

## Position Transducer with return spring, non-contacting

Series FTI 10



### Special features

- long service to non-contact measuring system
- excellent linearity up to  $\pm 0.1\%$
- reliable signal transmission through standardized current output
- robust due to completely encapsulated housing
- temperature-resistant
- precision due to supplementary regulating winding

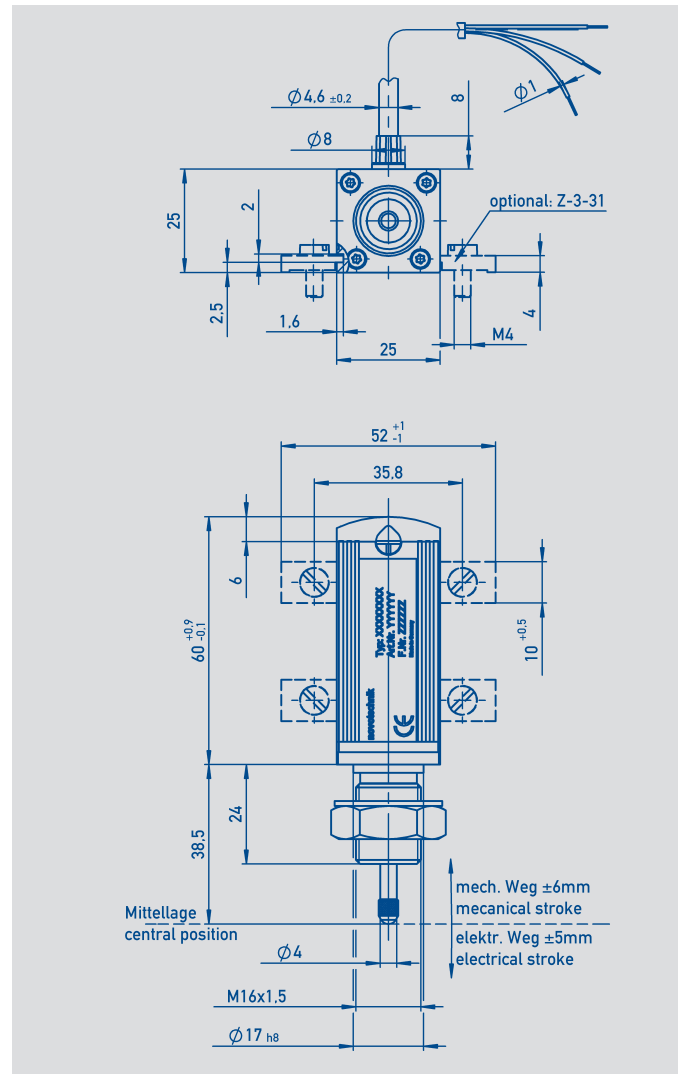
The inductive precision sensor FTI is used to transform short linear travel paths into analogue electrical signals using a differential transformer with a movable core.

The core is located on a gauging pin which is pressed against the measured object by an integrated spring. The sensor is supplied with direct voltage from which an integrated oscillator generates an alternating voltage to feed the differential transformer.

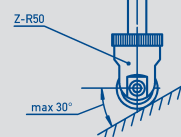
The secondary transformer voltages are rectified in a built-in demodulator. The oscillator and demodulator are designed using hybrid technology. The output current is strictly proportional to the displacement of the core and therefore to the measured path.

The non-contact sensors are virtually maintenance- and wear-free and boast a perfect reproducibility, resolution and linearity. The exchange can take place without recalibration. Magnetic fields have no effect on the measured signal.

The precision sensor is available in protection class IP50 and IP67 and due to its completely encapsulated housing and temperature compensating properties of its control-loop coil, it can be used under rough environmental operating conditions.



