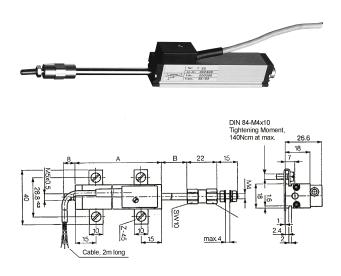
# Displacement

## Displacement Sensor, Potentiometric FWA xxx T



- · Displacement transducers are suitable for direct, accurate measurement of displacements in automatic control and metrology.
- The pickup of the displacement is performed by using a pull rod with a universal joint. This allows for an actuation that is free from backlash and transverse forces, even in case of parallel and angular displacements of transducer and measuring direction.
- Elastomer-damped, independently resilient multi-finger noble metal sliding contact for reliable contact, even at high adjustment speed, shock or vibration.
- · Long life, extraordinary linearity, pull rod running on two exact bearings, very high adjustment speed of up to 10m/s, shock and vibration resistant.

1 Pre-adjusted in the factory by storing the correction values in the ALMEMO® connector. The precise adjustment can be locally performed by the user with final measures after the installation.

Other version: Displacement transducer with digital ALMEMO<sup>®</sup> D7 measuring plug, see page 10.16. Digital sensor, can be calibrated without measuring device. Measurement of fast displacement changes.

#### Technical Data:

Independent linearity:	T25: ±0.2%; T50: ±0.15% T75: ±0.1%; T100: ±0.075% T150: ±0.075%		
Housing length (meas. A+1mm):T25: 63mm; T50: 88mm T75: 113mm; T100: 138mm T150: 188mm			
Mech. stroke (meas. B ±1.5mm	h): T25: 30mm; T50: 55mm T75: 80mm; T100: 105mm T150: 155mm		
Total weight (with 2m cable):	T25: 140g; T50: 160g T75: 170g; T100: 190g T150: 220g		
Weight of the pull rod incl. cou and sliding contact block:	pling T25: 35g; T50: 43g T75: 52g; T100: 58g T150: 74g		

Movability, ball-shaped coupling $\pm 1$ mm parallel displacement, $\pm 2.5^{\circ}$ angular displacement			
Operating force (horizontal):	$\leq 0.30N$		
Reproducibility:	0.002mm		
Insulation resistance:	$\geq$ 10MW, (500VDC, 1 bar, 2s)		
Dielectric strength:	≤ 1mA, (50Hz, 2s, 1 bar, 500VAC)		
Max. permissible torque:	140Ncm		
Temperature range:	-30 to +100°C		
Temperature coefficient:	typ. 5ppm/°C		
Vibrations:	5 to 2000Hz/Amax = 0.75mm/amax = 20g		
Shock:	50g/11ms		
Life span:	> 100 x 106 strokes		
Protection system:	IP 40		

#### Option

Plug connection (instead of fixed connected cable), including 3m cable with screwed round socket and ALMEMO® connector

#### OWA071AK

Order no.

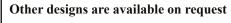
Order no.

#### Types

Order no. Working length/resolution, incl. ALMEMO® cable 2m long 25 mm / 0,001 mm FWA025T

50 mm / 0,01 mm 75 mm / 0,01 mm **FWA050T FWA075T** 

100 mm / 0,01 mm **FWA100T** 150 mm / 0,01 mm **FWA150T** included with delivery 2 tensioning clamps Z3-31 including 4 cap screws M4x10, 1 ball-shaped coupling





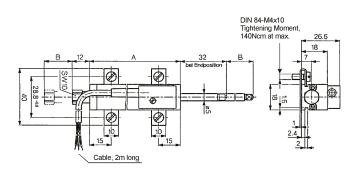
Displacement transducers FWA xxx TEX with pivot joint Protective class IP54, 10 to 300 mm



Displacement transducers FWA xxx TX2 Protective class IP67 with pivot joint, 25 to 300 mm

### Displacement Tracer, Potentiometric FWA xxx TR





- Resistor and collector paths made from conducting plastic.
- · Suitable for direct measurements of displacement without a form-locking connection, position detection at stationary measuring objects, tolerance measurements and for continuous contour measurement.
- The pull rod, which is supported on both sides, allows for accepting transverse forces that, for example, occur during a continuous scan of curves or spline parts.
- Rear limit stop is used to provide a simple mechanical coupling of automatic retraction systems, such as pneumatic cylinders or electromagnets.
- · Long life, extraordinary linearity, tracer pin running on two exact bearings, DIN compliant standard measuring inserts can be used, shock and vibration resistant.
- Pre-adjusted in the factory by storing the correction values in the ALMEMO® connector. The precise adjustment can be locally performed by the user with final measures after the installation.

#### **Other version:**

Displacement transducer with digital ALMEMO® D7 measuring plug, see page 10.16.

Digital sensor, can be calibrated without measuring device. Measurement of fast displacement changes.

Independent linearity:	TR25: ±0.2%; TR50: ±0.15%	Operating force (horizontal):	< 5 N
TR75: ±0.1%; TR100: ±0.075%	Reproducibility:	0.002mm	
	- Insulation resistance:	$\geq$ 10MW (500VDC, 1 bar, 2s)	
Housing length (meas. A+1mm): TR25: 63mm;		Dielectric strength:	$\leq 1$ mA (50Hz, 2s, 1 bar, 500VAC)
TR50: 94.4mm; TR75: 134.4mm; TR100: 166mm	Max. permissible torque:	140Ncm	
	Temperature range:	-30 to +100°C	
Mech. stroke (meas. B ±1.5mm): TR25: 30mm; TR50: 55mm TR75: 80mm; TR100: 105mm	Temperature coefficient:	typ. 5ppm/°C	
	Vibrations:	5 to 2000Hz/Amax = 0.75mm/amax = 20g	
Total weight (with 2m cable): TR25: 120g; TR50: 150g   TR75: 180g; TR100: 200g	Shock:	50g/11ms	
	- Life span:	> 100 x 106 strokes	
Weight of the pull rod incl. coupling and sliding contact block: TR25: 25g; TR50: 36g TR75: 48g; TR100: 57g	Protection system:	IP 40	
	<u>e</u> , e		
Max. operating frequency: (for upright')	most critical application 'probe tip TR25: 18Hz; TR50: 14	-	

#### **Technical Data:**

Option		Order no.
Plug connection (instead of fixed connected cable), including 3m cable with screwed round socket and ALMEMO <sup>®</sup> connector		OWA071AK
<b>Types</b> Working length/resolutio	<b>Order no.</b> n, incl. ALMEMO <sup>®</sup> cable 2m long 100 mi	Order no. m / 0,01 mm FWA100TR

FWA025TR

TR75: 11Hz; TR100: 10Hz

25 mm / 0,001 mm 50 mm / 0,01 mm 75 mm / 0,01 mm

- included with delivery
- 2 tensioning clamps Z3-31 including 4 cap screws M4x10, 1 probe tip with hard-metal ball



FWA050TR

FWA075TR