

Actuator piston position Sensor Type SHE



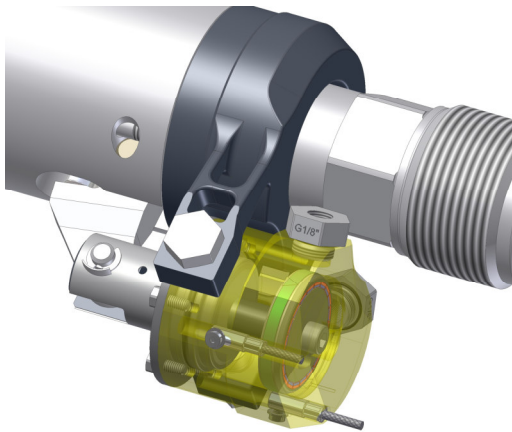
Applications:

Non-contact detection of piston position in the actuator

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Description



Today's molding processes require a thorough monitoring system for a fully automatic operation. Disruptions need to be automatically detected and transferred to the machine control.

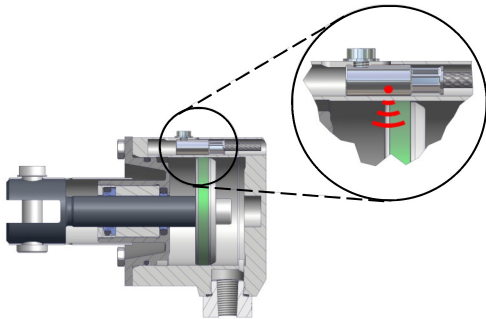
The function of our shut-off nozzle is monitored by the type SHE sensor. The sensor is integrated in the hydraulic or pneumatic actuator and detects the end position of the piston. From both signals the shut-off condition "open" or "closed" can be derived and passed on to the machine control through the signal amplifier.

Criteria:

- compact design
- exact, non-contact detecting of piston position
- continuous trouble free operation up to 155°C
- Signal amplifier with switch display

Retrofit:

All Herzog shut-off nozzles can be retrofitted in minutes by replacing the actuator and extending with Hall sensors, signal amplifier and connection cables.



Components

The piston position sensor consists of:

- 2x Hall sensors with cable
- Amplifier with display unit
- Connection cable (amplifier ↔ machine control panel)



Hall sensor (x2)	Amplifier with display unit	Connection cable
<ul style="list-style-type: none"> • Temperature range -50... +155 °C • High magnetic sensitivity • Switching frequency up to 100kHz • Sensing distance: 0...8 mm (depending on magnetic field) • Fixing screw installation 	<ul style="list-style-type: none"> • Operating voltage 4...30 V • Load current 350mA • Electrical isolated outputs • PNP or NPN output possible • Temperature range -20... +70 °C • Industry conforming steel housing 	<ul style="list-style-type: none"> • 6-Pole Type: LIYY 6*0.25 • Color conformity to DIN 74100

Installation

Preparation:

The shut-off nozzle must be fitted with our SHE actuator. Also required: the sensor cable with marked sensors A / B, the delivered screws with washers for fixing the sensors, connection cable and the signal amplifier (connection cable delivered without plug).

Note:

Sensor A in Boring A (piston retracted) = **LED A** lights

Sensor B in Boring B (piston extended) = **LED B** lights

Instructions:

1. Insert Sensors into the designated boreholes and loosely hold in place with washer and screw.
2. Find the signal point (see **Adjusting** on the next page) and fix.
3. Place amplifier in cool area. Pay attention that the cable is not strained.

Piston position indication on the amplifier unit:

With needle shut-off nozzle:

LED B = Nozzle open (piston extended)

LED A = Nozzle closed (piston retracted)

With bolt shut-off nozzle:

LED A = Nozzle open (piston retracted)

