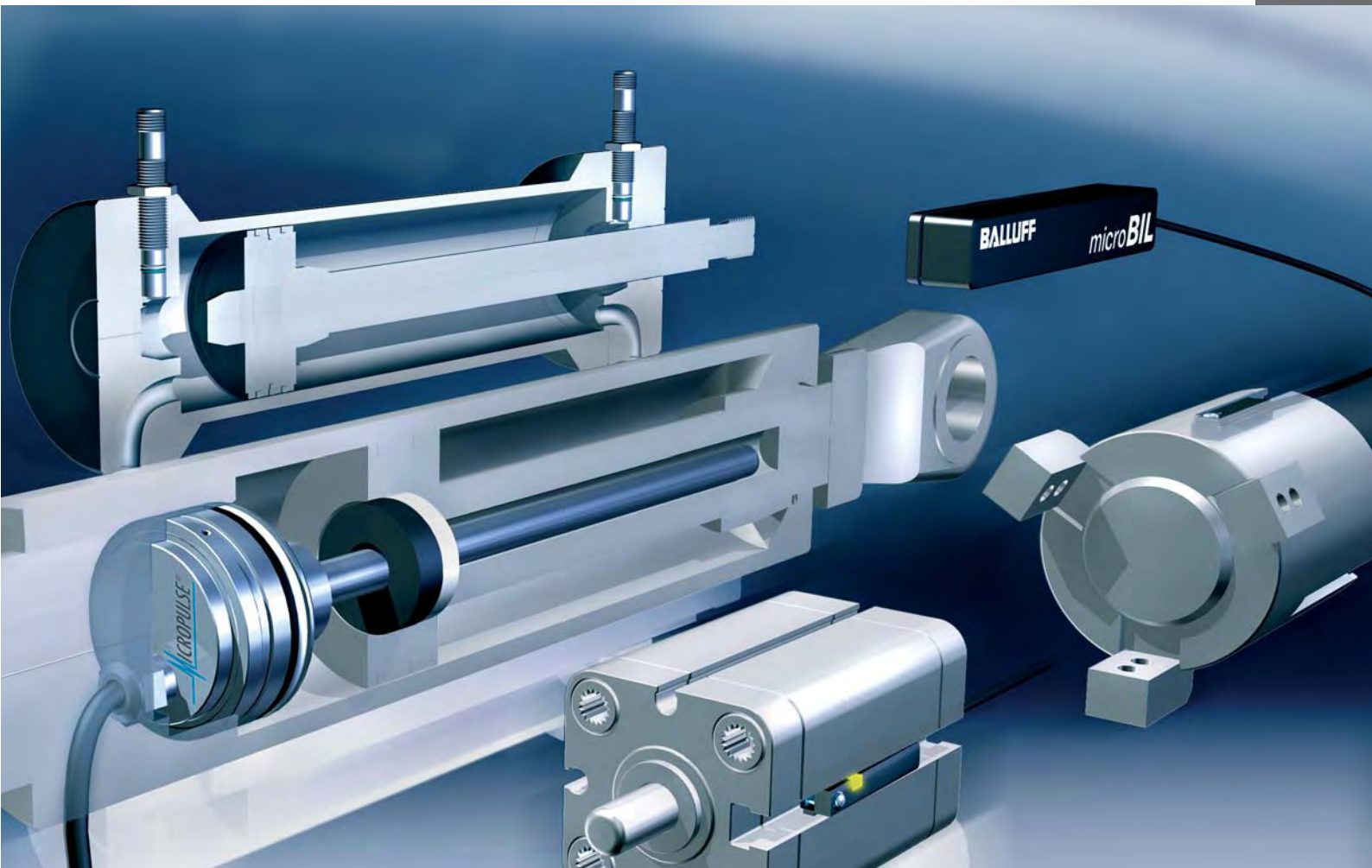
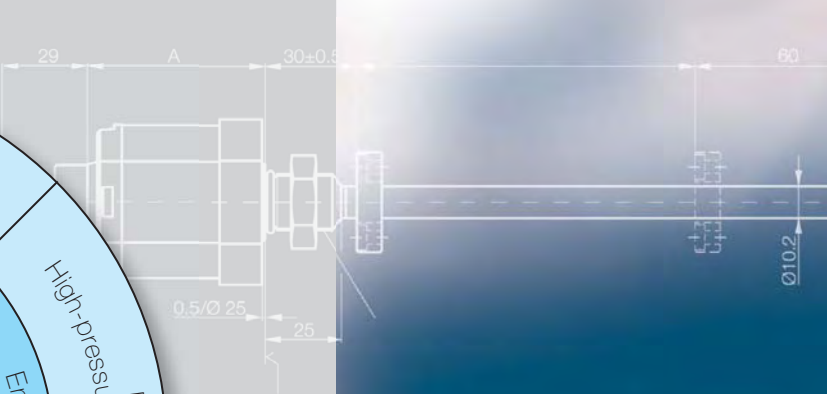