Optionales Zubehör: Tastrolle  
Optional accessories: roller head



Anschlußbelegung  
terminal diagram



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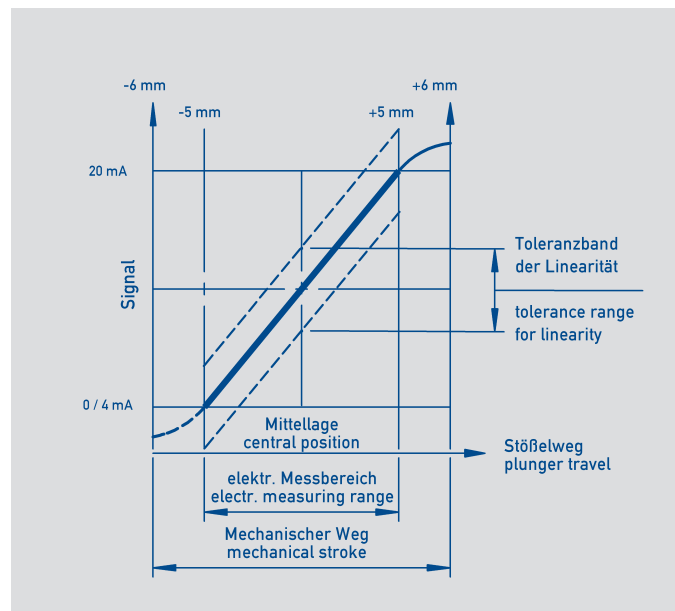
Description		
Housing	anodized aluminium	
Plunger	stainless antimagnetic steel. Is pressed into its end position by a compression spring. Plunger with antirotation element.	
Gauging head	stainless steel with external thread M 2.5 and pressed-steel ball	
Bearing	maintenance-free plastic bearing	
Fixture	by means of centering collar with M 16 x 1.5 thread or with mounting clamps on the slot	
Connection	flexible shielded 3-core cable appr. 2 meter long cable outgoing on side	
Electronic circuitry	hybrid circuit	
Reverse polarity protection	yes	
Electrical data		
Electrically defined measurement range	10 (symmetrically within the mech. range)	mm
Absolute linearity (related to the electrical centre)	± 0.2 ± 0.4 ± 0.1	% F.S.
Signal output	4 ... 20 (burden ≤ 500 Ω) 0 ... 20 (burden ≤ 500 Ω)	mA
Repeatability (typical)	≤ 2	µm
Hysteresis (typical)	≥ 10	µm
Dynamic (typical)	< 250	Hz
Supply voltage	18 ... 30	VDC
Max. current consumption	≤ 50	mA
Temperature coefficient of centre range of sensitivity	< 100	ppm/K
Max. permissible voltage between the output terminals and housing	100	VDC
Dielectric strength (50 Hz, 500 VAC)	≤ 100	µA
Environmental data		
Temperature range	-25...+70	°C
Frequency of operation	≤ 10	Hz
Shock	50 11	g ms
Protection class DIN EN 60529	IP 50, IP 67	
Mechanical data		
Dimensions	see drawing	
Mechanical range	12	mm
Required measuring force		N
a) with IP 50 (standard)	4	
b) with IP 67 (optional)	10	
Permissible tightening torque at the clamping flange	25	Nm
Mechanical life (restricted by oblique application)	100 x 10 <sup>6</sup>	movem.
Total weight (excluding cable)	90	g

#### Included in delivery

1 hexagon nut M16x1.5  
 ISO 8675,  
 1 lock washer J 16,5 DIN 6797

#### Optional accessories

Z-FT1-B01 (4 mounting clamps Z-3-31 incl. 4 cylinder screws M4x10), P/N 059010;  
 Roller head Z-R50, P/N 005678.



#### Order designations

Type	Linearity in ± %	Protection class	Current output in mA	Art.-No.
FTI-10-1-50-4-K1	0,1	IP 50	4...20	053101
FTI-10-1-67-4-K1	0,1	IP 67	4...20	053103
FTI-10-1-50-0-K1	0,1	IP 50	0...20	053105
FTI-10-1-67-0-K1	0,1	IP 67	0...20	053107
FTI-10-2-50-4-K1	0,2	IP 50	4...20	053100
FTI-10-2-67-4-K1	0,2	IP 67	4...20	053102
FTI-10-2-50-0-K1	0,2	IP 50	0...20	053104
FTI-10-2-67-0-K1	0,2	IP 67	0...20	053106
FTI-10 4-50-4-K1	0,4	IP 50	4...20	053110
FTI-10 4-67-4-K1	0,4	IP 67	4...20	053112
FTI-10 4-50-0-K1	0,4	IP 50	0...20	053114
FTI-10 4-67-0-K1	0,4	IP 67	0...20	053116