

Force sensor for measuring injection pressure of injection molding machines



Compression force transducer

XC-170

Load cell with flat design up to 3.000 kN
customizable

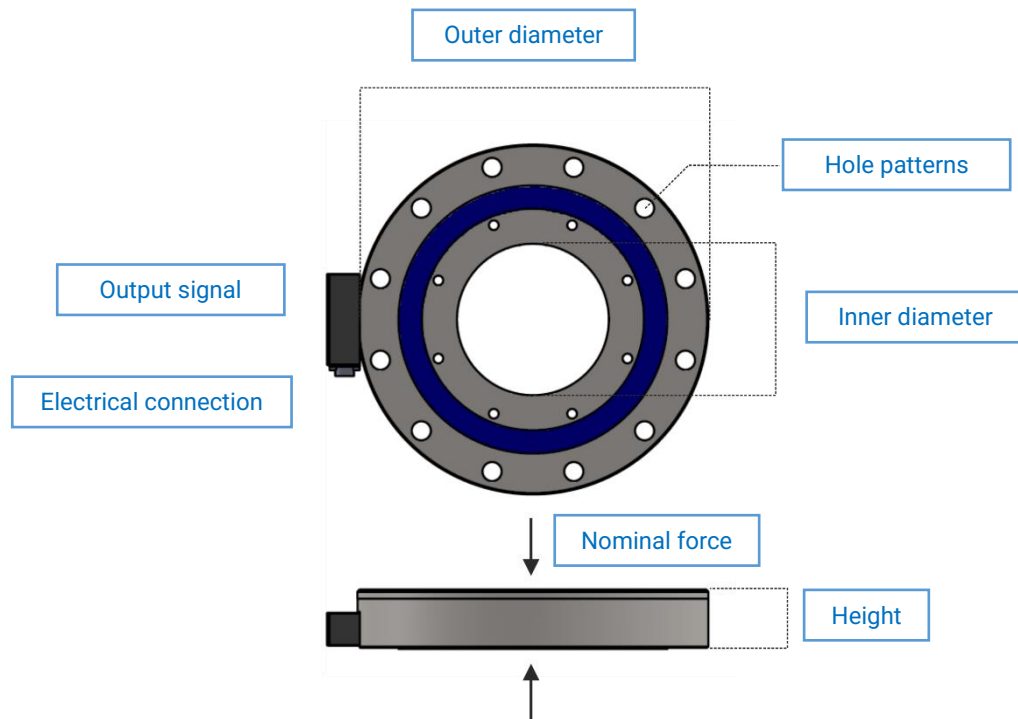
Features

- Very high linearity and zero stability
- High temperature stability
- Flat, compact design
- Suitable for high torques
- Customizable to different machine types
- Specific measuring ranges and dimensions available

Application

The force sensors of the XC-170 series measure the injection pressure in fully electric injection molding machines behind the mixing screw. The sensor is very linear, has a very stable zero-point and an overload resistance of 150% of the final value. The massive steel construction and the sealed design (IP 54) guarantee trouble-free operation, even under harsh environmental conditions. The sensors are very temperature stable and allow a maximum consistency of the shot weight.

The force sensors have either a passive strain gauge full bridge output or an amplified ± 10 V or 4 ... 20 mA output signal. The measuring range can be adjusted exactly to the required injection force. The dimensions and the hole pattern can also be tailored to your application and the required force range.



Individually developed sensors adapted to your task:

In order to obtain reliable measurement results, it is often unavoidable to adapt the force sensors and force transducers to the specific requirements in order to best meet the environment and the measuring task. Tell us your requirements for the force sensor XC-170:

Type / Description
 Nominal force
 Output signal
 Electrical connection (cable length / plug type)
 Outer diameter
 Inner diameter
 Height
 Mounting holes

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Specifications

Performance

Measuring range	50 - 3.000 kN
Sensitivity / Output signal	+ 1.3 mV/V ± 10 V 4-20 mA
Linearity	< 0.3 % from full-scale
Hysteresis	< 0.3 % from full-scale
Repeatability	< 0.1 % from full-scale
Temperature influence on final value	± 0.02 % FS / 10 K
Temperature influence on zero point	± 0.01 % FS / 10 K

Electrical data

Power supply	5 ... 15 VDC (without amplifier) 18 ... 30 VDC (with amplifier)
Sensitivity / Output signal	+ 1.3 mV/V ± 10 V 4-20 mA
Cut-off frequency	2000 Hz

Materials

Housing	1.7225, hardened
Expansion coefficient sensor material	11.6x10 ⁻⁶ ppm/°C
Encapsulating material	PUR

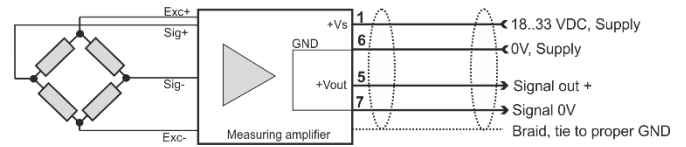
Mechanical data

Dimensions	Individually according requirements
Overload	150 % from full-scale
Wechselastfestigkeit (100 %)	60 million cycles
Electrical connection	Individually according requirements

Environmental data

Storage temperature	-40 ... 85 ° C
Compensated temperature range	20 ... 80 ° C
Ambient temperature	0 ... 80 ° C
Protection rate	IP 54

Wiring



Ordering code

The force transducer is supplied without a calibration certificate.
Calibration certificate available on request.

For detailed ordering information, see page 2.

Definition of accuracy

The accuracy includes the following parameters:

1. Linearity and Repeatability

The linearity and hysteresis specifies the measurement deviation in reference to the ideal BFSL-characteristic curve. This maximum measurement error is given in reference to the full scale value. This means that an accuracy of 0.5% FS at a force transducer with a measuring range of 0 ... 600 kN corresponds to a maximum measuring deviation of only 3 kN over the entire measuring range.