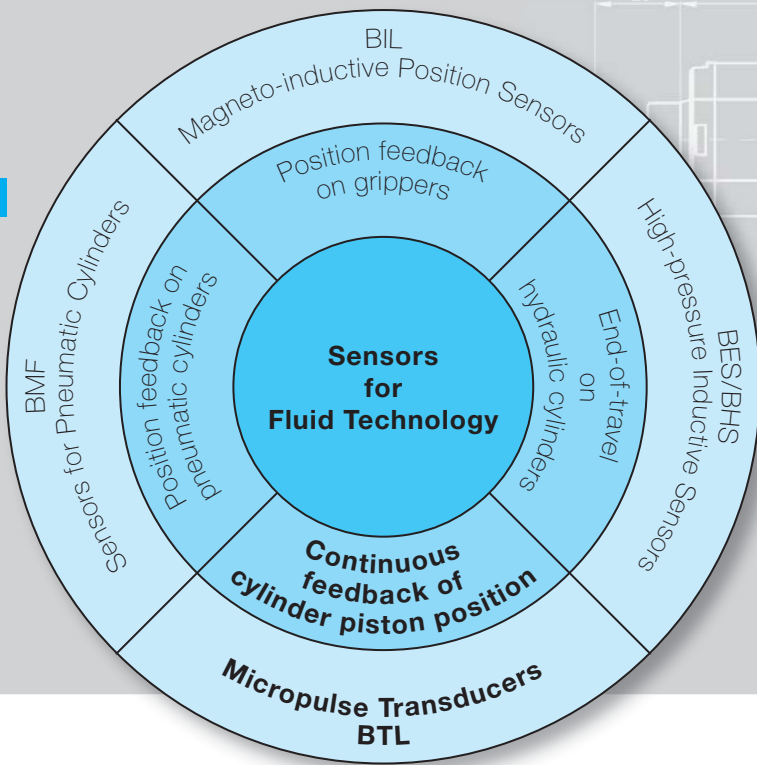