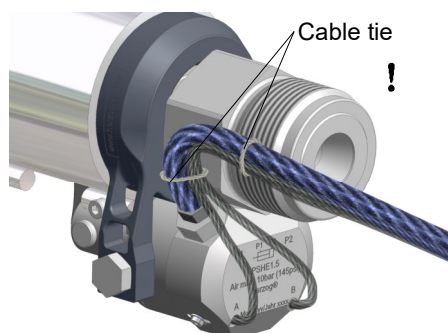
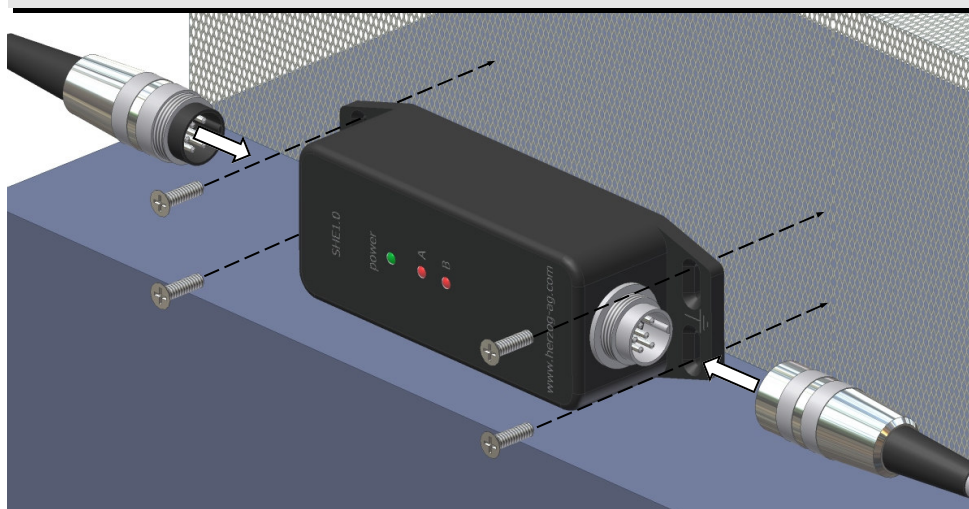
LED B = Nozzle closed (piston extended)



Important

Place amplifier in a cool area: max. 70°C.
Secure with screws or cable ties

Amplifier unit with switch display



Cable strain-relief

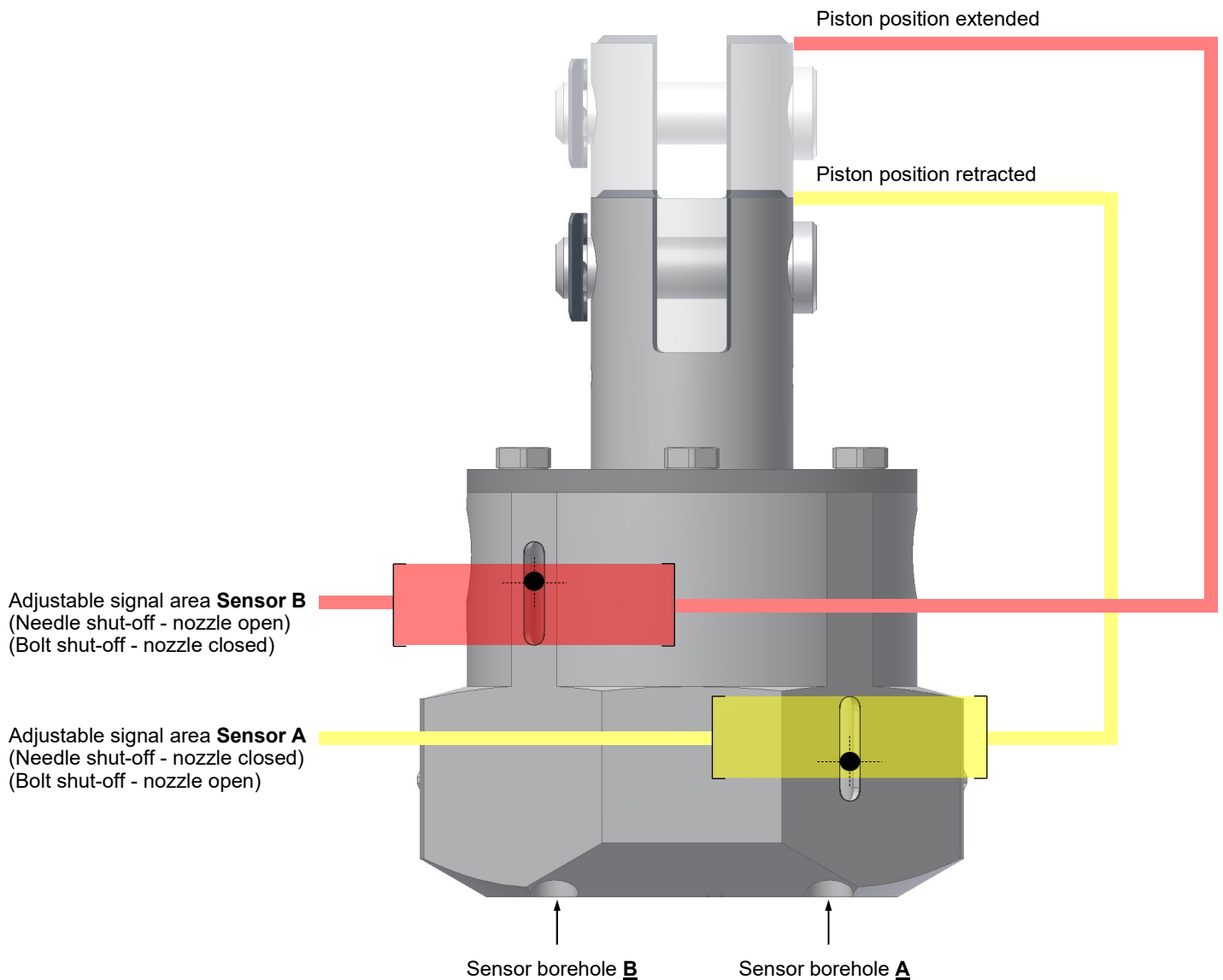
Example:

