

## Conductive-Plastic Positioning Transducer Type TRS

Position sensors employing conductive-plastic resistance and collector tracks provide direct means of measuring position.



### Application

Position sensors employing conductive-plastic resistance and collector tracks provide direct means of measuring position, without the need of any form of solid mechanical coupling.

An important and special feature of these particular units is their robust, industry-proven method of construction. Of particular significance is the double bearing arrangement which really comes into its own when side forces are met.

### Specification

Housing:	aluminium, anodized
Actuating shaft:	stainless steel with anti-rotation device, inside thread M 2.5
Gauging head:	stainless steel with external M 2.5 thread and hardened ball point
Bearings:	both ends in DU sleeves
Resistance element:	conductive plastic
Wiper assembly:	precious metal multi-finger wiper, elastomer-damped
Electrical connection:	miniature-plug and socket, 5 poles

### Special features

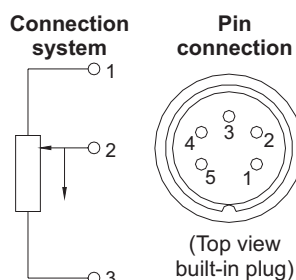
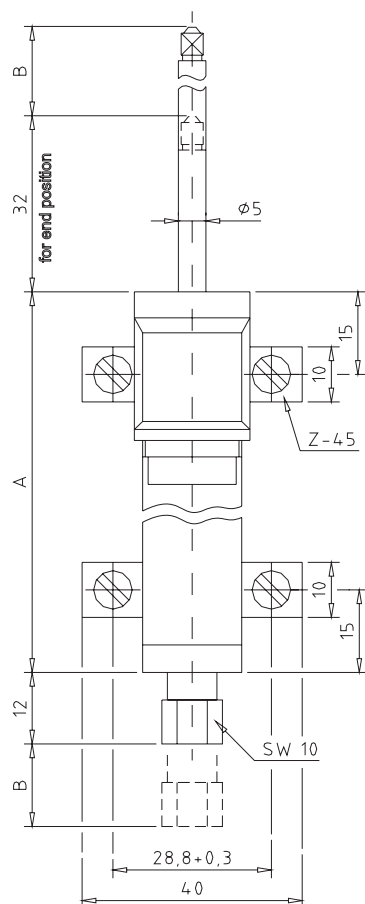
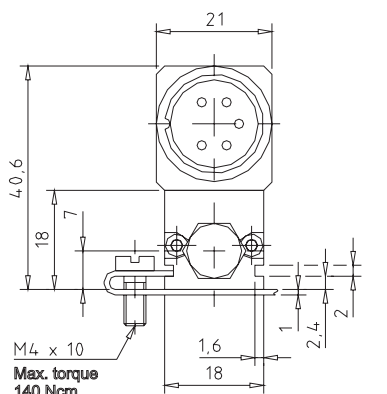
- long life:  $100 \times 10^6$  operations
- outstanding linearity up to 0.075 %
- DIN standard gauging end
- double bearing system on shaft
- insensitive to shock and vibration

### Included in delivery

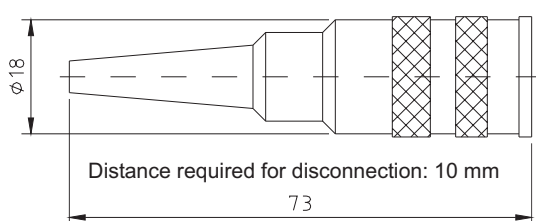
- 2 fixing clamps Z-45 incl. 4 screws M 4 x 10
- 1 gauging head with hardened ball point

### Order designation:

2112A25 (TRS25)	article-no: 12804
2112A50 (TRS50)	article-no: 12805
2112A75 (TRS75)	article-no: 12806
2112A100 (TRS100)	article-no: 12807



KD 5



Type designation:	TRS25	TRS50	TRS75	TRS100
Electrical Data				
Defined electrical range	25 mm	50 mm	75 mm	100 mm
Nominal resistance	1 kΩ	5 kΩ	5 kΩ	5 kΩ
Resistance tolerance	± 20 %			
Independent linearity	± 0,2 % f.s.	± 0,15 % f.s.	± 0,1 % f.s.	± 0,075 % f.s.
Repeatability	0,002 mm			
Recommended operating wiper current	< 0,1 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 / °C			
Insulation resistance (500 V = 1 bar, 2 s)	≥ 10 MΩ			
Dielectric strength (50 Hz, 2s, 1 bar, 500 V ~)	≤ 100 μA			
Mechanical Data				
Length housing (Dim. A <sup>+1mm</sup> )	63 mm	94,4 mm	134,4 mm	166 mm
Mech. stroke (Dim. B ±1,5mm)	30 mm	55 mm	80 mm	105 mm
Total weight	74 g	100 g	128 g	150 g
Dimension of actuating shaft with coupling and wiper block	25 g	36 g	48 g	57 g
Operating force (horizontal)	≤ 5 N			
Max. operating frequency *	18 Hz	14 Hz	11 Hz	10 Hz
Max. permitted torque for fixing screws	140 Ncm			
Environmental Data				
Temperature range	-30 ... +100°C			
Vibration	5 ... 2000 Hz, A <sub>max</sub> = 0,75 mm, a <sub>max</sub> = 20 g			
Shock	50 g, 11 ms			
Life	> 100 x 10 <sup>6</sup> operations			
Protection class	IP 40			

\*) In case of the most critical application (transducer mounted with the gauging head upwards).

#### Important:

All the values given in this data sheet for linearity, lifetime, microlinearity, resistance to external disturbances and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage follower, where virtually no load is applied to the wiper ( $I_e \leq 0,1 \mu\text{A}$ )

## Recommended accessories

- Plug type KD 5, protection class IP 40, Art.-no. 818
- Measuring cable KS 5 - KD 5, Length 5 m, Art.no. 10 641
- Processor-controlled measuring system type DMF-P
- Connection cable drag chain suitable KS 5 -KD 5 Robot 900 length: 5m, art.-no: 19996