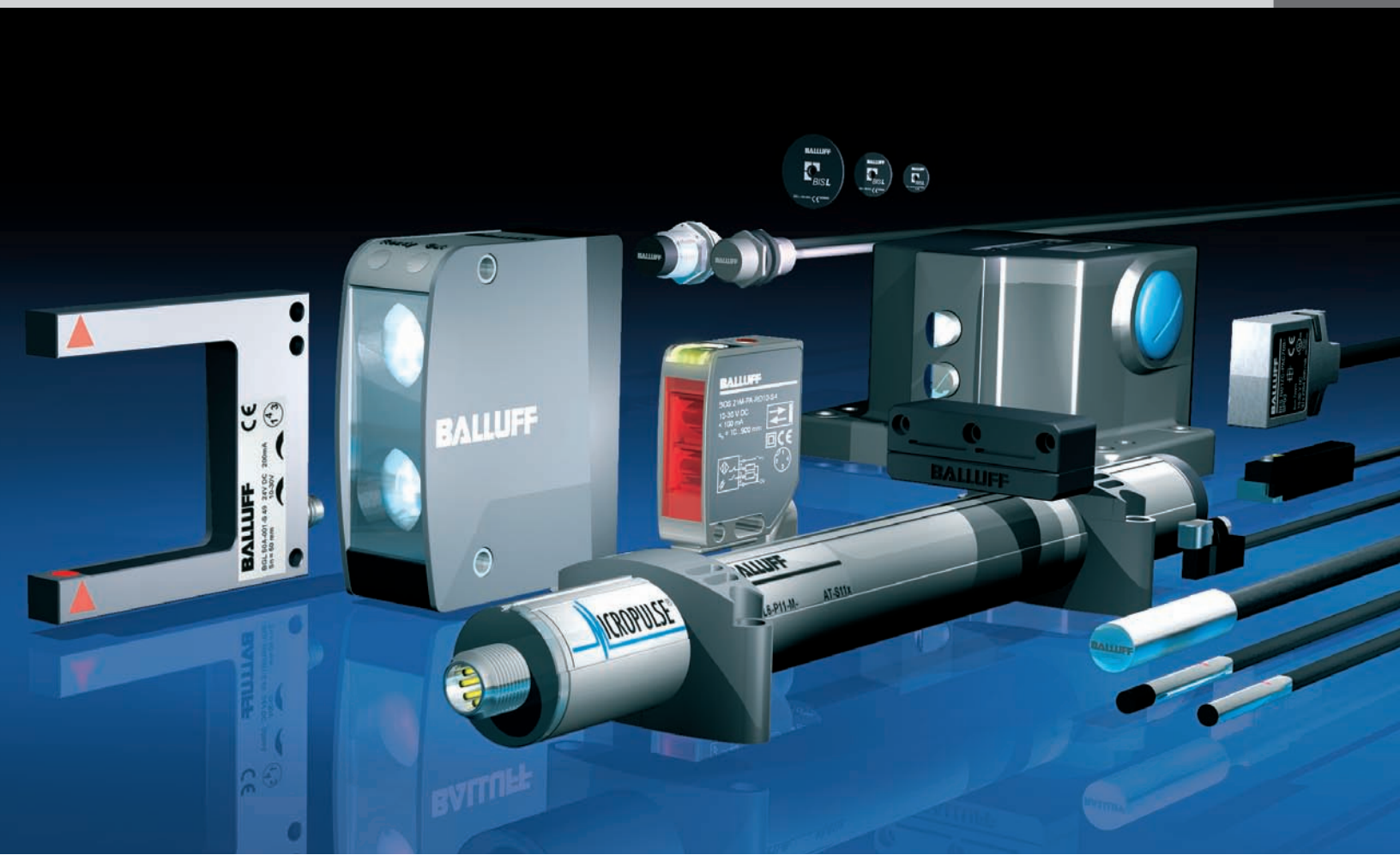


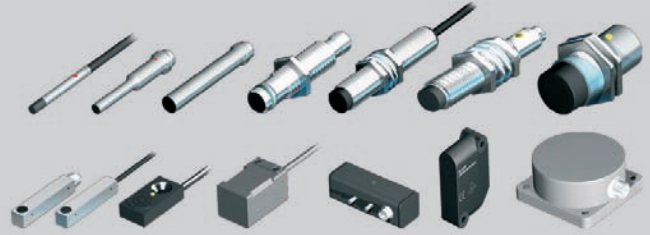
Sensor Selection Guide

Product overview brochure



Inductive Sensors

Balluff offers a variety of inductive sensor solutions: standard designs, block styles, extended range, weld field-immune, specialized sensing – whatever the need, there's a Balluff inductive sensor that will provide optimum service. Balluff sensors are found in machine tool equipment, the plastics industry, textile production machines, woodworking, automotive manufacturing – wherever there is a need to automate. From Mini to Maxi block style sensors from 5 x 5 mm to 80 x 80 mm, and tubular housings from 3 mm to 30 mm sizes, Balluff inductive sensors monitor, control, measure, and automate production sequences with high reliability and freedom from wear.



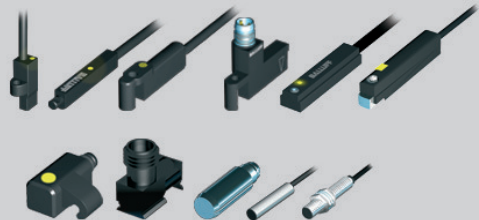
Photoelectric Sensors

Balluff photoelectric sensors are designed to provide specific process tracking, position information, and part quality solutions in all areas of the automation process. They are especially suited for applications in robotics, assembly, and material handling. Along with tubular housings both in plastic and metal sized from 5 mm to 30 mm, Balluff also offers a range of sensors in rigid, block-shaped plastic housings. From classic diffuse, retroreflective, and thru-beam types to more specialized versions, the Balluff photoelectric line will handle the toughest applications.



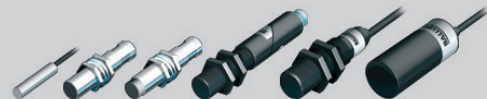
Cylinder & Valve Sensors

Magnetic field sensors are primarily used for monitoring the piston position on pneumatic cylinders. The magnetic field of a magnet embedded in the piston is detected by the sensor through the cylinder housing wall. Thanks to their non-contact position sensing capability, these electronic magnetic field sensors are reliable, wear-free, and are finding ever-wider use. Balluff offers perfect solutions for a variety of typical pneumatic cylinders. Balluff's universally compatible range of cylinder sensors with their engineered mounting bracket kit concept will fit virtually any cylinder shape or size.



