



SENSORES E  
INSTRUMENTACION  
GUEMISA S.L.

NIF: B-87969416

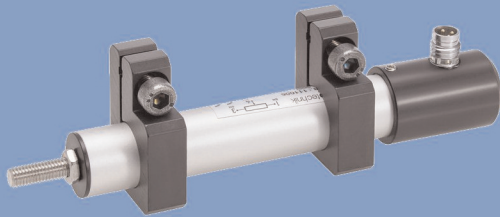
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**novotechnik**  
Siedle Gruppe

## Position Transducers with mounting clamps potentiometric up to 300 mm, IP67

Series TX2



### Special features

- compact dimensions  
Ø 16 mm
- protection class IP67
- very long life (depending on application) up to 50 million movements
- resolution better than 0.01 mm
- outstanding linearity up to  $\pm 0.05\%$
- suitable for harsh environmental conditions (humidity, oil, dust)
- cable or connector version available

High protection class and very compact dimensions characterize this cost effective transducer.

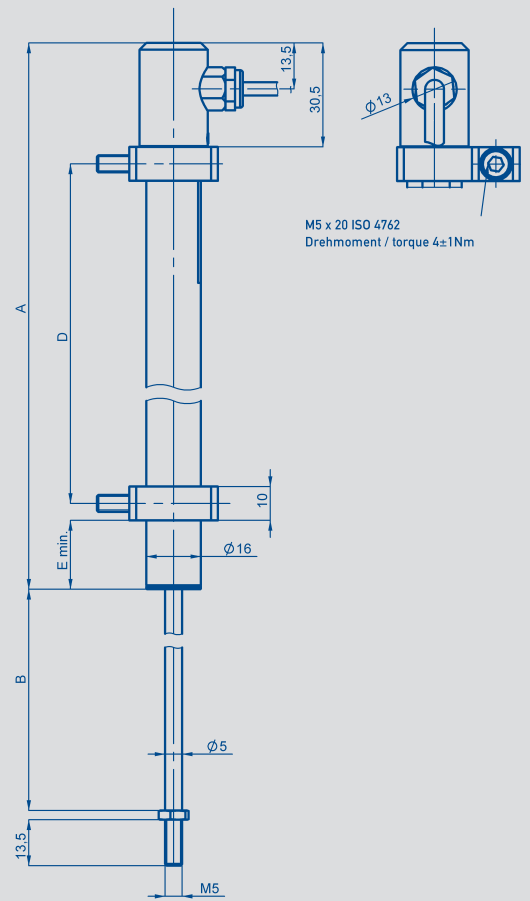
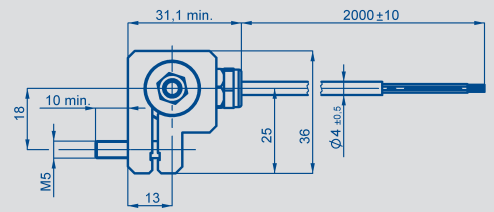
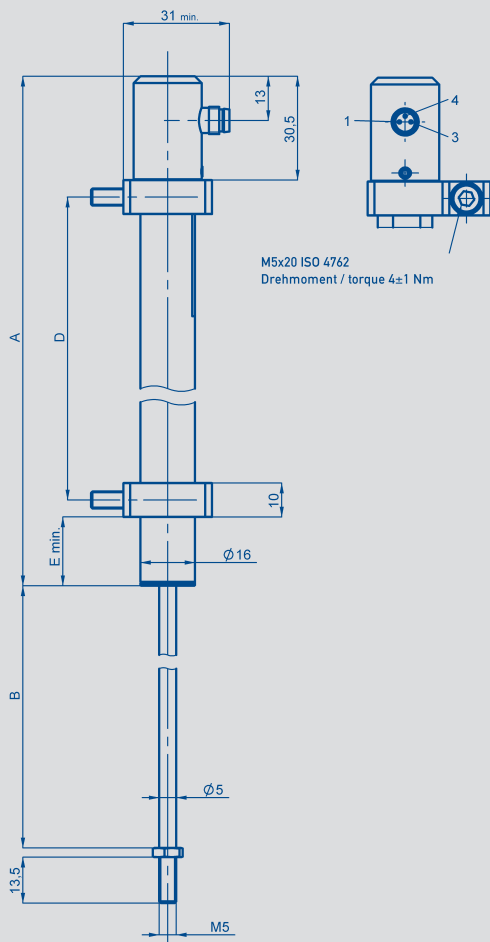
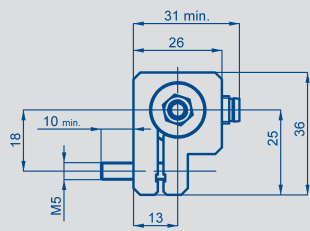
The heavy-duty design with metal flanges and double sealed actuating rod allows a variety of applications even under adverse conditions like e.g. dirt, dust and humidity.

