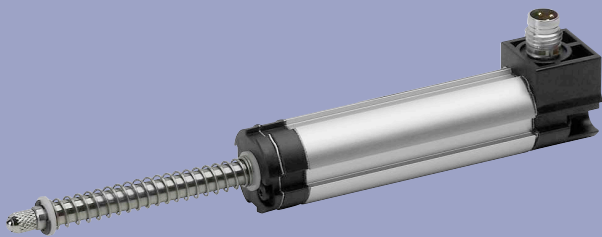


**Position Transducer  
with return spring  
potentiometric  
up to 200 mm, IP54**

Series TEX



**Special features**

- Position transducer with return spring
- outstanding linearity up to  $\pm 0.05\%$
- resolution better than 0.01 mm
- very long life - up to 50 million movements (application dependent)
- compact dimensions
- protection class IP54
- threaded shaft allows customer-defined mechanical interfaces
- compatible to standard probe tips
- cable or connector versions available

This cost effective transducer is characterized by its various mounting options and compact dimensions. Flexible mounting clamps or central mounting allow easy mounting under various conditions.

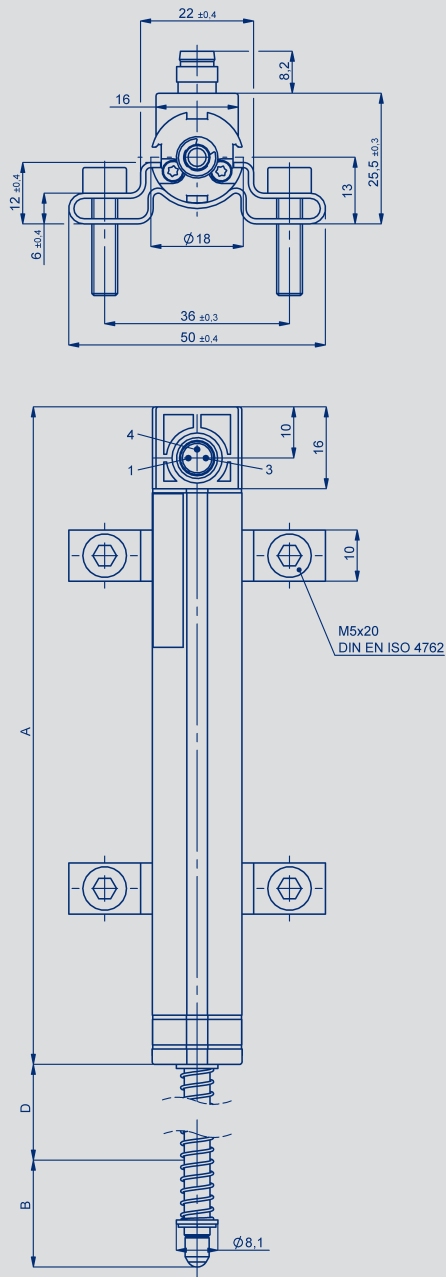
Typical applications are linear position measurements for process control and display, and the test lab environment.

The return spring design allows a direct measurement without a fixed connection to the moving part.

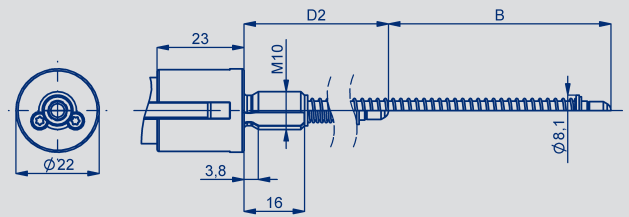
The electrical connection is provided by an M8 connector or a cable, which exits either radially or axially from the housing.

For transducers without return spring and pivot head mounting, please see separate data sheets.