Capacitive Sensors

Capacitive sensors detect the change in capacitance caused by the approach of an object in their electrical field. These sensors find broad use in sensing metals, plastics, or liquids and are used extensively in applications involving packaging, plastics handling, and liquid level sensing.



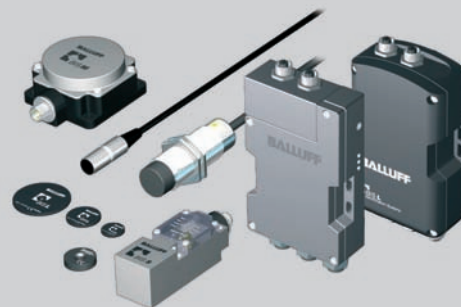
Remote Systems

Sensors are often required to rotate or follow the movement of a machine component or part being manufactured. This often results in repeated twisting and tangling of wiring, resulting in cable wear and ultimately failure. Balluff power remote systems consist of a transmitter and receiver unit that transmits power and sensor information through an air gap. They eliminate wiring failure while providing noise and contactless wear-free operation even in extreme conditions.



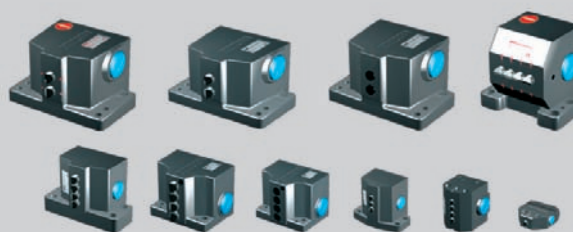
ID Systems

Balluff provides a range of RFID systems to track work in progress and provide feedback on in-process testing. Computer-assisted manufacturing, modern warehouse systems, flexible assembly lines, plus logistics and distribution systems benefit from Balluff BIS RFID systems. BIS components are available in plastic or metal housings and plug-in versions to meet any application requirement. Balluff has developed a complete line of easy to use read-only systems that interface directly into a PLC through discrete inputs or an RS-232 interface. These systems offer data reliability and environmental ruggedness not found in bar code systems. Read-only systems are ideal when product data are stored centrally in a control system and referenced by a code contained on RFID tags located on products, parts, or pallets.



