

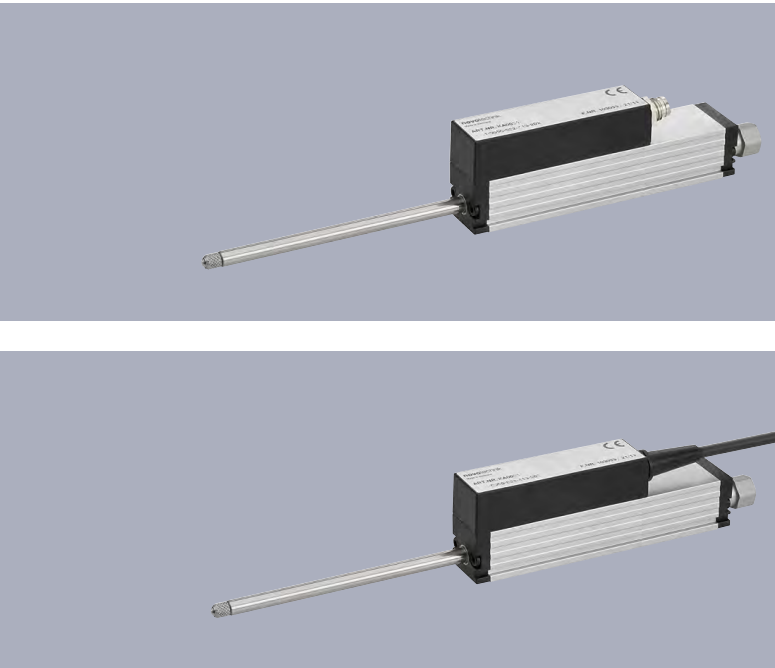


**GUEMISA**  
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Desde 1986 suministrando sensores e instrumentación  
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## Position Transducer potentiometric with Return Spring and integrated Signal Conditioner up to 100 mm

### Series TE1



A compact transducer with return spring on conductive plastic base with integrated signal processing. Designed for direct position measurement of fixed objects or contour scanning of moving objects by roller head.

The integrated signal processing simplifies the connection of the transducer considerably and provides a conditioned current or voltage signal.

Characteristic for the robust design of this compact transducer is the push rod, which is supported on both ends by metal glide bearings.

Therefore transverse forces can be absorbed, such as those in the scanning curves, wedge bars or wedge discs occur.

The actuation of the rod through automatic retreat facilities such as pneumatic cylinders or electromagnets is possible through the constructive design of the rear end stop on the rod.

Based on the potentiometric measuring principle, magnetic interferences have no influence on the displacement measurement.

#### Special features

- long life up to 100 million movements, depending on application
- outstanding linearity up to  $\pm 0.075\%$
- standard output signals current or voltage
- cable or connector version available
- compatible to standard probe tips
- double-sided supported actuating rod
- insensitive to shock and vibration

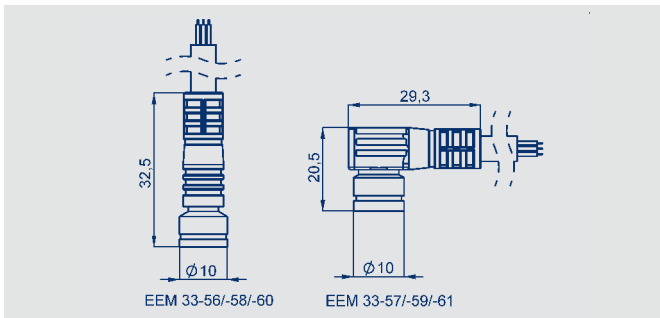
#### Description

Housing	aluminium, anodized
Mounting	adjustable clamps
Actuating rod	stainless steel AISI 303 , with anti-twist protection, internal thread M2.5x6
Probe tip	stainless steel with external thread M2.5 and pressed-in hardened metal ball
Bearings	both ends in DU bushings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper, elastomer-damped
Electrical connections	3-pin round connector, shielded, M8x1 3-wire PVC-cable, 3 x 0.14 mm <sup>2</sup> , shielded, 2 m length



