

**Position Transducers
Pivot head Mounting
potentiometric
up to 300 mm, IP67**

Series TX2



Special features

- compact dimensions
Ø 16 mm
- protection class IP67
- easy to assemble via low-backlash pivot heads with a large angle of freedom (up to $\pm 12,5^\circ$)
 - 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 plug connection optional

High protection class and very compact dimensions characterize this inexpensive transducer.

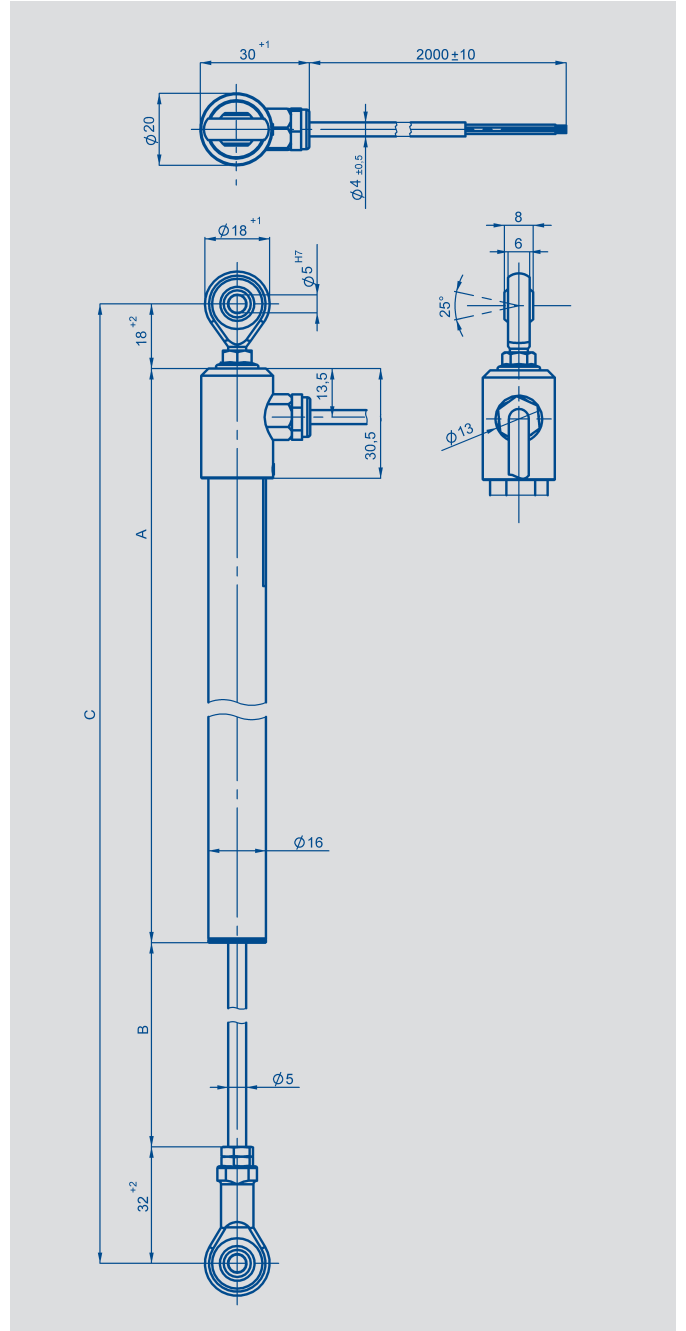
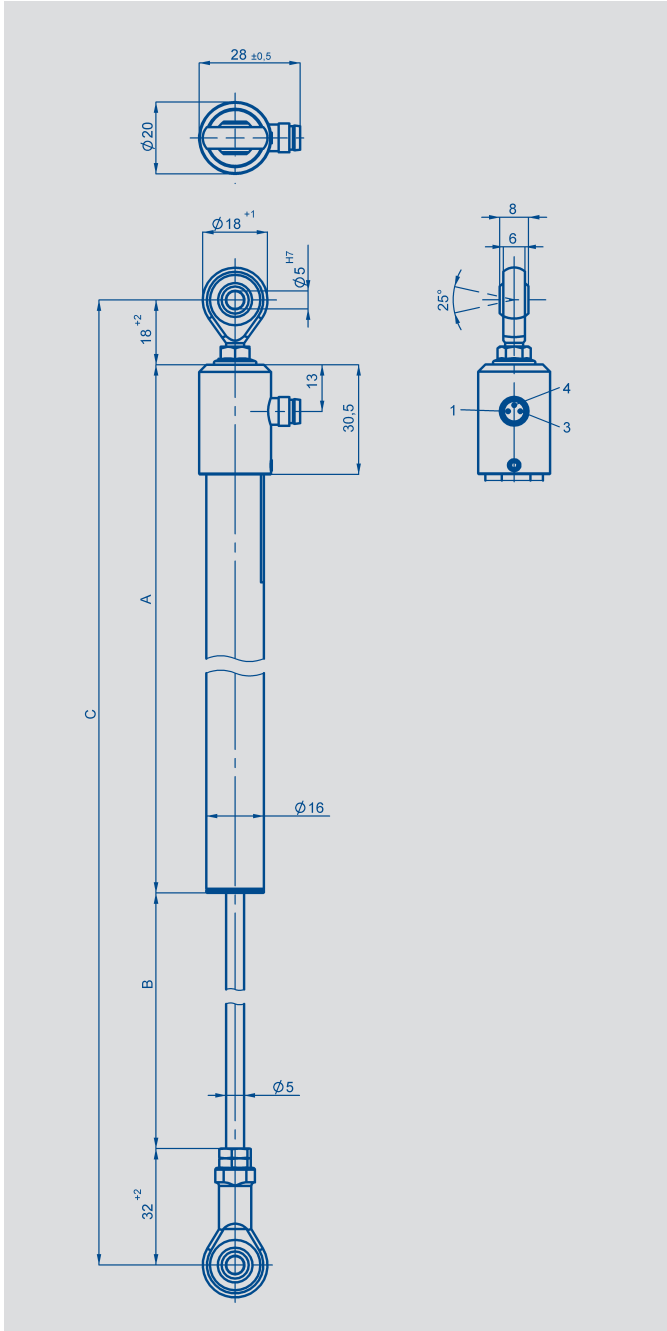
The heavy-duty design with metal flanges and double sealed actuating rod offers many fields of applications also under adverse conditions like e.g. dirt, dust and humidity.

