Special features
• noncontacting inductive technology provides ultra-long life
• high precision - linearity of up to ±0.1%
• powered by +24 VDC
• standard 4-20 mA or 0-20 mA output provides reliable signal transmission
• resistant to changes in temperature due to special regulating winding
• complete electrical interchangeability
• environmentally sealed to IP67 or IP50

Position Transducer with return spring, non-contacting
Series FTI 10

FTI inductive precision sensors transform linear displacement into an analog output signal. A differential transformer in the compact housing is equipped with a moveable core.

The moveable core is attached to the sensor’s input shaft. The input shaft is equipped with a return spring and tipped with a gauging head.

The 24 VDC input power feeds an integrated oscillator, which provides an AC signal to a differential transformer.

The voltages induced in the secondary windings of the transformer are dependent upon the position of the moveable core. These voltages are further processed by hybrid technology. The resulting current output is proportional to the physical position of the FTI’s input shaft.

Standardized output signals and absolute linearity (up to ±0.1 %) guarantee a highly accurate measurement value and complete electrical interchangeability.

The FTI can be used under rough environmental conditions, due to its temperature compensation system and completely encapsulated housing. The FTI is sealed to either IP50 or IP67.

Optional roller-head is available on request.
Included in delivery
1 hexagon nut M16x1.5
ISO 8675,
1 lock washer J 16,5 DIN 6797

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

**Description**

### Housing
- Anodized aluminum

### Input Shaft
- Stainless antimagnetic steel, with return spring and anti-rotation feature.

### Gauging head
- Stainless steel with external thread M 2.5 and pressed steel ball

### Bearing
- Maintenance-free plastic bearing

### Fixture
- Centering collar with M 16 x 1.5 thread or with mounting clamps on the slot

### Connection
- Flexible shielded 3-core cable approx. 2 meter long, exits housing on side.

### Electronic circuitry
- Hybrid circuit

### Reverse polarity protection
- Yes

### Electrical data

- **Electrical defined measurement range**: 10 mm
- **Absolute linearity**: ± 0.2 % F.S. (symmetrically within the mech. range) ± 0.4 ± 0.1
- **Signal output**: 4 ... 20 mA (load < 500 Ω) 0 ... 20 mA (load < 500 Ω)
- **Repeatability (typical)**: ± 2 μm
- **Hysteresis (typical)**: ± 10 μm
- **Dynamic (typical)**: ≤ 250 Hz
- **Supply voltage**: 18 ... 30 VDC
- **Max. current consumption**: ≤ 52 mA
- **Temperature coefficient of center range of sensitivity**: ≤ 100 ppm/K
- **Max. permissible voltage between the output terminals and housing**: 100 VDC
- **Dielectric strength**: ≤ 100 μA

### Environmental data

- **Temperature range**: -25 ... +70 °C
- **Frequency of operation**: < 10 Hz
- **Shock**: 50 g 11 ms
- **Protection class**: DIN EN 60529 IP 50, IP 67

### Mechanical data

- **Dimensions**: see drawing
- **Mechanical range**: 12 mm
- **Required measuring force**
  - a) with IP 50 (standard): 4 N
  - b) with IP 67 (optional): 10 N
- **Permissible tightening torque at the clamping flange**: 25 Nm
- **Mechanical life (affected by radial shaft loading)**: 100 x 10⁶ movements
- **Total weight (excluding cable)**: 90 g

### Order designations

<table>
<thead>
<tr>
<th>Type</th>
<th>Linearity in ± %</th>
<th>Protection class</th>
<th>Current output in mA</th>
<th>P/N</th>
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