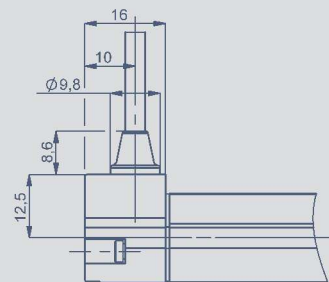
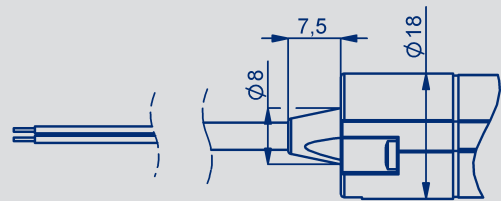
| Description            |  |
|------------------------|--|
| Housing                | aluminium, anodized  |
| Mounting               | see drawing  |
| Actuating rod          | stainless steel (1.4305), rotatable.<br>Probe tip stainless steel with external thread M2.5 and pressed-in hardened metal ball |
| Bearings               | sleeve bearing   |
| Resistance element     | conductive plastic   |
| Wiper assembly         | precious metal multi-finger wiper  |
| Electrical connections | 3-pin round connector M8x1<br>3-wire PUR-cable, 3x0.14 mm <sup>2</sup> , shielded, 2 m or 5 m length                           |



Central mounting style



Tightening torque max. 5 Nm



| Type designations   | TEX<br>0010                            | TEX<br>0025 | TEX<br>0050 | TEX<br>0075 | TEX<br>0100 | TEX<br>0125 | TEX<br>0150 | TEX<br>0175 | TEX<br>0200 |               |
|---|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| <b>Electrical Data</b>  |  |             |             |             |             |             |             |             |             |               |
| Defined electrical range  | 10                                     | 25          | 50          | 75          | 100         | 125         | 150         | 175         | 200         | mm            |
| Electrical range  | 12                                     | 27          | 52          | 77          | 102         | 130         | 155         | 180         | 205         | mm            |
| Nominal resistance  | 1                                      | 1           | 2           | 3           | 4           | 5           | 6           | 7           | 8           | kΩ            |
| Resistance tolerance  | 20                                     |             |             |             |             |             |             |             |             | ±%            |
| Independent linearity   | 0.25                                   | 0.2         | 0.1         | 0.1         | 0.1         | 0.05        | 0.05        | 0.05        | 0.05        | ±%            |
| Repeatability   | 0.01 (without side loads)              |             |             |             |             |             |             |             |             | mm            |
| Recommended operating wiper current   | ≤ 1                                    |             |             |             |             |             |             |             |             | μA            |
| Maximum wiper current<br>(in case of malfunction)                           | 10                                     |             |             |             |             |             |             |             |             | mA            |
| Maximum permissible applied voltage   | 42                                     |             |             |             |             |             |             |             |             | V             |
| Effective temperature coefficient of the<br>output-to-applied voltage ratio | typical 5                              |             |             |             |             |             |             |             |             | ppm/K         |
| Insulation resistance (500 DC)  | ≥ 10                                   |             |             |             |             |             |             |             |             | MΩ            |
| Dielectric strength (500 VAC, 50 Hz)  | ≤ 100                                  |             |             |             |             |             |             |             |             | μA            |
| <b>Mechanical Data</b>  |  |             |             |             |             |             |             |             |             |               |
| Body length (dimension A)   | 63                                     | 78          | 103         | 128         | 153         | 194         | 219         | 244         | 269         | ±2 mm         |
| Mechanical stroke (dimension B)   | 14                                     | 29          | 54          | 79          | 104         | 132         | 157         | 182         | 207         | ±2 mm         |
| Dimension D   | 25                                     | 25          | 50          | 75          | 95          | 98          | 105         | 113         | 121         | ±2 mm         |
| Dimension D2  | 41                                     | 41          | 50          | 75          | 95          | 98          | 105         |             |             | ±2 mm         |
| Weight approx.<br>cable version TEX-___-42_-002-202                         | 80                                     | 85          | 95          | 105         | 115         | 155         | 165         | 175         | 185         | g             |
| connector version TEX-___-42_-002-101                                       | 50                                     | 55          | 65          | 75          | 85          | 125         | 135         | 145         | 155         | g             |
| additional weight central mounting  | 10                                     |             |             |             |             |             |             |             |             | g             |
| Operating force horizontal  | 5.6 (at RT 20° C)                      |             |             |             |             |             |             |             |             | ±0.8 N        |
| Operating frequency max.<br>in center position                              | 49                                     | 43          | 35          | 28          | 24          | 21          | 20          | 20          | 20          | ±2 mm         |
| <b>Environmental Data</b>   |  |             |             |             |             |             |             |             |             |               |
| Temperature range   | -40 ... +85                            |             |             |             |             |             |             |             |             | °C            |
| Operating humidity range  | 0 ... 95 (no condensation)             |             |             |             |             |             |             |             |             | % R.H.        |
| Vibration   | 5...2000<br>Amax = 0.75<br>amax = 20 g |             |             |             |             |             |             |             |             | Hz<br>mm<br>g |
| Shock   | 50<br>6                                |             |             |             |             |             |             |             |             | g<br>ms       |
| Life  | > 50 x 10 <sup>6</sup> typ.            |             |             |             |             |             |             |             |             | movements     |
| Operating speed   | 5                                      |             |             |             |             |             |             |             |             | m/s max.      |
| Protection class  | IP54 DIN EN 60529                      |             |             |             |             |             |             |             |             |               |