Type designations	TE1-0025	TE1-0050	TE1-0075	TE1-0100	
<b>Mechanical Data</b>					
Body length (dimension A)	63	94.4	134.4	166	+1 mm
Mechanical stroke (dimension B)	30	55	80	105	±1.5 mm
Weight					
with cable	174	197	228	294	g
with plug	128	152	183	248	g
Operating force extended (horizontal)	≤ 2.5				N
Operating force retracted (horizontal)	≤ 5.0				N
Operating force to end stop	max. 5				N
Operating frequency max. (Data refer to critical application "probe tip upwords")	18	14	11	10	Hz
Max. permitted torque for fixing screws (with washer)	140				Ncm
<b>Electrical Data</b>					
Defined electrical range	25	50	75	100	mm
Independent linearity	0.2	0.15	0.1	0,075	± % FS
Absolute linearity	0,275	0,225	0,175	0,15	± % FS
Repeatability	0.002				mm
Resolution	unlimited				
Dynamic (electrical)	> 10				kHz
Tolerance of electr. zero point	typ. ±1.0				mm
Output signal voltage or current	0...10 V (allowed load > 10 kΩ, residual voltage < = 10 mV) 10...0 V (allowed load > 10 kΩ, residual voltage < = 10 mV) 4...20 mA (burden max. 500 Ω) 20...4 mA (burden max. 500 Ω)				
Short circuit protection	yes (vs. GND and Ub)				
Supply voltage Ub	16...30				V
Supply voltage ripple	max. 10				% Vss
Power drain without load	< 1				W
Temperature coefficient	< 20				ppm/K
Overvoltage protection	< 36 (permanent)				VDC
Polarity protection	yes, supply lines				
Insulation resistance (500 VDC)	≥ 10				MΩ
<b>Environmental Data</b>					
Temperature range	-40...+85				°C
Humidity range	0...95 (no condensation)				% RH
Vibration (IEC 60068-2-6)	20 (5...2000 Hz, Amax = 0,75 mm)				g
Shock (IEC 60068-2-27)	50 (11 ms) (single hit)				g
Protection class (DIN EN 60529)	IP40				
Life	> 100x10 <sup>6</sup>				movements
MTTF (ISO 13849-1, parts count method, w/o load)	25				years
Functional safety	When using our products in safety-related systems, please contact us				
EMC conformity	EN 61000-4-2 electrostatic discharges (ESD) 4 kV, 8 kV EN 61000-4-3 electromagnetic fields 10 V/m EN 61000-4-4 electrical fast transients (burst) 1 kV EN 61000-4-6 conducted disturbances, induced by RF fields 10 V/m eff. EN 55016-2-3 radiated disturbances class B				

\*) Better linearities on request



## Ordering specifications

Preferred types printed in bold

### Electrical Interface

4: Analog Interface

#### Output signal analog Interface 4 \_ \_

1: Voltage output

2: Current output

#### Analog Interface voltage output 41 \_

1: 0 V ... 10 V (extended rod = 0 V)

2: 10 V ... 0 V (extended rod = 10 V)

#### Analog Interface current output 42 \_

1: 4 mA ... 20 mA (extended rod = 4 mA)

2: 20 mA ... 4 mA (extended rod = 20 mA)

#### Electrical connection

101: connector M8x1, 3-pin, axial output

202: round cable, 3-pin, 2 m, shielded

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

Series

Electrical measuring range

Standard lengths  
from 0025 mm up to 0100 mm

Mechanical version

102: Position transducer with return spring

### Included in delivery

- 2 mounting clamps Z-45 inkl. 4 cylinder screws M4x10,
- 1 probe tip with pressed-in hardened metall ball

### Available on request

Customized length and electrical connection e.g. cable with connector

### Optional accessories

- 4 mounting clamps Z3-31 incl. 4 cylinder screws M4x10, P/N 059010
- Roller head Z-R50, P/N 005678
- PUR-cable with 3-pin female connector, M8x1, 3x0.25 mm<sup>2</sup>, shielded:
  - 2 m length, EEM 33-56, P/N 005602,
  - 5 m length, EEM 33-58, P/N 005604,
  - 10 m length, EEM 33-60, P/N 005606
- PUR-cable with 3-pin female angled connector, M8x1, 3x0,25 mm<sup>2</sup>, shielded;
  - 2 m length, EEM 33-57, P/N 005603,
  - 5 m length, EEM 33-59, P/N 005605,
  - 10 m length, EEM 33-61, P/N 005607