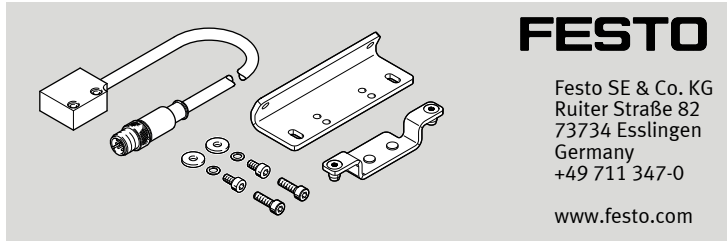


# ELGA-...-M1/-M2

## Displacement encoder



# FESTO

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Assembly instructions

8120866  
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 [8120866]



Translation of the original instructions

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### 1 Applicable Documents



All available documents for the product → [www.festo.com/sp](http://www.festo.com/sp).

Document	Product	Contents
Instructions	ELGA	Operating

Tab. 1

### 2 Safety

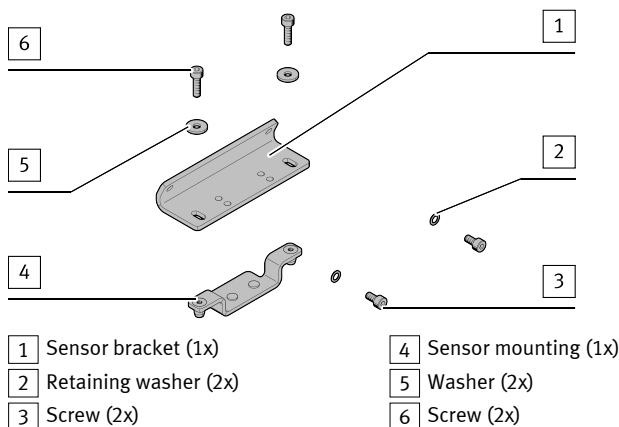
#### 2.1 Safety Instructions

- Only mount the product on components that are in a condition to be safely operated.
- Observe tightening torques. Unless otherwise specified, the tolerance is  $\pm 20\%$ .
- Avoid external magnetic fields ( $> 64\text{ mT}$ ) on the surface of the magnetic tape, otherwise the coding will be destroyed.
- Avoid external magnetic fields ( $> 1\text{ mT}$ ) at the sensor, otherwise the system accuracy will be reduced.

#### 2.2 Intended Use

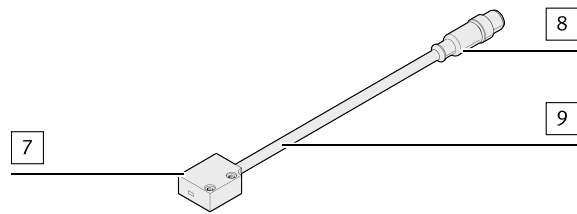
Sensing of the slide position of an axis ELGA -...- BS / -TB-KF or ELGA -...- TB-RF.

### 3 Scope of Delivery



- |                         |                        |
|-------------------------|------------------------|
| 1 Sensor bracket (1x)   | 4 Sensor mounting (1x) |
| 2 Retaining washer (2x) | 5 Washer (2x)          |
| 3 Screw (2x)            | 6 Screw (2x)           |

Fig. 1 Sensor bracket



- |                   |              |
|-------------------|--------------|
| 7 Sensor (1x)     | 9 Cable (1x) |
| 8 Round plug (1x) |              |

Fig. 2 Measuring unit

### 4 Assembly

#### 4.1 Requirement

- Use axis with feature M1/M2.  
 ↳ The magnetic tape (A) is on the axis.

#### 4.2 Assembly of Displacement Encoder

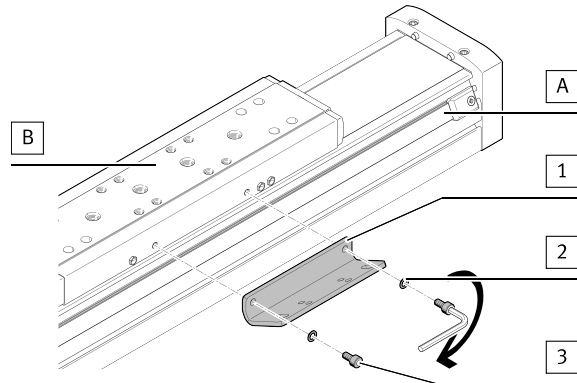


Fig. 3 Mount the sensor bracket

- Mount sensor bracket 1 with the retaining washers 2 and the screws 3 on the slide (B).