The adjustable fixing via mounting clamps makes a variable and simple mounting of the sensor possible, particularly for industrial applications.

The electrical connection can be made via a radial plug connector or a radial cable.

For transducers with or without return spring and mounting clamp, bushing mount or flange plates, please see separate data sheets TEX.

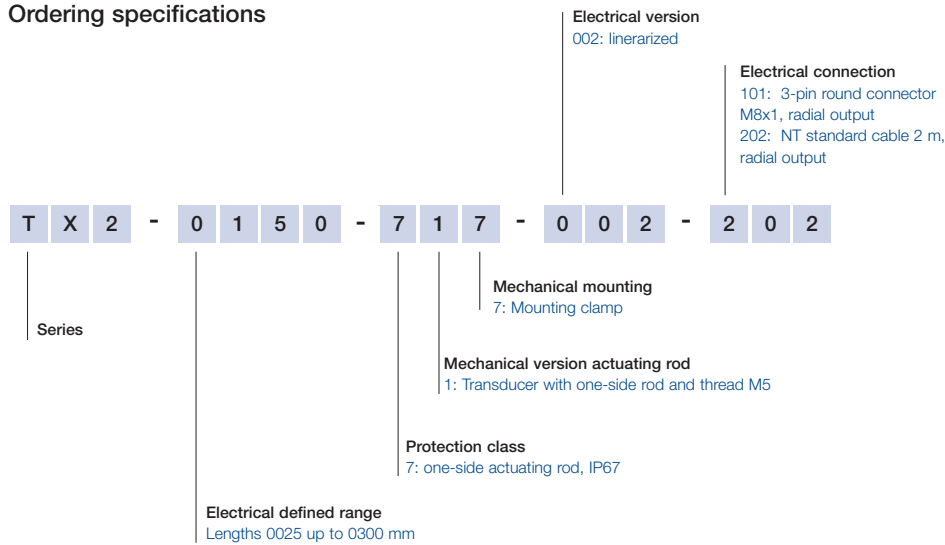
| Description            |                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------|
| Housing                | aluminium, anodized                                                                           |
| Mounting               | see drawing                                                                                   |
| Actuating rod          | stainless steel (1.4305), rotatable, external thread M5                                       |
| Bearings               | sintered bronze bush                                                                          |
| Resistance element     | conductive plastic                                                                            |
| Wiper assembly         | precious metal multi-finger wiper                                                             |
| Electrical connections | 3-pin round connector M8x1<br>4-wire PUR-cable, 4x0.14 mm <sup>2</sup> , shielded, 2 m length |