Sensors for Fluid Technology
... refined Quality for optimal Products



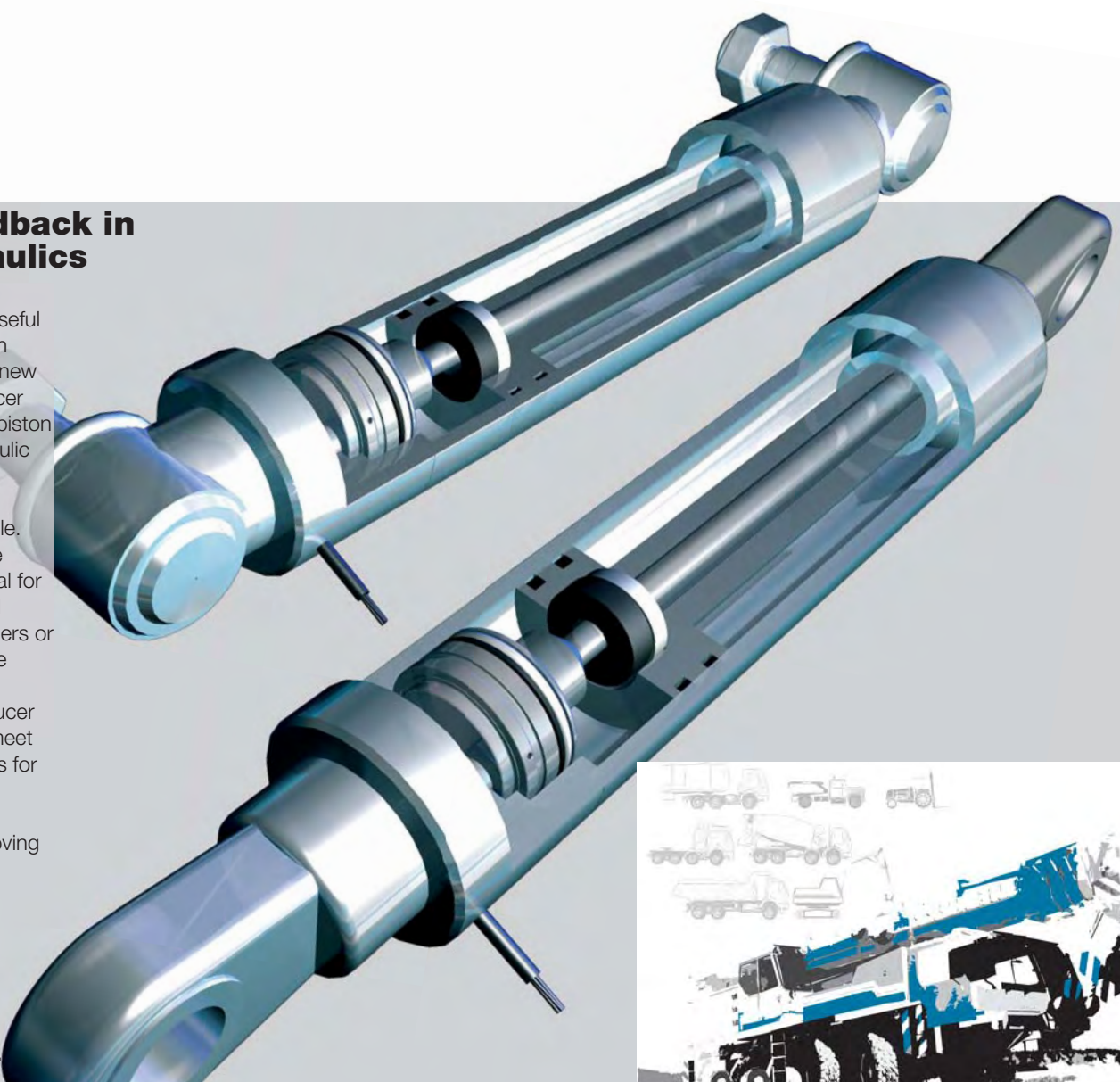


Micropulse Transducers BTL

For continuous piston position sensing on hydraulic axes

Position feedback in mobile hydraulics

Sensors are being used increasingly to extend useful life and improve safety in mobile equipment. The new Micropulse AR Transducer from Balluff senses the piston position in mobile hydraulic cylinders. The sensor operates on the proven magnetostrictive principle. The compact size of the transducer makes it ideal for use in pivot bearing and spherical eye end cylinders or large bore cylinders. The processing electronics integrated in the transducer has been designed to meet the strict EMC Directives for industrial lift trucks, agricultural and forestry equipment and earthmoving machinery.