### Ordering specifications

**Electrical version**  
002: linearized (standard)

**Electrical connection**  
101: 3-pin round connector M8x1, radial output  
202: NT standard cable 2 m, radial output  
205: NT standard cable 5 m, radial output  
302: NT standard cable 2 m, axial output  
305: NT standard cable 5 m, axial output

**Mechanical mounting**  
1: Fixing clamps  
8: Central mounting M10 with collar - up to 0150 mm stroke

**Mechanical version actuating rod\_2\_**  
2: Transducer with return spring and probe tip

**Protection class**  
4: one-side actuating rod

**Electrical defined range**  
Standard lengths 0010 up to 200 mm

**Series**

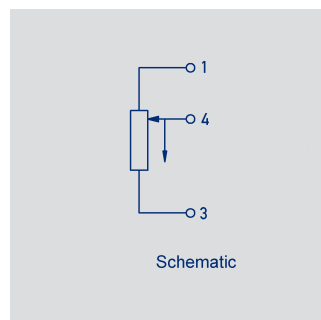
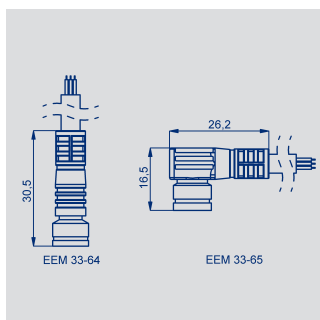
**T E X - 0 1 5 0 - 4 2 1 - 0 2 - 2 0 2**

### Mounting instructions

A ball coupling is recommended for backlash-free and side load-free operation to compensate parallel or angular errors between transducer axis and the direction of movement.

### Important

All values specified in this data sheet for linearity, lifetime and temperature coefficient are only valid for a sensor used as a voltage divider with virtually no load applied to the wiper ( $\leq 1 \mu A$ ).



| Output connector<br>Code 101 | Cable<br>Code 202, 205<br>302, 305 | Connector with cable                    |
|------------------------------|------------------------------------|---|
|                              |                                    | EEM 33-64 / -66 / -68 / -65 / -67 / -69 |
| PIN 1                        | BN brown                           | BN brown                                |
| PIN 4                        | WH white                           | BK black                                |
| PIN 3                        | GN gren                            | BU blue                                 |

### Optional accessories

Cable set - PUR cable with straight 3-pin mating connector - M8x1, 3x0.34 mm<sup>2</sup>, IP67, unshielded  
2 m length, EEM-33-64, P/N 005617  
5 m length, EEM-33-66, P/N 005619  
10 m length, EEM-33-68, P/N 005643.  
Cable set - PUR cable with 90° angle 3-pin mating connector - M8x1, 3x0.34 mm<sup>2</sup>, IP67, unshielded  
2 m length, EEM-33-65, P/N 005618  
5 m length, EEM-33-67, P/N 005620  
10 m length, EEM-33-69, P/N 005644.  
Other cable on request.  
MAP - process control measurement/display device  
MUP/MUK signal conditioners  $\pm 24$  V supply, 0-10 V or 4-20 / 0-20 mA current outputs.

### Included in delivery

Clamp mounting: 2 clamps  
incl. 4 cylinder head screws M5x20.