Due to the user-friendly pivot heads this sensor is recommended especially for mobile applications.

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

Transducers with and without restoring spring and mounting clamp, central thread or flange plates see separate data sheets TEX.

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



Type designations	TX2 0025	TX2 0050	TX2 0075	TX2 0100	TX2 0150	TX2 0200	TX2 0250	TX2 0300	
Electrical Data									
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	k Ω
Resistance tolerance	20								\pm %
Independent linearity	0.2	0.1	0.1	0.1	0.05	0.05	0.05	0.05	\pm %
Repeatability	0.01								mm
Recommended operating wiper current	\leq 1								μ A
Max. wiper current in case of malfunction	10								mA
Max. permissible applied voltage	42								V
Effective temperature coefficient of the output-to-applied voltage ration	typical 5								ppm/K
Insulation resistance (500 VDC)	\geq 10								M Ω
Dielectric strength (500 VAC, 50 Hz)	\leq 100								μ A
Mechanical Data									
Body length (dimension A)	86	111	136	161	224	274	324	374	\pm 2 mm
Mechanical stroke (dimension B)	30	55	80	105	158	208	258	308	\pm 2 mm
Min. distance between pivot heads, nominal (dimension C)	136	161	186	211	274	324	374	424	mm
Weight approx. 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 horizontal									N
vertical	< 5 (at RT 20° C)								N
Tearing force	max. 15 (*)								N
Environmental Data									
Temperature range	-40 ...+85 connector / -20 ...+100 cable								$^{\circ}$ C
Operating humidity range	0 ... 95 (no condensation)								% R.H.
Vibration	5...2000 A_{max} = 0.75 a_{max} = 20								Hz mm g
Shock	50 6								g ms
Life	> 50 x 10 ⁶ typ.								movements
Operating speed	5								m/s max.
Protection class	IP67 DIN EN 60529 (use connector with IP67 or higher) The protection class IP67 was determined at new condition under the following terms (DIN EN 60529): 1 m water depth, duration 0.5 h Abrasion of rod sealing depends on application and cycles. 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

Electrical version
002: linearized

Electrical connection
101: 3-pin round connector M8x1, radial output
202: NT standard cable 2 m, radial output

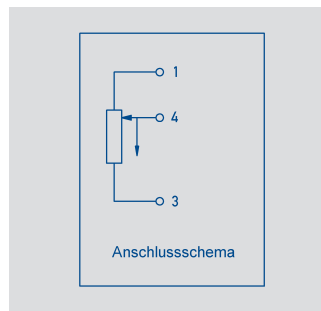
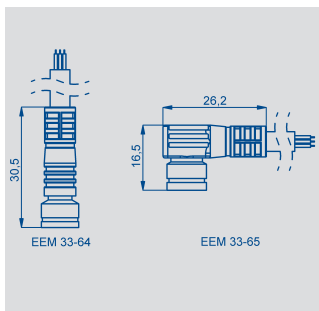
Series
T X 2 - 0 1 5 0 - 7 1 6 - 0 0 2 - 2 0 2

Mechanical mounting
6: Pivot heads

Mechanical version actuating rod
1: Transducer with one-side rod and thread M5

Protection class
7: one-side actuating rod, IP67

Electrical defined range
Standard lengths 0025 up to 0300 mm



Output connector Code 101	Cable Code 202	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 green	BU blue

Optional accessories

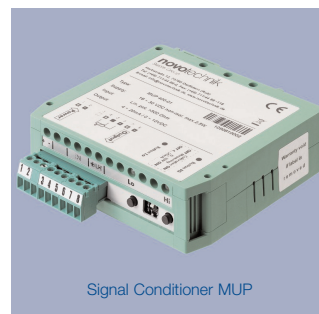
PUR-cable with 3-pin female connector M8x1, 3x0.34 mm², IP67, unshielded

- 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 mm², 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.

Process-controlled indicators MAP... with display, Signal conditioner MUP.../MUK... for current supply 24 V and standardized output signals.



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