Standard

Compact rod

Micropulse AR for mobile hydraulics

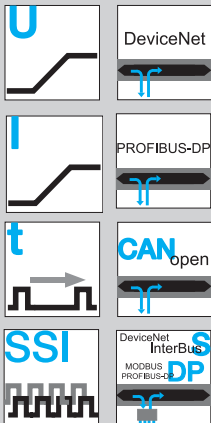
Compact housings for EX Zone

Special series for enhanced safety

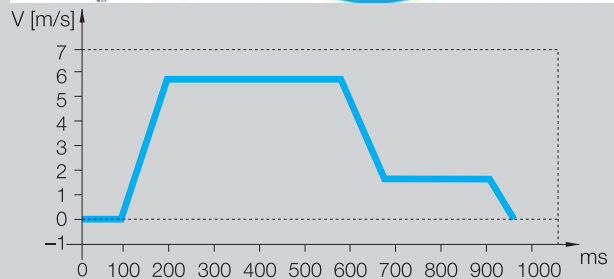
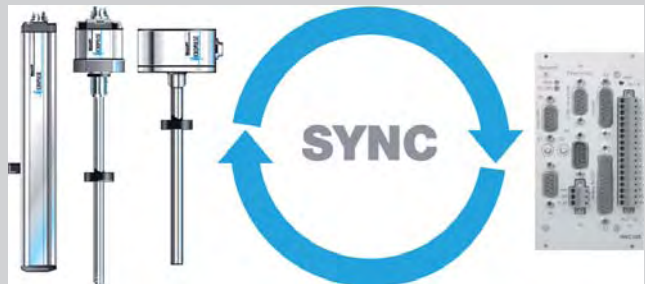
The right feedback system for every application

Advantages

- Non-contact, wear-free system
- Very reliable with high protection rating
- Pressure rated for integration in cylinders
- Wide variety of interface options
- Special form factors, e. g., for EX or redundant applications



Interfaces

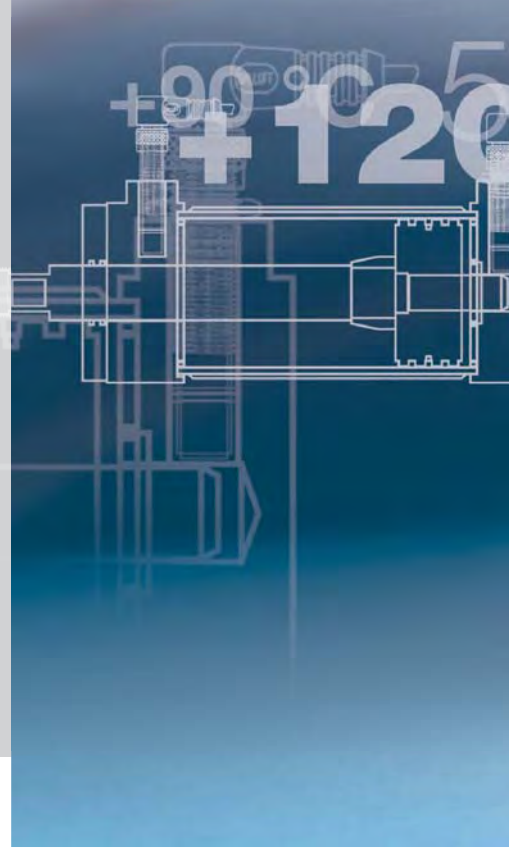
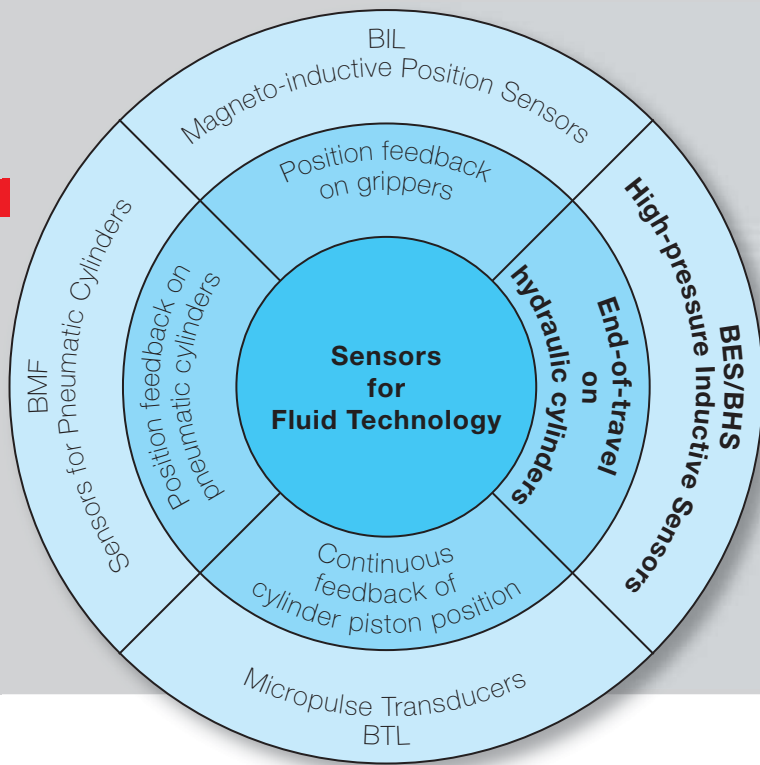


