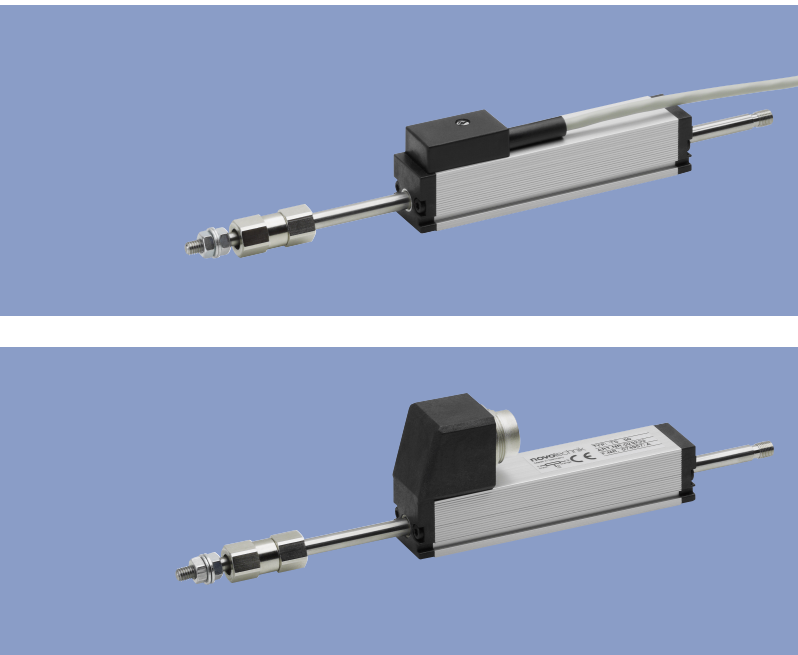


## Position Transducers 25,50,75,100,150 mm

### Series T, TS



#### Special features

- long life -  $100 \times 10^6$  movements
- outstanding linearity up to  $\pm 0.075\%$
- actuating rod with double bearing system
- special ball coupling eliminates sideways forces
- high operational speeds up to 10 m/s
- insensitive to shock and vibration
- cable or plug connection optional

Position transducers employing conductive plastic resistance and collector tracks for direct, precise measurement in control and regulation systems and in instrumentation.

Using this type of transducer, problems traditionally associated with rotary potentiometers, especially reliability, life expectancy, accuracy and operational speed, are overcome. Thus opening up new fields of application in direct position measurement.

A ball coupling (which may be fitted to either end of the shaft) offers backlash-free operation even where there are parallel

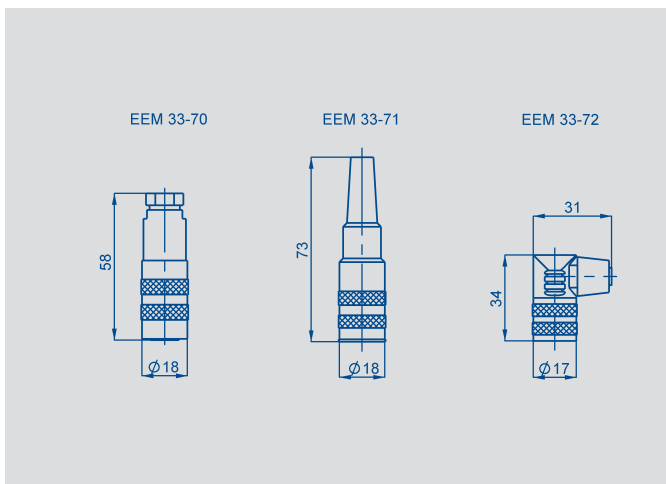
or angular errors between the transducer axis and the direction of movement. The elastomer-damped, independently sprung precious metal multi-finger wiper has been designed to provide a reliable contact even at high speeds or when experiencing shock or vibration.

Description	
Housing	aluminium, anodized
Mounting	adjustable clamps
Actuating rod	stainless steel
Ball coupling	stainless steel with a hardened ball sprung against a hardened plate surface
Bearings	both ends in DU plastic bearings
Resistance element	conductive-plastic
Wiper assembly	precious metal multi-finger wiper, elastomer-damped
Electrical connections	
series T	3-wire, shielded cable strain-relieved, 2 m long
series TS	5-pin round connector IEC 130-9



Type designations	T25 TS25	T50 TS50	T75 TS75	T100 TS100	T150 TS150	with cable with plug
<b>Electrical Data</b>						
Defined electrical range	25	50	75	100	150	mm
Electrical stroke	27	52	77	102	152	mm
Nominal resistance	1	5	5	5	5	k $\Omega$
Resistance tolerance	20					±%
Independent linearity	0.2	0.15	0.1	0.075	0.075	±%
Repeatability	0.002					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					M $\Omega$
Dielectric strength (500 VAC, 50 Hz)	≤ 100					μA
<b>Mechanical Data</b>						
Overall length (dimension A)	63	88	113	138	188	+1 mm
Mechanical stroke (dimension B)	30	55	80	105	155	±1,5 mm
Weight with cable with plug	140 86	160 107	170 132	190 150	220 190	g g
Weight of actuator with coupling and wiper	35	43	52	58	74	g
Operating force (horizontal)	≤ 0.30					N
Compensation provided by ball bearing	±1 mm parallel offset, ±2.5° angular offset					
Maximum permitted torque for fixing screws (with washer)	140					Ncm

<b>Environmental Data</b>		
Temperature range	-30... +100	°C
Vibration	5... 2000 $A_{max} = 0.75$ $a_{max} = 20$	Hz mm g
Shock	50 11	g ms
Life	>100 x 10 <sup>6</sup>	movements
Protection class	IP 40 (DIN EN 60529)	



#### Included in delivery

2 mounting clamps Z-45 incl.  
4 screws M4x10,  
1 ball coupling

#### Optional accessories

4 mounting clamps Z3-31,  
Art.No. 059010

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

#### Order designations

Type	Art.no.
T 25	023202
TS 25	023232
T 50	023203
TS 50	023233
T 75	023204
TS 75	023234
T 100	023205
TS 100	023235
T 150	023206
TS 150	023236

#### Available on request

Order designations	Type	Art.-No.	independent linearity
T 25-.1	023207		$\pm 0,1 \%$
TS 25-.1	023237		$\pm 0,1 \%$
T 50-.1	023208		$\pm 0,1 \%$
TS 50-.1	023238		$\pm 0,1 \%$
T 50-.05	023209		$\pm 0,05 \%$
TS 50-.05	023239		$\pm 0,05 \%$
T 75-.05	023213		$\pm 0,05 \%$
TS 75-.05	023243		$\pm 0,05 \%$
T 100-.05	023214		$\pm 0,05 \%$
TS 100-.05	023244		$\pm 0,05 \%$
T 150-.05	023215		$\pm 0,05 \%$
TS 150-.05	023245		$\pm 0,05 \%$

#### Recommended accessories


Plug type EEM 33-70  
protection class IP 67,  
Plug type EEM 33-71  
protection class IP 40,  
Plug type EEM 33-72  
protection class IP 40.

Process-controlled indicators  
MAP... with display,

Signal conditioner MUP..  
/MUK ... for current supply 24  
V and standardized output  
signals.



Signal conditioner MUP

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