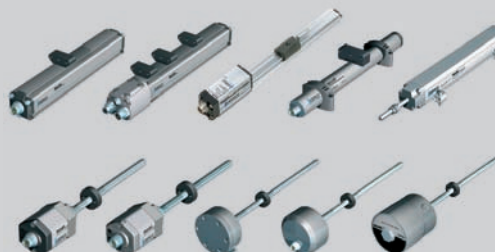
Mechanical Switches

Engineered for the most demanding switching requirements and harsh environmental conditions, Balluff cam switch systems are still the preferred solution of automatic machinery builders around the world. Key applications include control of automatic machine tools, overtravel limiting, and robot dynamic zone control.



Transducers

Balluff Micropulse linear position transducers provide highly accurate and reliable position control signals. Balluff's non-contact magnetostrictive technology means performance does not degrade over time, as with linear potentiometers. Micropulse transducers are available with a variety of housing styles and electrical outputs to fit a wide range of applications and are very popular in the lumber industry, plastic injection and blow molding, tire and rubber manufacturing, stamping presses, die casting, and all types of automated machinery where a continuous, absolute position signal is required.



Accessories

A complete range of accessories helps save costs and provides optimum sensor integration in any environment. In addition to protecting Balluff sensors, our accessory line is designed to permit precise, lasting sensor location positioning while permitting quick sensor change out at any time.



Connectivity Products

A comprehensive line of cables, cordsets, and connection blocks complement our product line, facilitating sensor use in every area of automation. Balluff offers custom application expertise on request.



Balluff Means Industry Expertise



Automotive

From stamping, to powertrain, to final assembly, Balluff's rugged products have proven themselves up to the task.



Rugged, long-range inductive proximity sensors



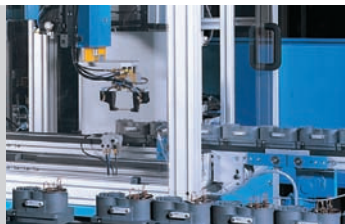
The industry standard multiple mechanical switches



Accurate and reliable photoelectric sensors



Ultra-reliable RFID systems



Automated Assembly

Machines are getting smaller, faster, and smarter. Fortunately, so are Balluff's sensing and ID products.



Miniature, long-range inductive proximity sensors



A new level of reliability and performance from pneumatic cylinder position sensors



Specialized photoelectric sensors



Ultra-reliable RFID systems with the latest in connection options



Manual Assembly

Here, error proofing is the name of the game. It takes a sensor company with the products and the know-how to solve real-world issues.



Rugged, long-range inductive proximity sensors



Ultra-reliable RFID systems with the latest in connection options



All types of lasers, true color, and UV sensors



Welding

Monitoring the position of parts and clamps in welding environments requires specialized products for sensor longevity. Our products and accessories enable maximum uptime.



Special coatings provide weld-field immunity with Balluff's weld-specific proximity sensors



Dynamic zone restriction using Balluff multiple mechanical switches



A new level of reliability and weld-field immunity with pneumatic clamp sensors



Eliminate troublesome connection problems with Balluff's power remotes



Metal Forming

Balluff has the in-die sensing critical to protect dies from damage, allow more strokes, and provide error proofing during the forming process.



Miniature tubular and block style sensors are easily bunkered within the die



Long range lasers and self-contained thru-beams for slug-out and part-out detection



Machine Tool

Balluff has the rugged, reliable sensors and ID solutions to meet the requirements of this industry. Tool ID has proven itself as an effective method for error proofing setup.



Steel face and long-range inductive proximity sensors



Ultra reliable RFID systems track tool data such as tool type, presetter offsets and usage history



Tire and Rubber

Given the amount of motion involved, Balluff position feedback products are preferred worldwide.