Closed-loop control and higher dynamics with SSI-SYNC

The absolute position information from the Micropulse Transducer is sent synchronous to the axis control card. This synchronous data acquisition enables exact calculation of the velocity and acceleration.

By feeding these state variables (velocity and acceleration) back, the damping and natural frequency of a hydraulic system are increased. These measures permit greater loop gain and with it better control behavior and higher dynamics.





High-pressure Inductive Sensors BES/BHS

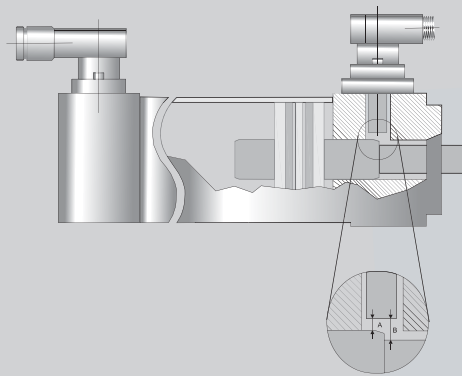
Reliably detect travel and positions directly in the pressure area



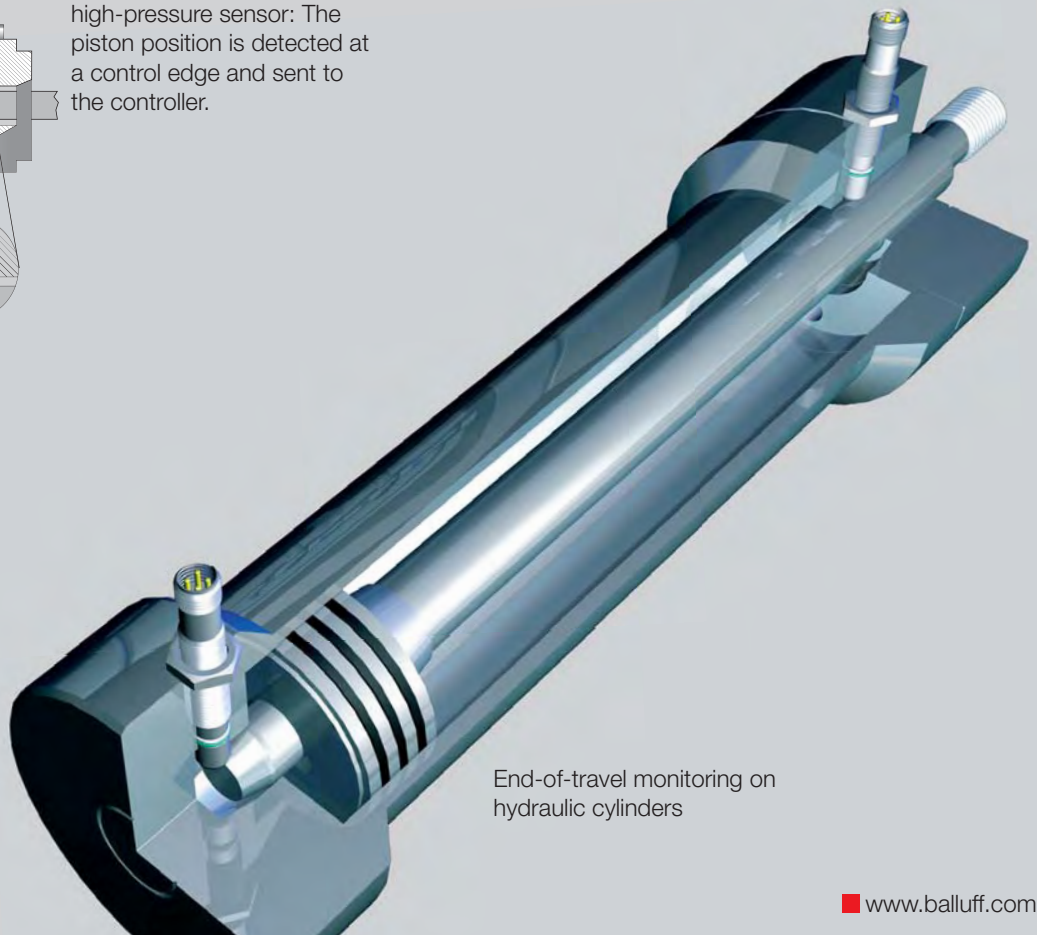
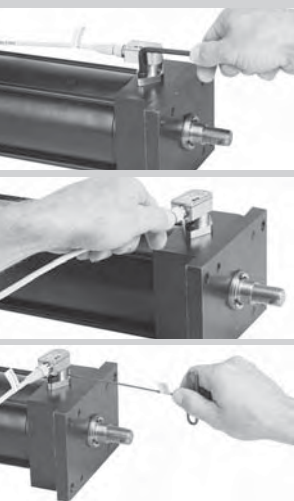
Strokemaster
(mainly North America)