Sensor cable attached with cable ties to the cylinder supply.

Adjusting

Preparation (also see pages 2 and 3):

- Cylinder must be mounted on the shut-off nozzle.
(The piston's end position is influenced by the shut-off mechanism)
- Sensors should be loosely fitted with washer and screws in the cylinder.
- Assemble sensor cable, signal amplifier and connection cable, and connect to the machine control. The green LED (power) should light.



Borehole A) → piston position retracted

1. Make sure piston is fully retracted
2. Pull back sensor (with screw) until end of slot
3. Push sensor slowly into borehole
4. When a signal is received; **insert sensor 2-3 mm further**
5. Fix sensor in place with screw

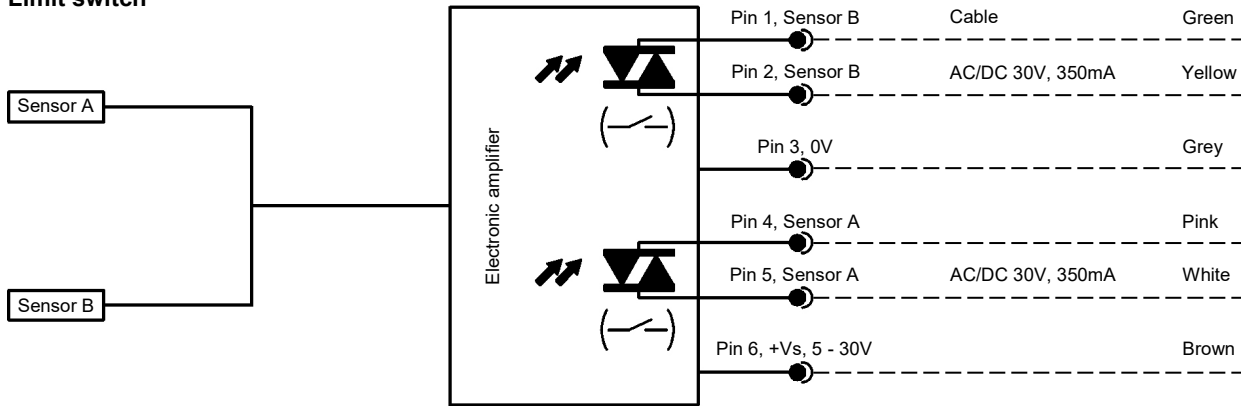
Borehole B) → piston position extended

1. Make sure piston is fully extended
2. Insert the sensor (with screw) as far as possible
3. Pull back the sensor slowly
4. When a signal is received; **retract sensor 2-3 mm further**
5. Fix sensor in place with screw