| Type designations                                                        | TX2<br>0025                                                                                                                                                                                                                                                                                                                                | TX2<br>0050 | TX2<br>0075 | TX2<br>0100 | TX2<br>0150 | TX2<br>0200 | TX2<br>0250 | TX2<br>0300 |               |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| <b>Electrical Data</b>                                                   |                                                                                                                                                                                                                                                                                                                                            |             |             |             |             |             |             |             |               |
| Defined electrical range                                                 | 25                                                                                                                                                                                                                                                                                                                                         | 50          | 75          | 100         | 150         | 200         | 250         | 300         | mm            |
| Electrical range                                                         | 27                                                                                                                                                                                                                                                                                                                                         | 52          | 77          | 102         | 155         | 205         | 255         | 305         | mm            |
| Nominal resistance                                                       | 1                                                                                                                                                                                                                                                                                                                                          | 2           | 3           | 4           | 6           | 8           | 10          | 12          | kΩ            |
| Resistance tolerance                                                     | 20                                                                                                                                                                                                                                                                                                                                         |             |             |             |             |             |             |             | ±%            |
| Independent linearity                                                    | 0.2                                                                                                                                                                                                                                                                                                                                        | 0.1         | 0.1         | 0.1         | 0.05        | 0.05        | 0.05        | 0.05        | ±%            |
| Repeatability                                                            | 0.01                                                                                                                                                                                                                                                                                                                                       |             |             |             |             |             |             |             | mm            |
| Recommended operating wiper current                                      | ≤ 1                                                                                                                                                                                                                                                                                                                                        |             |             |             |             |             |             |             | μA            |
| Max. wiper current in case of malfunction                                | 10                                                                                                                                                                                                                                                                                                                                         |             |             |             |             |             |             |             | mA            |
| Max. permissible applied voltage                                         | 42                                                                                                                                                                                                                                                                                                                                         |             |             |             |             |             |             |             | V             |
| Effective temperature coefficient of the output-to-applied voltage ratio | typical 5                                                                                                                                                                                                                                                                                                                                  |             |             |             |             |             |             |             | ppm/K         |
| Insulation resistance (500 VDC)                                          | ≥10                                                                                                                                                                                                                                                                                                                                        |             |             |             |             |             |             |             | MΩ            |
| Dielectric strength (500 VAC, 50 Hz)                                     | ≤100                                                                                                                                                                                                                                                                                                                                       |             |             |             |             |             |             |             | μA            |
| <b>Mechanical Data</b>                                                   |                                                                                                                                                                                                                                                                                                                                            |             |             |             |             |             |             |             |               |
| Body length (dimension A)                                                | 86                                                                                                                                                                                                                                                                                                                                         | 111         | 136         | 161         | 224         | 274         | 324         | 374         | ±1 mm         |
| Mechanical stroke (dimension B)                                          | 30                                                                                                                                                                                                                                                                                                                                         | 55          | 80          | 105         | 158         | 208         | 258         | 308         | ±1 mm         |
| Recommended mounting clamp distance (dimension D)                        | 30                                                                                                                                                                                                                                                                                                                                         | 50          | 70          | 90          | 140         | 190         | 240         | 290         | mm            |
| E min. (dimension E)                                                     | 15                                                                                                                                                                                                                                                                                                                                         | 20          | 25          | 25          | 35          | 35          | 35          | 35          | mm            |
| Weight approx.<br>with connector (101)                                   | 100                                                                                                                                                                                                                                                                                                                                        | 110         | 120         | 130         | 150         | 163         | 190         | 205         | g             |
| with cable (202)                                                         | 120                                                                                                                                                                                                                                                                                                                                        | 156         | 160         | 177         | 190         | 225         | 250         | 270         | g             |
| Operating force<br>horizontal                                            |                                                                                                                                                                                                                                                                                                                                            |             |             |             |             |             |             |             |               |
| vertical                                                                 | < 5 (at RT 20° C)                                                                                                                                                                                                                                                                                                                          |             |             |             |             |             |             |             | N             |
| Tearing force                                                            | max. 15 (*)                                                                                                                                                                                                                                                                                                                                |             |             |             |             |             |             |             | N             |
| <b>Environmental Data</b>                                                |                                                                                                                                                                                                                                                                                                                                            |             |             |             |             |             |             |             |               |
| Temperature range                                                        | -40 ...+85 connector / -20 ...+100 cable                                                                                                                                                                                                                                                                                                   |             |             |             |             |             |             |             | °C            |
| Operating humidity range                                                 | 0 ... 95 (no condensation)                                                                                                                                                                                                                                                                                                                 |             |             |             |             |             |             |             | % R.H.        |
| Vibration                                                                | 5...2000<br>A <sub>max</sub> = 0.75<br>a <sub>max</sub> = 20                                                                                                                                                                                                                                                                               |             |             |             |             |             |             |             | 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                                                         | IP67 DIN EN 60529 (use connector with IP67 or higher)<br>The protection class IP67 was determined as fabricated condition under the following terms (DIN EN 60529):<br>1 m water depth, duration 0.5 h<br>Abrasion of rod sealing depends on application and cycles.<br>Please pay attention to the instruction manual before starting up. |             |             |             |             |             |             |             |               |

\*) Depending on the environmental temperature and standstill time, the necessary force for the initial operating of the push rod can increase.

## Ordering specifications

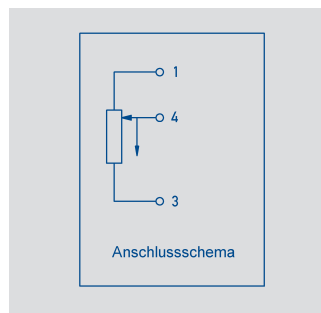
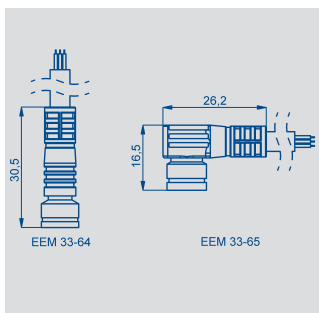


## Mounting Instructions

A ball coupling is recommended for backlash-free and side load-free operation to compensate misalignment between transducer axis and the moving part.

## 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 ( $I_e \leq 1 \mu A$ ).



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

## Optional accessories

PUR-cable with 3-pin female connector M8x1, 3x0.34 mm<sup>2</sup>, IP67, unshielded:

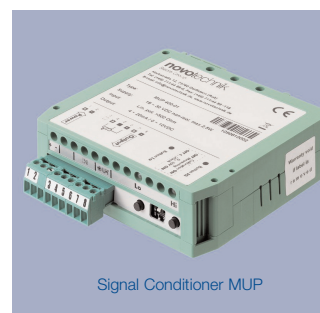
- 2 m length, EEM-33-64, P/N 005617
- 5 m length, EEM-33-66, P/N 005619
- 10 m length, EEM-33-68, P/N 005643.

PUR-cable with 3-pin angled female 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.

Ball coupling Z-301-M5/M5, P/N 058002,  
Pivot head Z-G01, P/N 056014.

Process-controlled indicators MAP... with display, Signal conditioner MUP.../ MUK... for current supply and standardized output signals.



## Included in delivery

2 mounting clamps incl. 2  
head cap screws M5x20