



## Motor feedback systems linear HIPERFACE® TTK70

TTK70-HXA0-K02



**Model Name** > [TTK70-HXA0-K02](#)  
**Part No.** > [1037434](#)



*Illustration may differ*

**At a glance**

- Absolute, non-contact, wear-free length measurement system for linear motors
- Measured lengths of up to 4 m
- Suitable for high traverse speeds of up to 10 m/s
- Reliable location positioning even in the event of condensation and contamination of the magnetic tape
- Electronic type label and programming of the position value
- Absolute location positioning, no reference run
- HIPERFACE® interface
- Conforms to RoHs

**Your benefits**

- Reference traverse no longer necessary due to absolute measuring system
- Maintenance-free thanks to non-contact measuring principle
- Simple integration of the system due to the HIPERFACE® interface
- Developed specifically for use in linear direct drives
- Also for use in rough ambient conditions



**Performance**

Measuring step:	0.244 µm at interpolation of the sine/cosine signals with e.g. 12 Bit
Length of period:	1 mm
Measuring length:	Max. 4,000 mm
Available memory area:	1,792 Byte, 1,792 Byte (E2PROM 2048)
System accuracy (ambient temperature):	± 10 µm (+20 °C)
Repeatability (Ta not constant):	< 5 µm
Magnetic strip length:	Measurement length + 80 mm
System part:	Read head
Measured value backlash:	< 10 µm

**Mechanical data**

Dimensions:	See dimensional drawing
Mass:	Read head 0.06 kg without cable, magnetic tape 0.18 kg/m
Material:	Read head die-cast zinc, magnetic tape 17410 hard ferrite 9/28 P
Piston speed:	10 m/s
Operating speed up to which the absolute position can be rel:	1.3 m/s

## Electrical data

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Electrical interface:	HIPERFACE
Operating voltage range/supply Voltage:	7 V DC ... 12 V DC
Recommended supply voltage:	8 V DC
Operating power consumption (no load):	≤ 65 mA <sup>1)</sup>

<sup>1)</sup> 100 mA approx. during adjustment

## Interfaces

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Type of code for the absolute value:	Binary
Interface signals:	Parameter channel RS 485: digital, Process data channel SIN, REFSIN, COS, REFCOS: analog, differential

