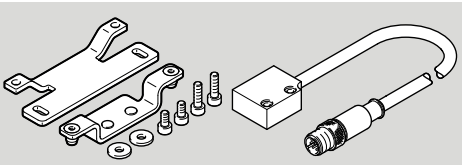
ELCC-...-M1
Displacement encoder



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Instructions | Operating

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[8091028]

Translation of the original instructions

1 Further applicable documents

All available documents for the product ➔ www.festo.com/pk.

Observe further applicable documents:
– Instruction manual for ELCC-TB-KF cantilever axis

2 Safety

2.1 Safety instructions

– Only assemble the product on components that are in a condition to be safely operated.

NOTICE!

Destroyed coding of the magnetic tape surface due to external magnetic fields.
- Avoid external magnetic fields (> 64 mT) on the magnetic tape surface.

NOTICE!

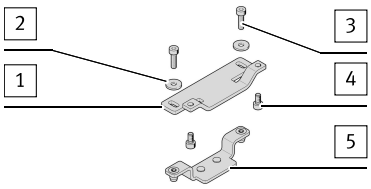
Reduced system accuracy due to external magnetic fields.
- Avoid external magnetic fields (> 1 mT) at the sensor.

2.2 Intended use

Sensing of cantilever position of an axis ELCC-TB-KF.

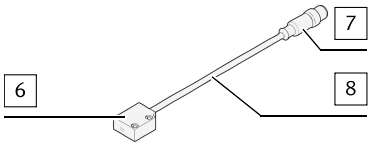
3 Product range overview

3.1 Included in delivery



1 Sensor bracket (1x)
2 Washer (2x)
3 Screw (2x) M4x14-10.9
4 Screw (2x) M4x8-8.8
5 Sensor mounting (1x)

Fig. 1 Sensor bracket



6 Sensor head (1x)
7 Plug connector (1x) M12, 8-pin
8 Cable (1x)

Fig. 2 Measuring unit

4 Mounting

4.1 Prerequisite

- Use ELCC-TB-KF cantilever axes with M1 characteristics.
  ↳ Check: the magnetic tape (A) is on the cantilever axis.

4.2 Assembly at ELCC-60/70-...-M1

For sizes 90 and 110, the displacement encoder is already pre-assembled.

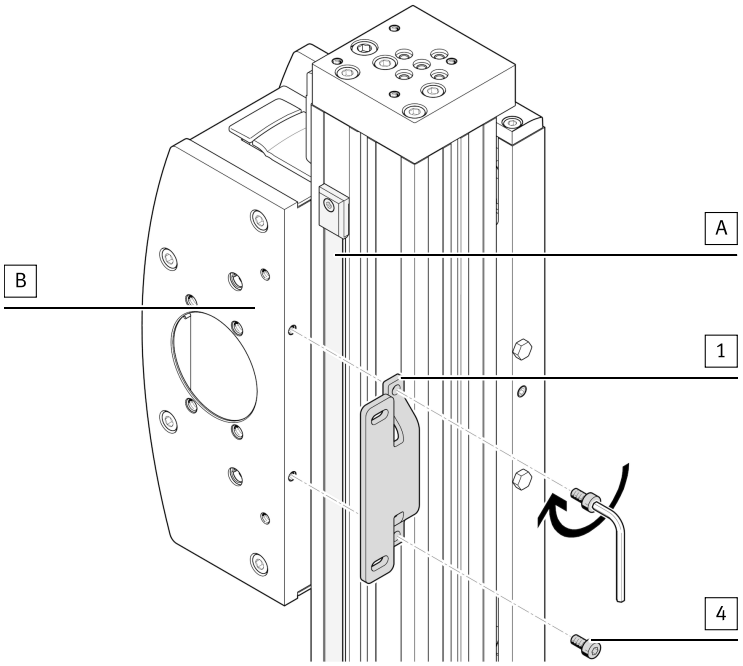


Fig. 3 Mount the sensor bracket

- Mount the sensor bracket 1 on the drive head (B) using the screws 4. Tightening torque: 2.5 Nm ± 20 %

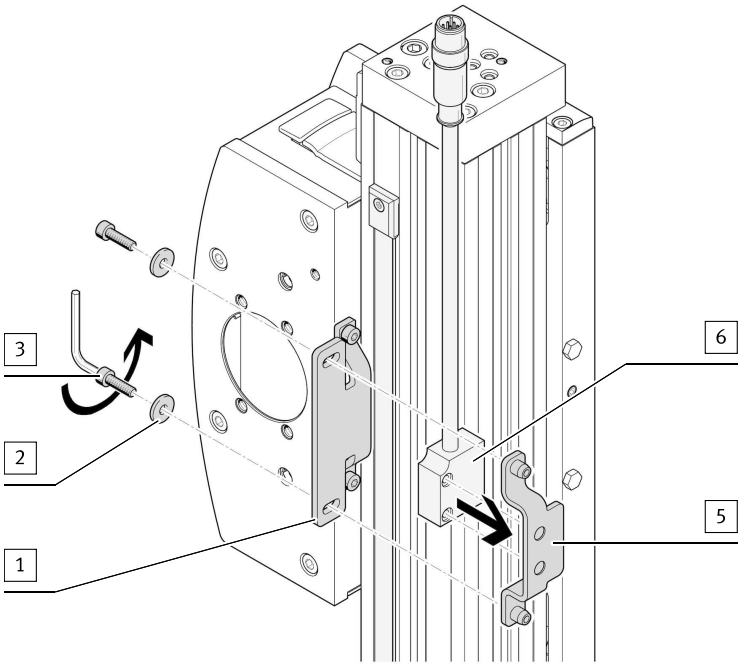


Fig. 4 Mount the measuring unit

1. Place the sensor head 6 in the sensor mounting 5.
2. Place the sensor mounting 5 and sensor head 6 on the sensor bracket. Sensing distance S: = 0.1 ... 2 mm.
3. Fasten the sensor mounting 5 with the washers 2 and the screws 3. Tightening torque: 3.4 Nm ± 20 %