Magnetic field-immune high-pressure sensors

The magnetic field-immune Strokemaster series was developed for applications on hydraulic clamping cylinders in welding environments.



Position detection on a hydraulic actuator using a high-pressure sensor: The piston position is detected at a control edge and sent to the controller.

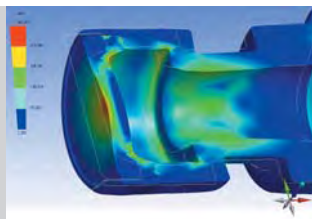


End-of-travel monitoring on hydraulic cylinders



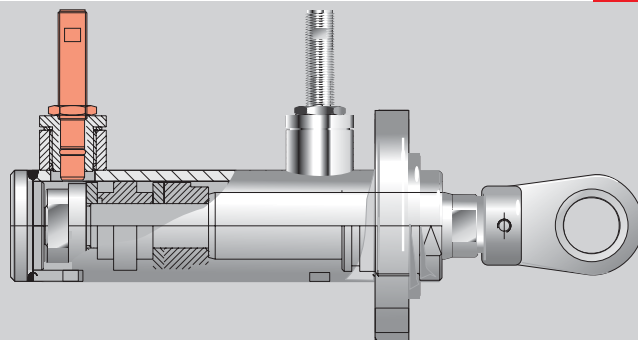
High-pressure sensors – ATEX conformal

The position of valves and cylinders can also be monitored in hydraulic applications in hazardous areas. High-pressure Namur sensors can be used in EX Zone 1, with the safety switching amplifiers installed on the safe side of the EX zone. Applications in EX Zone 2 permit the use of PNP normally open switches.



Simulation of the pressure load on a high pressure rated inductive sensor BES

Experience and expertise are required to develop sensors for extreme applications.