Rugged, long-range inductive proximity sensors for machine feedback



Long-range lasers for error proofing and position feedback



Reliable position feedback on hydraulic sensors with Micropulse® magnetoresistive linear transducers



Wood

You need heavy duty sensors to meet the position and handling requirements of this rugged industry.



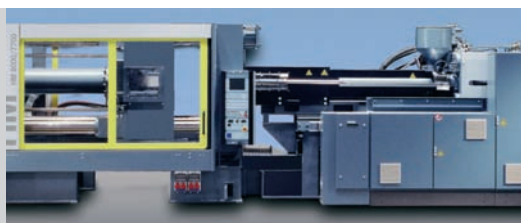
Rugged, long-range inductive proximity sensors for machine feedback



Long-range lasers for positioning and UV sensors for wood grading



Reliable position feedback of saw blades with Micropulse® magnetoresistive linear transducers



Plastics

Balluff's line of feedback devices effectively handle the position feedback requirements of injection and blow molding equipment.



Reliable detection of plastic parts and pellets with Balluff's capacitive sensors







Rugged, long-range inductive proximity sensors for machine feedback



Reliable position feedback with Micropulse® magnetoresistive linear transducers





Connectivity Products

Single & Double-ended Cordsets

M5	Nano	Micro	Mini
 <ul style="list-style-type: none"> – 3 pole – Female – Single ended – Double ended M5/M8 – Straight & right angle – Non-LED – PUR jacket – Nickel brass coupling nut 	 <ul style="list-style-type: none"> – 3 & 4 pole – Male & female – Single & double ended – Straight & right angle – LED & non-LED – PVC, PUR & TPE* Jackets – Coupling nut options – DC versions 	 <ul style="list-style-type: none"> – 2, 3, 4, 5 & 8 pole – Male & female – Single & double ended – Straight & right angle – LED & non-LED – PVC, PUR & TPE* jackets – Coupling nut options – AC & DC versions 	 <ul style="list-style-type: none"> – 3, 4, 5, 7, 8, 12 & 19 pole – Male & female – Single & double ended – Straight & right angle – Non-LED – PVC, TPE* jackets – 300 VAC & 600 VAC
Web Address: www.balluff.com/connectivity			





* **TPE** (Thermo**P**lastic **E**lastomer) offers outstanding performance in all areas of low and high temperature flexibility. It is resistant to cutting fluids, oils and weld slag in the harshest environments.

Multiple Interface Blocks and Splitters

Nano	Micro	Mini	Splitters
 <ul style="list-style-type: none"> – 4 & 8 port versions – PNP LED – Non-LED (cable out) – PUR cable-out – M16 Connector 	 <ul style="list-style-type: none"> – 4, 6 & 8 port versions – 4-wire & 5-wire – LED or non-LED – PUR cable-out – M23 Connector 	 <ul style="list-style-type: none"> – 4 & 8 port versions – LED indication – Micro/mini connections – Mini homerun connection 	 <ul style="list-style-type: none"> – M8/M8, M8/M12 versions – M12/M12, M12/M8 versions – PVC, PUR and TPE* jackets – Straight and right angle
Web Address: www.balluff.com/connectivity			

* **TPE** (Thermo**P**lastic **E**lastomer) offers outstanding performance in all areas of low and high temperature flexibility. It is resistant to cutting fluids, oils and weld slag in the harshest environments.

Receptacles & Field Attachables

Nano	Micro	Mini	Field Attachables
 <ul style="list-style-type: none"> - 3 & 4 pole - Male & female - Various mounting threads 	 <ul style="list-style-type: none"> - 3, 4 & 5 pole - Male & female - Various mounting threads 	 <ul style="list-style-type: none"> - 3 pole to 12 pole - Male & female - Various mounting threads 	 <ul style="list-style-type: none"> - M8 & M12 versions - Male & female - Straight and right angles - AC and DC applications

Web Address:

www.balluff.com/connectivity



Micro (M12) Connectivity Products

Balluff has the connectivity products that save time and money during installation. Our cordsets and multiple interface blocks provide simple connectivity from the sensor back to the control panel. We offer a wide variety of cordsets, splitters, and multiple interface blocks to ensure your needs are met.

Nano (M8) Connectivity Products

In addition to our M12 connectivity line, we also offer a variety of M8 connectivity products. Various cordsets and multiple interface blocks are available to optimize your connectivity solutions.