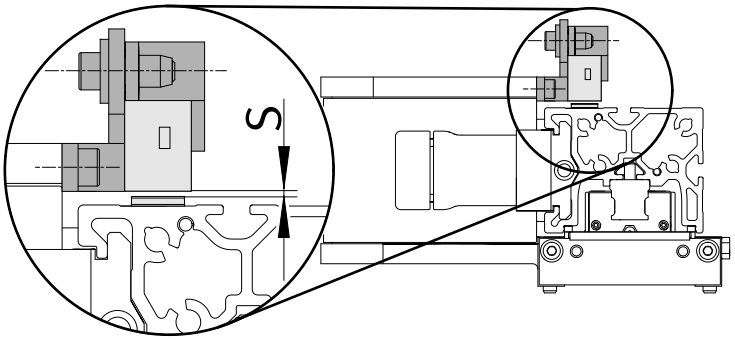


Fig. 5 Observe sensing distance

4.3 Strain relief

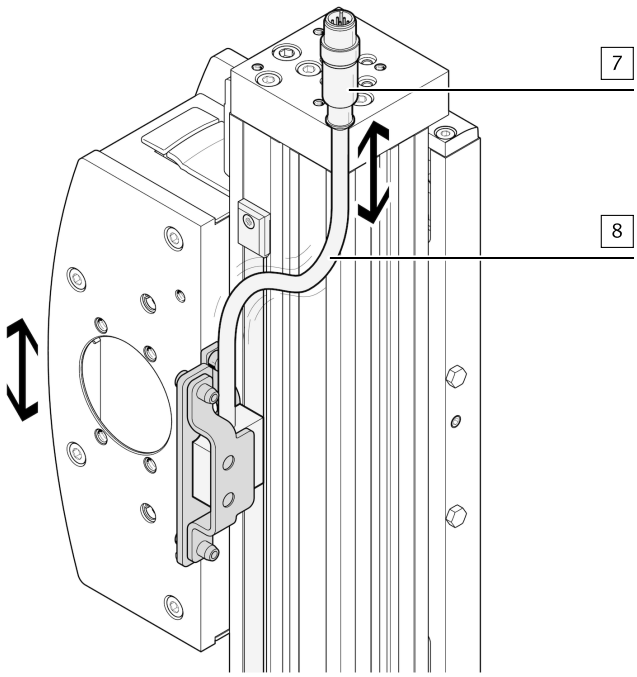
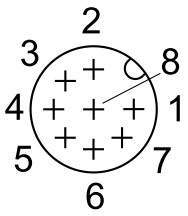


Fig. 6 Relieve strain on cable

1. Ensure sufficient strain relief on cable [8].
2. Connect plug connector [7] to the matching socket. Tightening torque: 0.25 Nm ± 10 %

5 Contact assignment

Connection [7]	Pin	Signal
	1	/B
	2	/A
	3	0 V (GND)
	4	B
	5	VCC
	6	N
	7	A
	8	/N
	Housing	Shield

Tab. 1 Contact assignment

6 Service

The displacement encoder and the magnetic tape (A) are maintenance-free. In the event of damage, replace the components ➔ www.festo.com/spareparts.

7 Technical data

Displacement encoder ELCC			M1
Sensing distance	S	[mm]	0.1 ... 2
Cable bending radius	R	[mm]	≥ 60
Cable length		[m]	≤ 25
Permitted controllers			Devices that support the incremental encoder with digital A/B signals.
Air humidity			≤ 80 % (non-condensing)
Note on materials			Contains paint-wetting impairment substances[1)]
Measuring principle			Magnetic, incremental, 4-fold edge control
Signal output			Proportional to speed
Interpolation rate			2000
Resolution At a travel speed of ≤ 4 m/s		[µm]	2.5
Repetition accuracy		Increment	±1
System precision at 20 °C		[µm]	±(25 + 20 x measuring length in m)
Supply voltage DC		[V]	5 ± 2.5 %
Residual ripple		[mV]	< 50
Current consumption		[mA]	≤ 200
Outputs			5 V TTL line driver, alternating, resistant to sustained short circuit
Travel speed with CMMP-AS		[m/s]	≤ 4
Reference signal (N/N)			Cyclical, every 5 mm
Weight		[g]	40
Acceleration		[m/s²]	≤ 50
Degree of protection in mounted state			
Sensor head			IP67
Plug			IP64
Temperature			
Storage temperature		[°C]	–25 ... +85
Ambient temperature with flexible cable installation		[°C]	–10 ... +70

1) PWIS = paint-wetting impairment substances

Tab. 2 Technical data