



Linear encoders TTK70

TTK70-AXA0-K02



Model Name > [TTK70-AXA0-K02](#)
Part No. > [1038033](#)



Illustration may differ

At a glance

- Non-contact determination of absolute position
- Small, compact read head
- Standard SSI interface, combined with SinCos output
- Measuring lengths of up to 4 m
- High level of accuracy ($\pm 10 \mu\text{m}$)
- High resolution ($1 \mu\text{m}$)
- High travel speed of up to 10 m/s

Your benefits

- Easy to integrate into existing systems
- Small size, light weight and high measurement speed make it ideal for a variety of applications
- After installation, the system is immediately available and completely maintenance-free, which leads to time and cost savings
- Immune to environmental factors like contamination and condensation, ensuring increased reliability
- Real-time speed determination plus absolute positioning due to SinCos and SSI output



Performance

Measuring length:	$\leq 4,000 \text{ mm}$
Magnetic strip length:	Measurement length + 80 mm
Resolution:	$1 \mu\text{m}$
Travelling speed dynamic operation:	$< 10 \text{ m/s}$
Travelling speed static operation:	$< 1 \text{ m/s}$
System accuracy:	$\pm 10 \mu\text{m}$
Repeatability (Ta not constant):	$\leq \pm 2 \mu\text{m}$

Mechanical data

Connection type:	Connector M12, 12-pin
Dimensions:	See dimensional drawing
Mass:	0.08 kg
Material:	Die-cast zinc

Electrical data

Supply voltage:	4.5 V ... 30 V
Operating power consumption (no load):	55 mA

Code type: Gray
MTTFd: mean time to dangerous failure: 65 a (EN ISO 13849) ¹⁾

¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive.

Calculation based on nominal load of components, average ambient

temperature 40°C, frequency of use 8760 h/a. All

electronic failures are considered hazardous. For more information, see document no. 8015532.

Interfaces

Electrical interface:	SSI
Interface signals:	24 Bit ¹⁾
Sin/cos-output:	Speed-proportional signal output for real-time requirements.

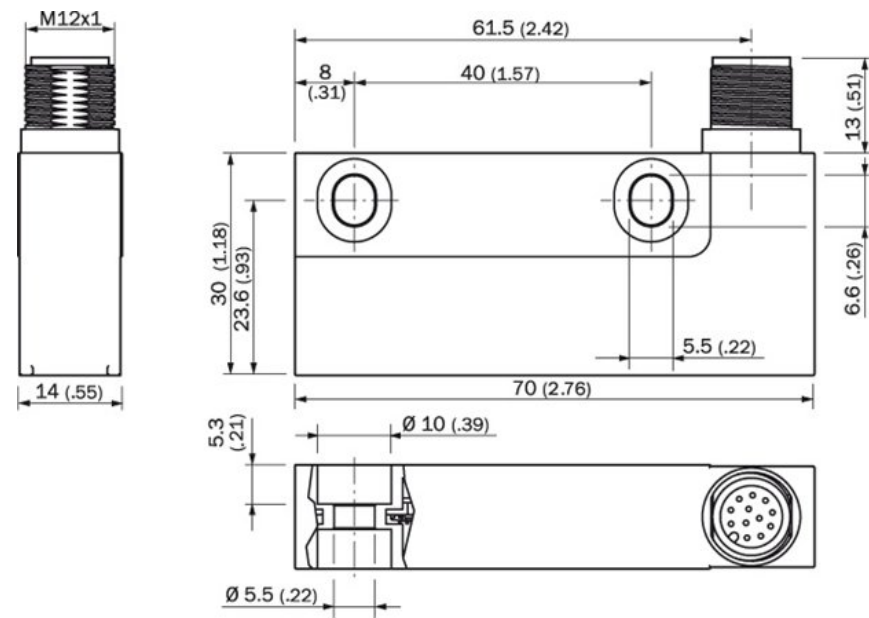
¹⁾ If the maximum distance between the TTK70 SSI and the magnetic tape is exceeded, bit 25 is set in the SSI data stream. The output position value is invalid! When exceeding or going below the temperature range of the sensor (< -30 °C or > +85 °C), bit 26 is set in the SSI data stream. The bits are reset as soon as the error condition no longer exists. To be able to use these additional bits, the control(ler) must be able to read in at least 26 bits of data.

Ambient data

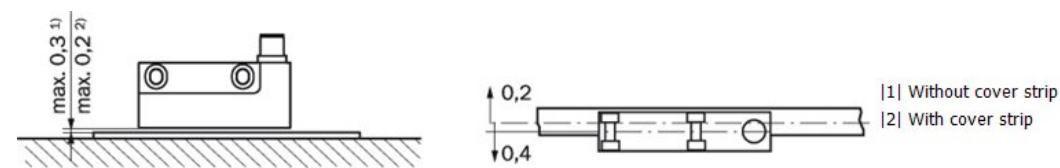
EMC:	(EN 61000-6-2) (EN 61000-6-3)
Enclosure rating:	IP 67 (IEC 60529), with mating connector inserted
Working temperature range:	-30 °C ... 80 °C
Storage temperature range:	-40 °C ... 85 °C, without package
Permissible relative humidity:	100 % (condensation permitted)
Resistance to shocks:	30 g, 6 ms (EN 60068-2-27)
Resistance to vibration:	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
Maximum permitted ambient field strength:	< 3 kA/m ... 4 kA/m (3.8 mT ... 5 mT) (to guarantee compliance with the quoted accuracy values)
Maximum permitted field strength:	< 150 kA/m (< 190 mT) (to ensure that the magnetic tape is not permanently damaged)

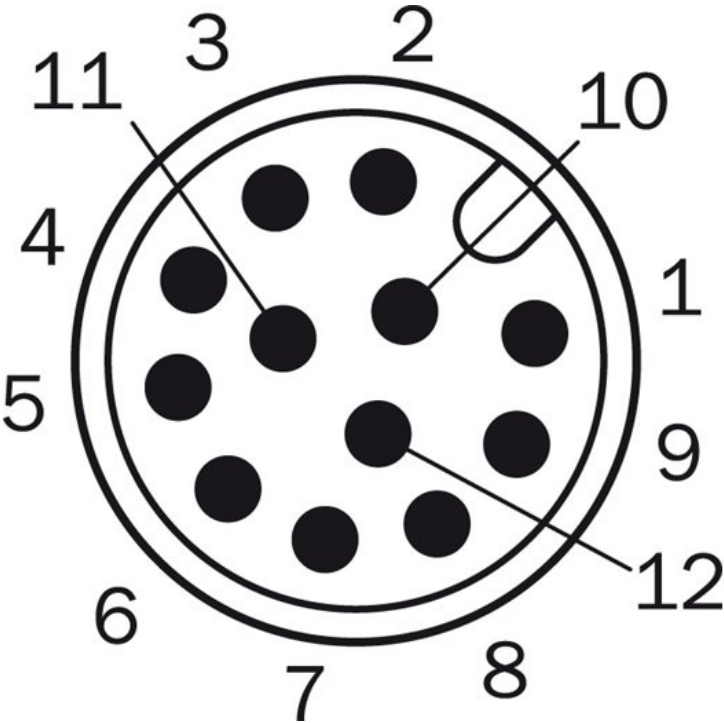
¹⁾ The maximum permitted external field influence is reached when the position value deviates from the original value (without external field influence) by more than 5 µm. This value is reached when, at the sensor location, a field strength of 3 kA/m to 4 kA/m (3.8 mT to 5 mT) occurs in addition to the field strength of the magnetic tape.

Dimensional drawing



Position tolerance





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