500 bar

For use in hydraulic units, pressure rated to 500 bar

High Pressure

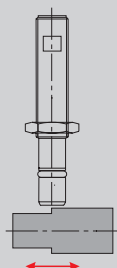
120 °C

For use in high ambient temperatures

High Temperature

High-pressure sensors also for applications in hot areas

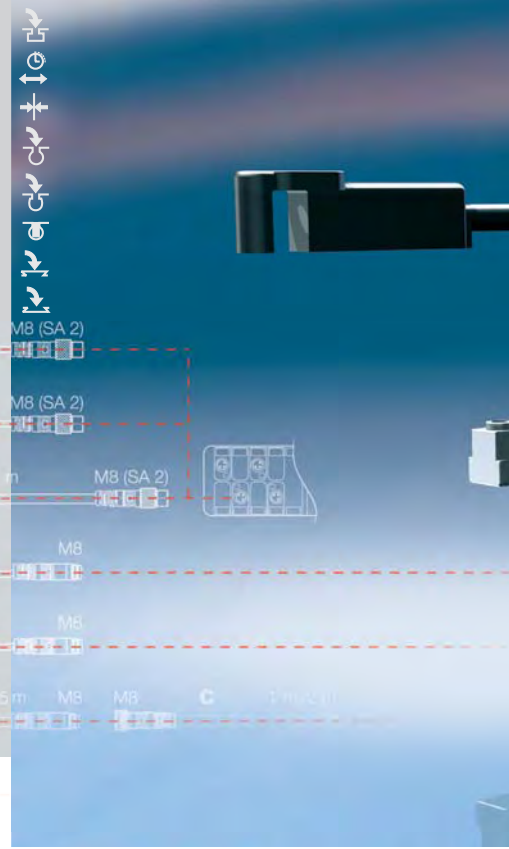
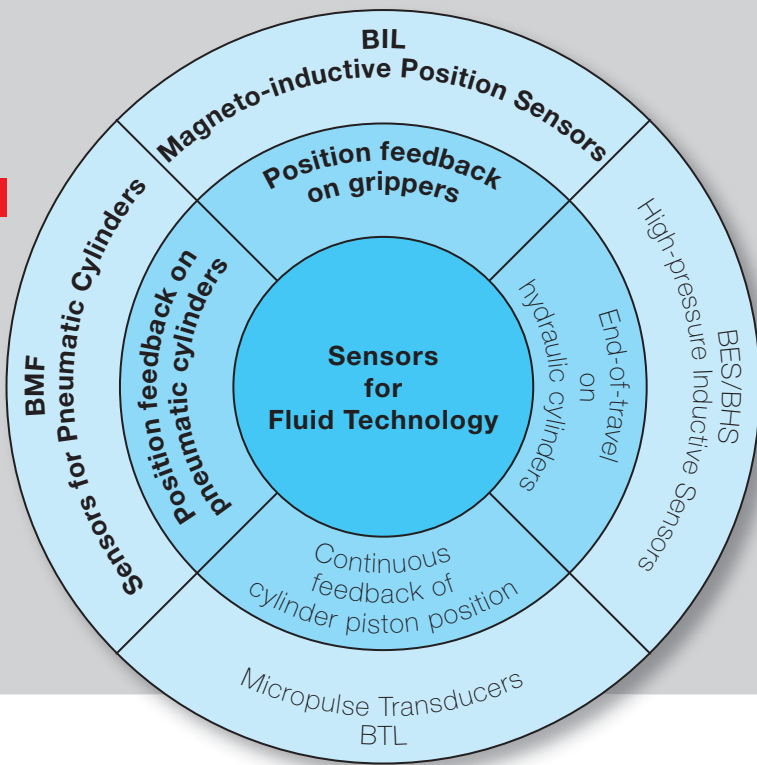
In high-dynamic applications or when biodegradable hydrocarbons are present, the medium temperature sometimes exceeds 100 °C. For these applications Balluff offers high-pressure sensors with a temperature range of up to +120 °C. A special version in this series even permits temperature monitoring in the cylinder.



End-of-travel monitoring on hydraulic cylinders

- Inductive sensors
- Pressure rated to 500 bar
 - Temperature ranges up to 120 °C for high-performance cylinders
 - Switching distances up to 2.5 mm with M12 housing for even more reliable switching
 - ATEX conformal sensors for Zone 1 and Zone 2