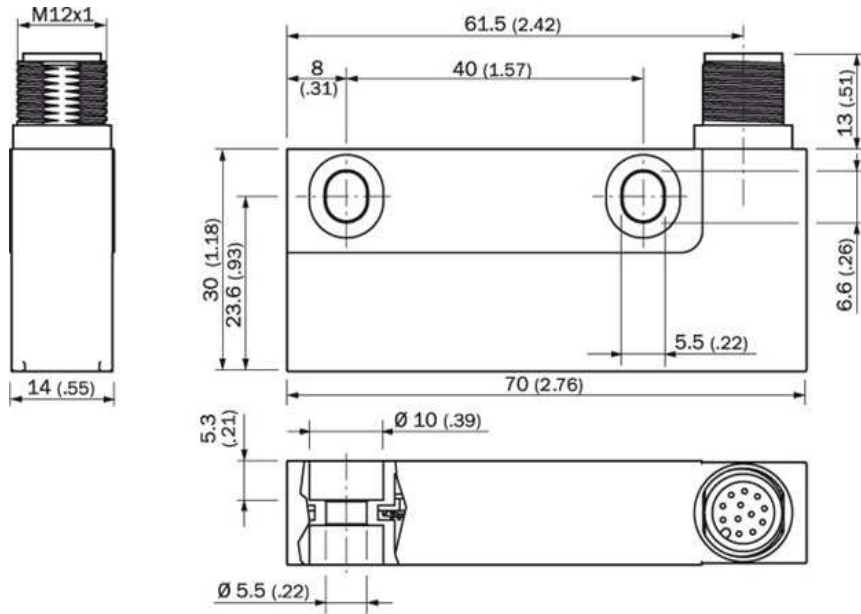
## Ambient data

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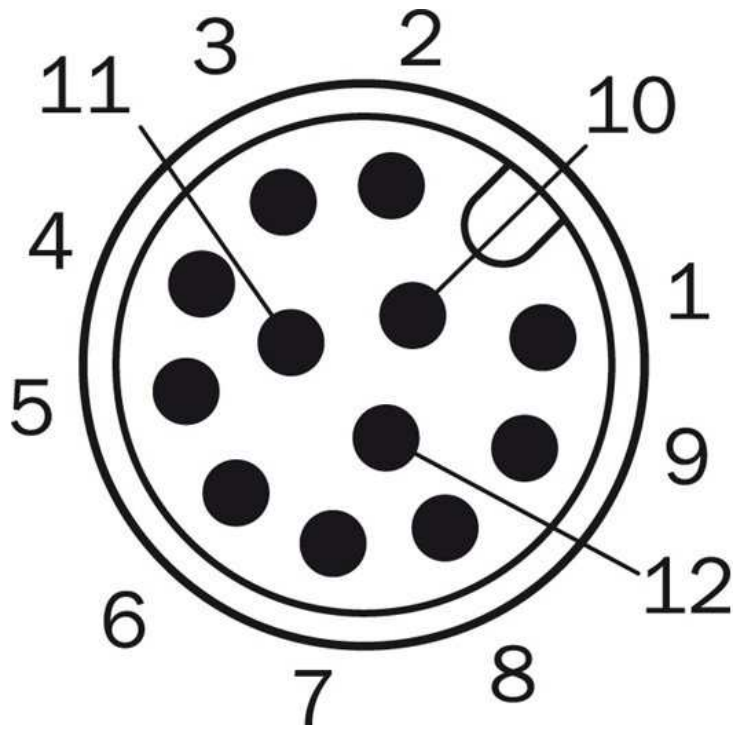
Working temperature range:	-30 °C ... +80 °C
Storage temperature range:	-40 °C ... +85 °C, without package
Relative humidity/Condensation:	100 %, Condensation allowed
Resistance to shocks:	30 g/6 ms/EN 60068-2-27
Resistance to vibration:	20 g/10 Hz/2,000 Hz/EN 60068-2-6
EMC:	(EN 61000-6-2) <sup>1)</sup> (EN 61000-6-3)
Enclosure rating:	IP 65 (according to IEC 60529), with mating connector inserted
Temperature coefficient magnetic tape:	(11 ± 1) µm/K/m
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)

<sup>1)</sup> The EMC according to the standards quoted is achieved when the motor feedback system with put-on mating connector is connected to the central earthing point of the motor controller via a cable screen. Users must perform their own tests when other screen designs are used. <sup>2)</sup> 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.

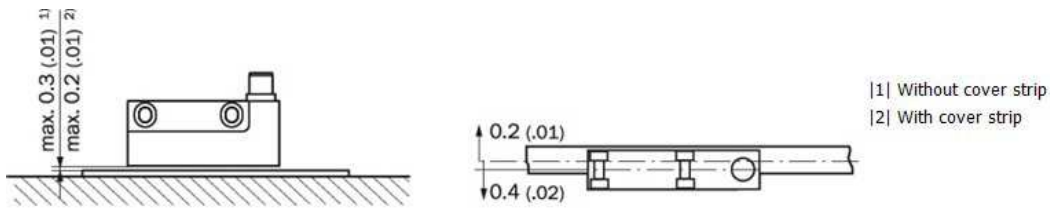
**Dimensional drawing**



**Magnetic tape**

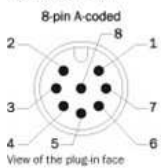


## General tolerances



## PIN and wire allocation

### Connector 8-pin



PIN	Color of wires	Signal	Explanation
1	Brown	REFSIN	Process data channel
2	White	+ SIN	Process data channel
3	Black	REFCOS	Process data channel
4	Pink	+ COS	Process data channel
5	Gray or yellow	Data +	RS-485 parameter channel
6	Green or purple	Data -	RS-485 parameter channel
7	Blue	GND	Ground connection
8	Red	+U <sub>s</sub>	Encoder supply voltage
-	-	Screen	Housing potential. Screening via plug housing.

Electronically adjustable via programming tool

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