ELGA		70/80	120/150
3	Screw	M4x8	M5x10
		[Nm]	
		5	5.9

Tab. 2 Tightening Torques

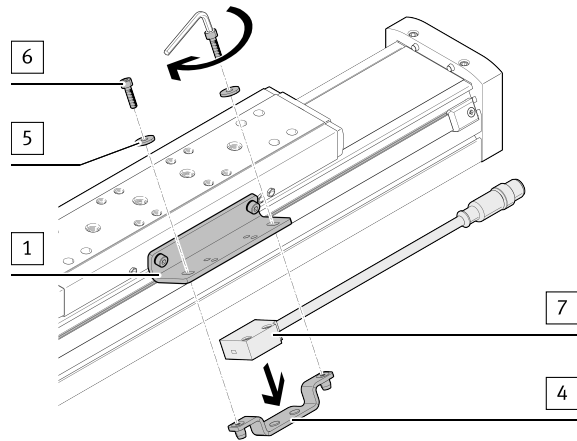


Fig. 4 Mount the measuring unit

1. Position the sensor head 7 in the sensor mounting 4.
2. Place the sensor mounting 4 and sensor head 7 on the sensor bracket 1. Sensing distance S: → 7 Technical Data.
3. Mount sensor mounting 4 with the washers 5 and the screws 6. Tightening torque: 3.5 Nm

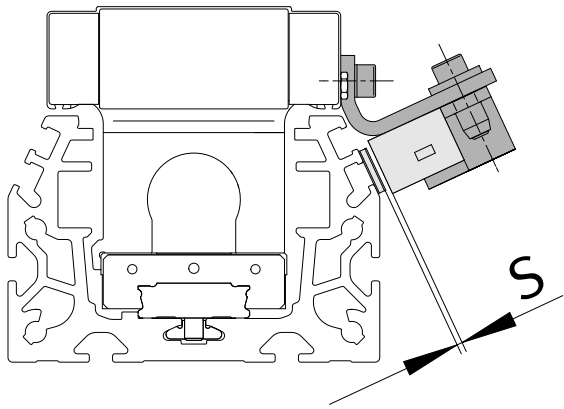


Fig. 5 Observe sensing distance

#### 4.3 Strain Relief

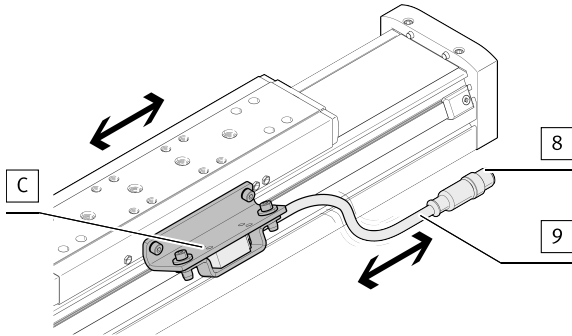


Fig. 6 Use strain relief on cable

1. Ensure sufficient strain relief for the cable [9], e.g. with cable binders. The four drill holes (C) are provided for this purpose.
2. Connect plug [8] to the matching socket. Tightening torque: 0.25 Nm ± 10%
3. Observe the permissible bending radius R and the permissible ambient temperature with flexible cable installation → 7 Technical Data.

#### 5 Contact Assignment

Plug M12 8-pin, A-coded	Pin	Signal
	1	/B
	2	/A
	3	0 V (GND)
	4	B
	5	VCC
	6	N
	7	O
	8	/N
Housing	Shield	

Tab. 3 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](http://www.festo.com/spareparts).

#### 7 Technical Data

Measuring unit		M1	M2
Sensing distance	S [mm]	0.1 ... 2	
Cable bending radius	R [mm]	≥ 60	
Cable length	[m]	≤ 25	
Permitted controllers		CMM...	CMM... CMGA
Humidity		≤ 80% (non-condensing)	
Note on materials		Contains paint-wetting impairment substances <sup>1)</sup>	
Measuring principle		Magnetic, incremental, 4x edge control	
Signal output		Proportional to speed	
Interpolation rate		2000	500
Resolution at travel speed ≤ 4 m/s	[μm]	2.5	10

Measuring unit		M1	M2
Repetition accuracy	Increment	±1	
System precision at 20 °C	[μm]	±(25 + 20 x measuring length in m)	
Travel speed with CMM-AS	[m/s]	≤ 4	
Travel speed with CMGA	[m/s]	≤ 1	≤ 4
Reference signal (N/N)		Cyclical, every 5 mm	
Weight	[g]	40	
Acceleration	[m/s <sup>2</sup> ]	≤ 50	
Outputs		5 V TTL line driver, alternating, resistant to sustained short circuit	
Supply voltage			
Supply voltage DC	[V DC]	5 ± 2.5%	
Residual ripple	[mV]	< 50	
Current consumption	[mA]	≤ 200	
Degree of protection			
Sensor head		IP67	
Plug		IP64 in mounted status	
Temperature			
Storage temperature	[°C]	-25 ... +85	
Ambient temperature with flexible cable installation	[°C]	-10 ... +70	

1) PWIS = paint-wetting impairment substances

Tab. 4 Technical Data