

**BALLUFF**

# The **Sensor Program** for Injection Molding



**MICROPULSE™**  
*The NEW STANDARD*

### The Sensor Program for Injection Molding

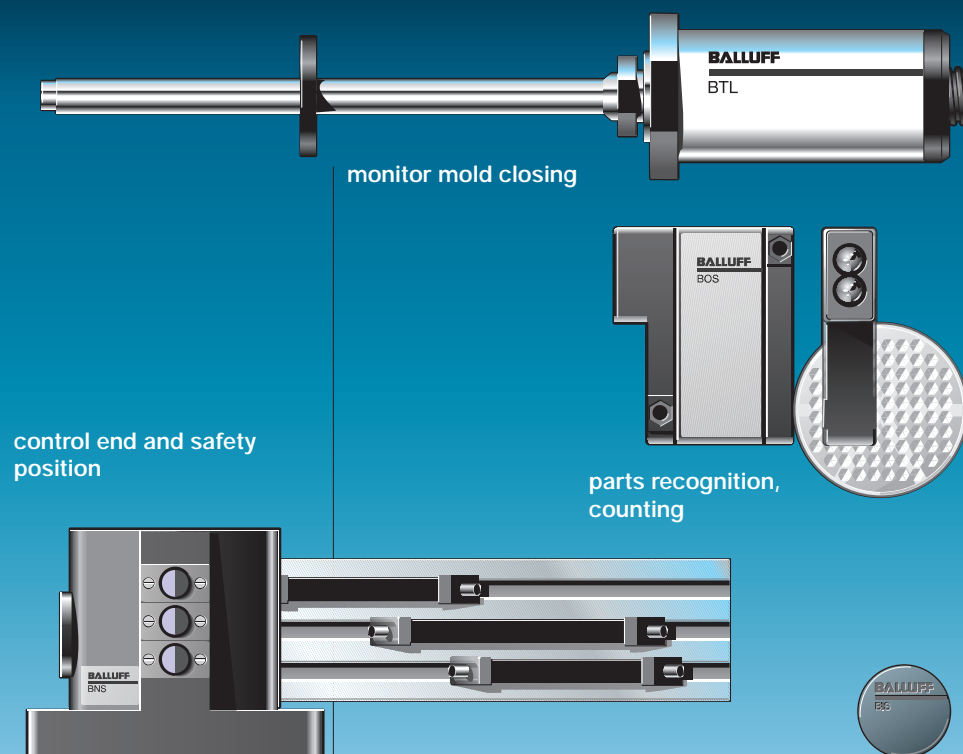
Fewer mechanical parts, more refined electronics, and intelligent software are influencing today's machine and construction industries.

New technological advances are allowing machines to become more efficient, flexible, and economical.

Also, in today's machinery the electrical and mechanical requirements for sensors are constantly increasing.

With a sensor program geared especially for the injection molding technology, Balluff is meeting these new requirements:

- The right sensors for the right function
- Excellent mechanical attributes
- Dependable switching
- Quality materials
- Wear free, maintenance free
- Long service life
- Easy installation



#### Multiple Limit Switches

Electromechanical Limit Switches according to DIN 43 693 and Multiple Limit Switches according to DIN 43 697.

Specially designed for harsh environment such as vibration and temperature change.

Limit Switches are used for automatic control and end positioning in the machine industry.

The telescoping plungers are patented and consist of corrosion resistant material. They provide a high repeatability as well as exact switching.

#### Rod-Style Transducer

Built into the hydraulic cylinder, the transducer provides continuous position and velocity feedback.

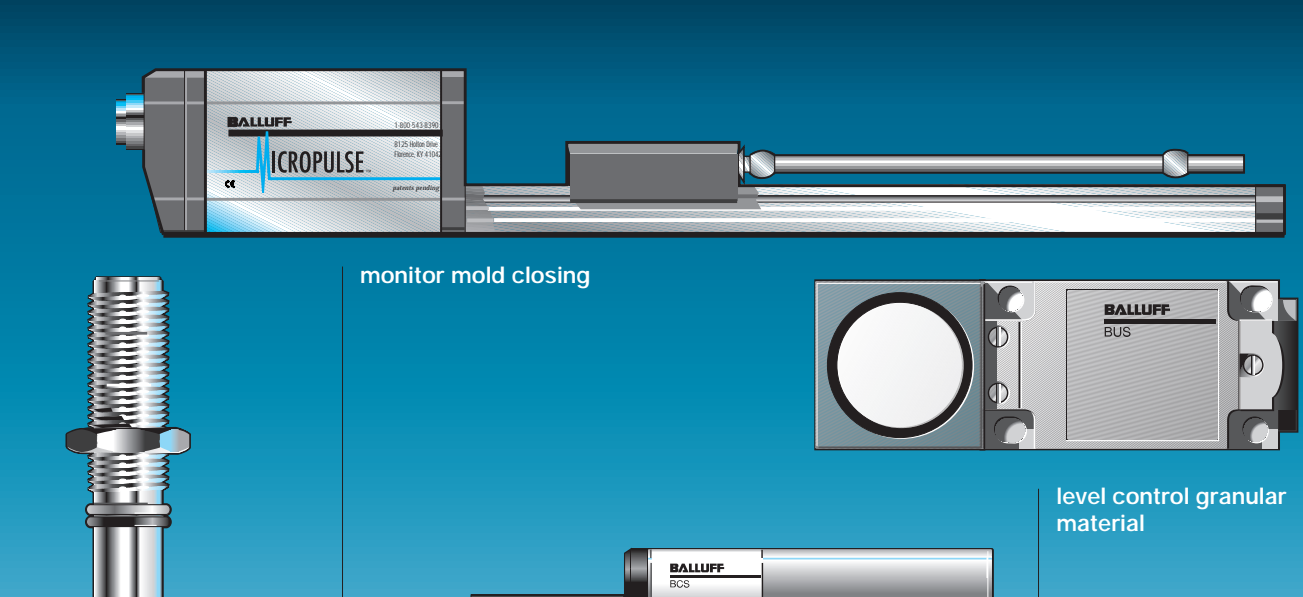
- non-contact, wear -free
- protected to IP67
- shock and vibration resistant
- absolute
- analog or digital signal
- resolution to 0.0004 in.