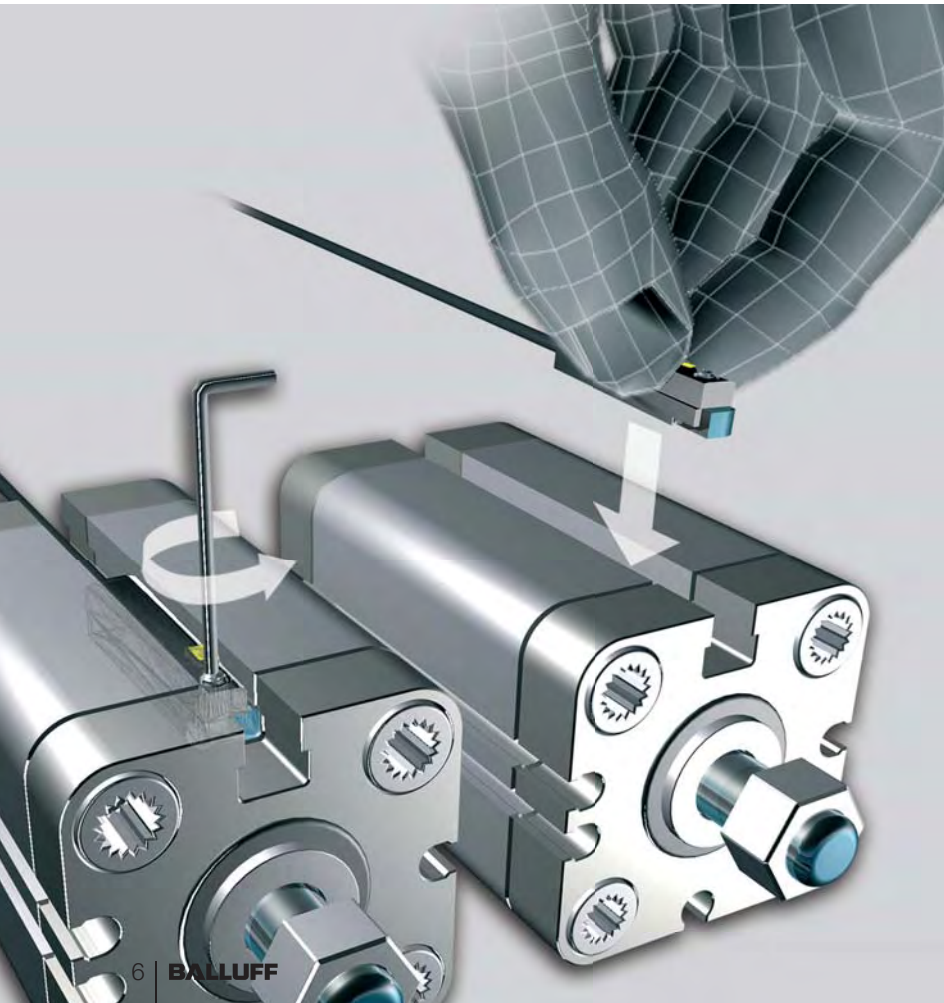


Sensors for Pneumatic Applications

These sensors bring your cylinder or gripper to the right position



Sensors for pneumatic cylinders



allround

The do-it-all BMF 305 is at home on any cylinder. Combined with one of our mounting brackets it promises a secure hold and precise switching!

mini.s

Our mini.s BMF 103 and BMF 303 work even on the smallest cylinders and grippers!

handy

The handy BMF 315K is fast and easy to mount in the T-slot from above!

special

The specialist BMF 315M for extreme applications. Rated for temperatures up to 105 °C. The BMF 315M is fast and easy to mount in the T-slot from above.



Magneto-inductive position sensors



Micro-BIL – brand new

Continuous position feedback for pneumatic miniature grippers

Miniaturized sensors for installation of the T-slot of mini-grippers enables flexible sensing of gripper positions, such as

- Open
- Closed with workpiece
- Closed without workpiece

Features

- Absolute analog output signal
- Senses travel up to 10 mm
- Non-contact, wear-free signal generation



FAXINFO

- **Micropulse Transducers BTL –**
Position sensing – with extreme precision
- **The Sensor Line –**
optimized for every automation task
- **High-pressure Inductive Sensors BHS –**
High-End for extreme applications
- **Magneto-inductive Position Sensors BIL –**
Position sensing has a new name
- **Magneto-inductive Position Sensor Micro-BIL –**
analog position feedback for miniature grippers
- **BMF 305M-PS-C-2-SA 4-S 49 –**
Cylinder switches for temperatures up to +105 °C
- **Sensors for Pneumatic Cylinders BMF 315K –**
for insertion from above
- **Sensors for Pneumatic Cylinders BMF 315M**
for particularly demanding applications
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