poka Yoke, Six Sigma, installation, maintenance, logistics, after-sales services ... Precisely matched to your individual requirements. And optimized for your added value.

Balluff stands for comprehensive systems expertise from a single source, continuous innovation, the most modern technology, the highest quality and greatest reliability. And even more: for distinctive customer orientation, custom tailored solutions, fast worldwide service and outstanding applications assistance. In short: for reliable, expert partnership.

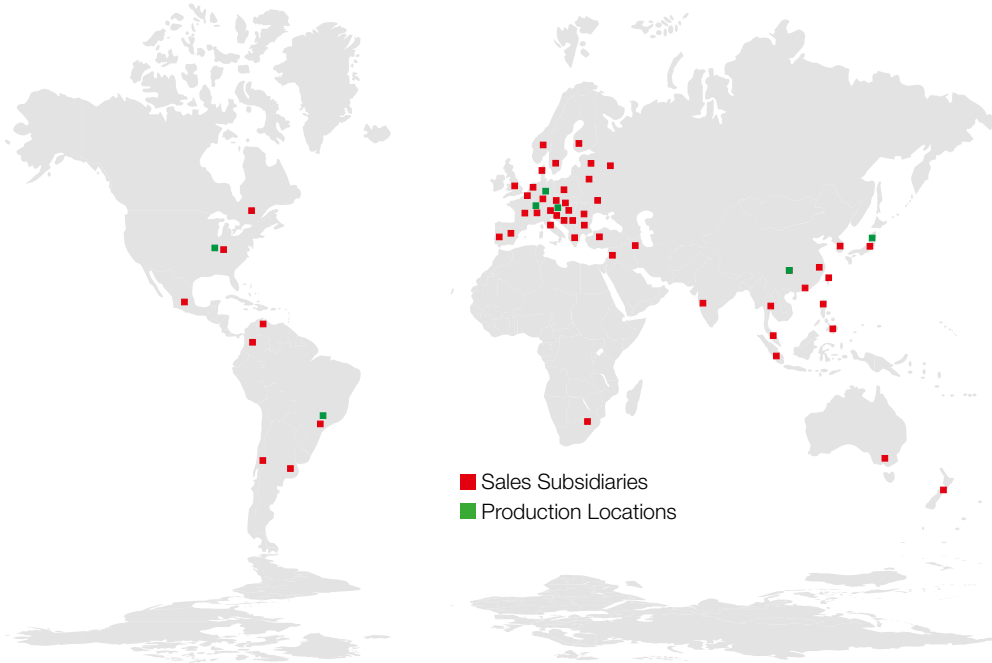
# BALLUFF

sensors worldwide

## Comprehensive expertise – worldwide

With over 50 years of experience, Balluff GmbH is a worldwide leading specialist in sensors, displacement measurement, industrial identification and networking.

Balluff is present on every continent – with 2200 employees, 53 subsidiaries and representatives and 8 manufacturing locations, we are always nearby.



■ Sales Subsidiaries  
■ Production Locations



### Corporate Headquarters

Germany

### Subsidiaries

Argentina  
Australia  
Austria  
Belarus  
Belgium  
Brazil  
Bulgaria  
Canada  
Chile  
China  
Columbia  
Croatia  
Czech Republic  
Denmark  
Finland

France  
Greece  
Great Britain  
and Ireland  
Hong Kong  
Hungary  
India  
Indonesia  
Iran  
Israel  
Italy  
Japan  
Korea  
Lithuania  
Malaysia  
Mexico  
New Zealand  
Netherlands  
Norway

Philippines  
Poland  
Portugal  
Romania  
Russia  
Serbia  
Singapore  
Slovak Republic  
Slovenia  
Spain  
South Africa  
Sweden  
Switzerland  
Taiwan  
Thailand  
Turkey  
Ukraine  
USA  
Venezuela

■ [www.balluff.com](http://www.balluff.com)

Balluff GmbH  
Schurwaldstrasse 9  
73765 Neuhausen a.d.F.  
Germany  
Phone +49 7158 173-0  
Fax +49 7158 5010  
[balluff@balluff.com](mailto:balluff@balluff.com)