

# PRESSEINFORMATION PRESS RELEASE COMMUNiqué DE PRESSE

# BALLUFF

Ultrasonic position detection sensor

**Product innovation BFD**

Page 1

## **Modeled after dolphins: New Balluff solution monitors hydraulic clamping devices**

**With its new ultrasonic position detection sensors, the sensor and automation specialist Balluff has developed an innovative solution for monitoring hydraulic clamping devices. It is the first product of its kind on the market and available as of August. The technology is modeled after the echolocation system of dolphins.**

"Our BFD sensor complements our extensive position detection portfolio and, more importantly, closes the gap with regard to short stroke cylinders," says Christian Seyfried, Product Manager at Balluff. "Above all, the manufacturers of these components will benefit from this, but so will machinery manufacturers and manufacturing companies that need a complete position detection solution."

### **Dolphins as role models**

Ultrasonic sensors determine distances by measuring the time it takes an ultrasonic wave to travel between transmission and reception. Balluff's BFD sensor emits ultrasonic waves in the hydraulic fluid of short stroke clamping devices like swivel clamps or block cylinders. The model for this technology can be found directly in nature – namely in dolphins. They also emit ultrasonic waves in the water to gain spatial awareness of their surroundings, find prey, and detect enemies.

### **Two in one**

The BFD sensor, on the other hand, uses ultrasonic waves to detect the clamping process and status directly, continuously, and quickly. By economically recording both values in one sensor, the solution meets the increasing requirements for machine safety. Possible deviations in the oil supply, casting defects, contour differences, or deformed parts can thus be detected at an early stage and maintenance measures can be carried out quickly. "Since the sensor monitors the entire clamping process, customers can also detect and rectify pressure fluctuations in the hydraulic unit, defects in the swivel mechanism, or damaged seals in good time," Seyfried adds.

### **Ideally suited for "Plug & Play"**

Balluff's ultrasonic position detection sensor features high-performance measuring capabilities across the entire measuring range (0 to 80mm), a high repeat accuracy of  $\pm 50\mu\text{m}$ , and a linearity deviation of  $\pm 250\mu\text{m}$ .

Thanks to its compact design, it can be easily integrated into any workstation. A high pressure resistance of up to 350 bar, IP67 protection, and an operating temperature of between 0 and 85 degrees Celsius allow the use in most hydraulic clamping devices. In addition, the sensor can monitor the position of and control hydraulic valves. It is also used to monitor the clamping of parts in metalworking and in production lines with a very high degree of automation.

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**Belegexemplar erbeten**

"The measuring system constantly adapts to the hydraulic oil currently in use as well as fluctuations in pressure and temperature. In addition to a small form factor and standardized interfaces that can be configured individually, this makes the BFD sensor ideal for "Plug and Play" applications in several different media – and allows for continuously reliable operations without any calibration," Seyfried explains.

**Keeping an eye on the status quo with Condition Monitoring**

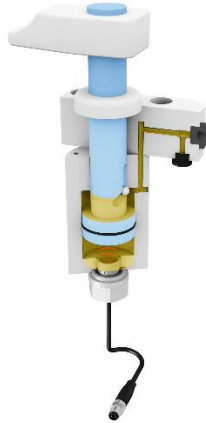
In connection with IO-Link, the sensor provides further important condition data about signal quality or the temperature of the device and detects critical changes such as air or particles in the hydraulic system. "The measuring system works with high precision and detects even the smallest tolerance deviations of the clamped components," says Seyfried and adds: "The position data of the clamps are automatically matched with the individual parts, facilitating effective quality assurance." With inductive couplers (BIC), analog-digital hubs, or IO-Link Wireless components, solutions for wireless integrations are also available.

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**Caption:**

*With its new ultrasonic position detection sensors, the sensor and automation specialist Balluff has developed an innovative solution for monitoring hydraulic clamping devices. The BFD sensor uses ultrasonic waves to monitor the clamping process and status.*



**Caption:**

*Balluff's BFD sensor emits ultrasonic waves in the hydraulic fluid of short stroke clamping devices like swivel clamps (see image). The model for this technology can be found directly in nature – namely in dolphins.*

**Meta-Description:**

*With its new ultrasonic position detection sensors, the sensor and automation specialist Balluff has developed an innovative solution for monitoring hydraulic clamping devices. By economically recording both values in one sensor, the solution meets the increasing requirements for machine safety. The technology is modeled after the echolocation system of dolphins.*

**About the company Balluff**

Founded in 1921 in Neuhausen a. d. F., Balluff with its 3900 employees worldwide stands for innovative technology, quality and cross-industry experience in industrial automation. As a leading sensor and automation specialist, the fourth-generation family-owned company offers a comprehensive portfolio of high-quality sensor, identification, network and software solutions. In 2022, the Balluff Group recorded sales of around 567 million euros. In addition to its central headquarters in Neuhausen a. d. F., Balluff has sales, production and development locations around the globe and is represented by 38 subsidiaries and other agencies in 61 countries. This guarantees customers fast worldwide availability of products and a high quality of advice and service directly on site.

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