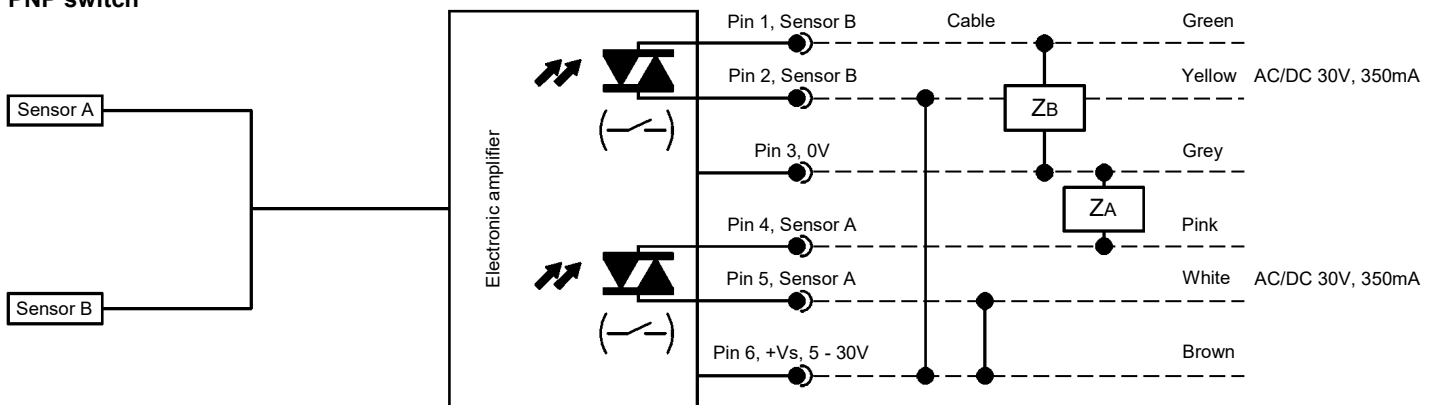
Sensor connectivity / schematic

Because of universal connectivity, the Sensor can be used in conjunction with all types of standard control systems.

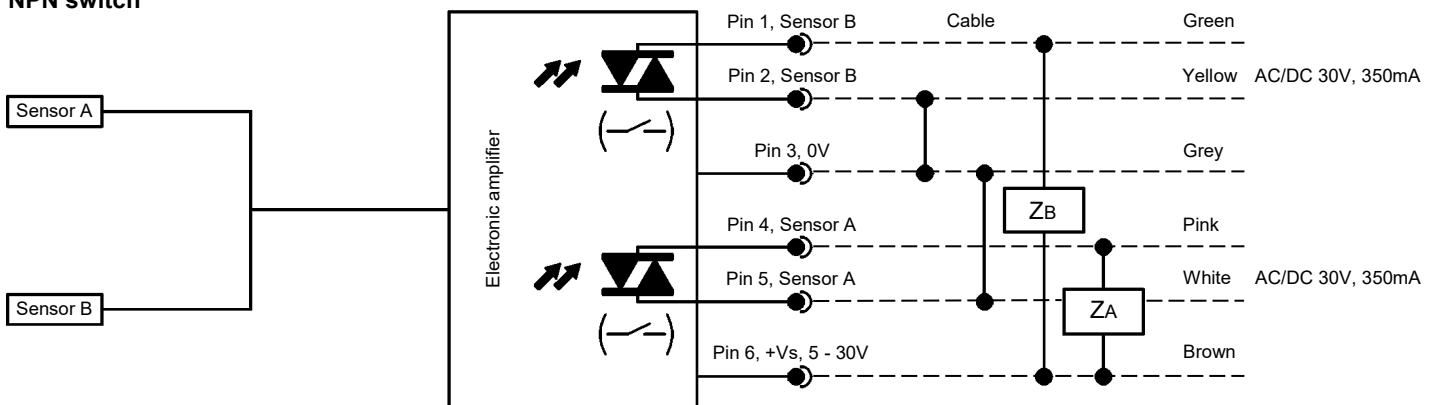
Limit switch



PNP switch



NPN switch



Part list



Pos. 1	Pos. 2	Pos. 3	Pos.4	Pos. 5
Screw M3	Spring washer M3	Hall sensor with cable	Amplifier	Connection cable

Conformity



The manufacturer confirms conformity with all the European Union (EU) Directives relating to this product. The CE marking must therefore be seen as proof of conformity with the Directives and has an official status, directed at the supervisor authorities in charge.

Following pertinent EC Directives:

- Low-voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC

Errors - Warning signs - Trouble shooting

Error	Action	Possible cause	Solution
Red does not light	Adjust sensor axially until red lights	Sensor not in the correct position	Re-position sensor in the correct position
Red lights but no signal at the machine	Check contacts on machine-side connector	Interrupted signal transmission	Pin assignment on machine-side connector acc. to schematic
Green does not light	Check contacts	Electrical current broken	Pin assignment on machine-side connector acc. to schematic
Green does not light	Remove sensor cable from amplifier	If green lights, the sensor is defective	Replace sensor
Green does not light	Remove sensor cable from amplifier	If green does NOT light, the amplifier is defective	Replace amplifier