#### Identification Systems

All relevant data is stored in the code tag, e.g. ID number, mold type, vendor, machine setup data, etc. The setup data can no longer be lost—no more defective parts!

#### Optoelectronic Sensors

- Diffused optic, retroreflective optic or thru-beam sensors
- Short cylindrical form
- Compact square form
- Fully potted—universal installation
- Adjustable switching distance
- LED function display
- Protection insulation
- Short circuit protection



#### High Pressure Sensors

#### High Pressure Sensors

High Pressure Proximity Switches work inductively. They are directly built into a hydraulic cylinder for sensing the position of the piston. Therefore expensive mechanic solutions are not necessary. Versions up to 500 bar (7250 psi) are available, therefore these switches are also suitable for bigger cylinders.

Inductive Sensors are resistant against vibrations; plug and socket types make your installation easy.

#### Micropulse

A non-contact, wear-free alternative to linear potentiometers. A control arm linked to the closing mechanism provides continuous, absolute position and velocity information for injection, ejection, and mold closing.

- fast analog updates
- non-contact, wear-free
- easy installation with mounting feet
- axial and radial forces are countered by ball joint and swivel eye
- protected to IP 67
- smallest magnetostrictive profile unit
- voltage or current output

#### Capacitive Sensors

Particularly suitable for controlling the filling level in tanks. Liquid, powder or granulated materials are safely and contactlessly monitored.

Capacitive Proximity Switches are available as DC and AC versions, they are short circuit protected and have an LED for function control.

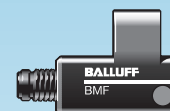
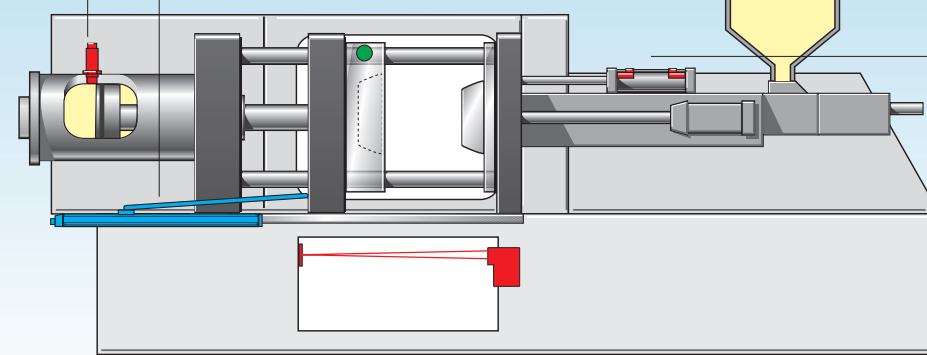
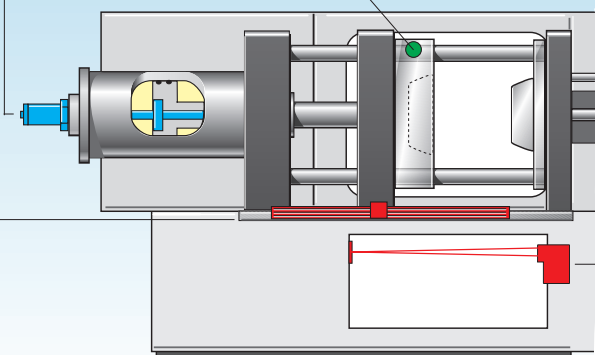
#### Ultrasonic Sensors

Solid, granular or liquid materials can be precisely detected regardless of color or texture. They are preferred where long range accuracy are required in dusty environments. Often they are the only alternative.

#### Magnetic Field Sensors

Recognizes the piston position of pneumatic cylinder walls

- Non-contact, therefore wear-free
- Replacement for reed contacts or mechanical limit switches
- Small size
- Installable on various cylinders with matching brackets
- Insensitive to contamination



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