



## Motor feedback systems linear HIPERFACE® TTK50

TTK50-HXQ0K02



**Model Name** > [TTK50-HXQ0K02](#)  
**Part No.** > [1057793](#)



*Illustration may differ*

**At a glance**

- Absolute, non-contact, wear-free length measurement system for linear motors
- Measured lengths of up to 1 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. 940 mm
Available memory area:	1,792 Byte (EEPROM 2048)
System accuracy (ambient temperature):	± 10 µm (20 °C)
Repeatability (Ta not constant):	< 5 µm
Magnetic strip length:	Measurement length + 60 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
Connection type:	2 m

## 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):	$\leq 55 \text{ mA}$ <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

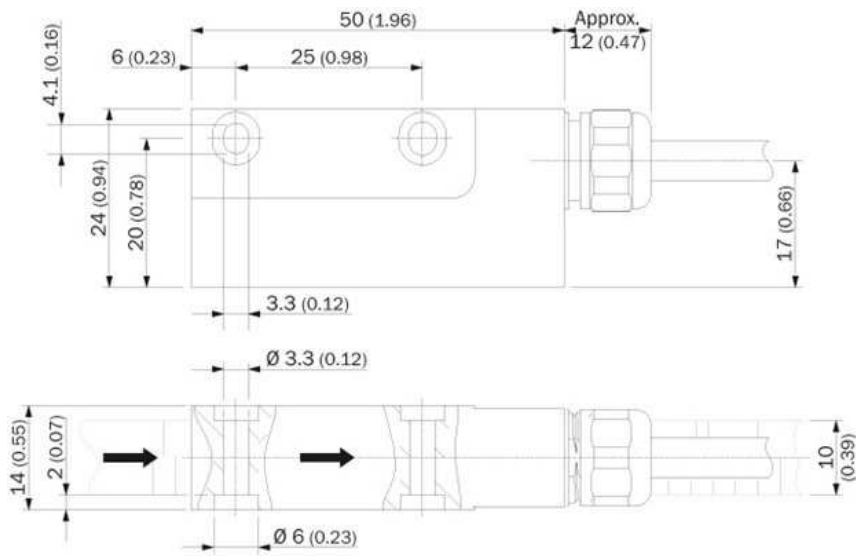
## Ambient data

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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)
Temperature coefficient magnetic tape:	$(11 \pm 1) \mu\text{m/K/m}$
Maximum permitted ambient field strength:	$< 3 \text{ kA/m} \dots 4 \text{ kA/m}$ ( $3.8 \text{ mT} \dots 5 \text{ mT}$ ) (to guarantee compliance with the quoted accuracy values)
Maximum permitted field strength:	$< 150 \text{ kA/m}$ ( $< 190 \text{ mT}$ ) (to ensure that the magnetic tape is not permanently damaged)

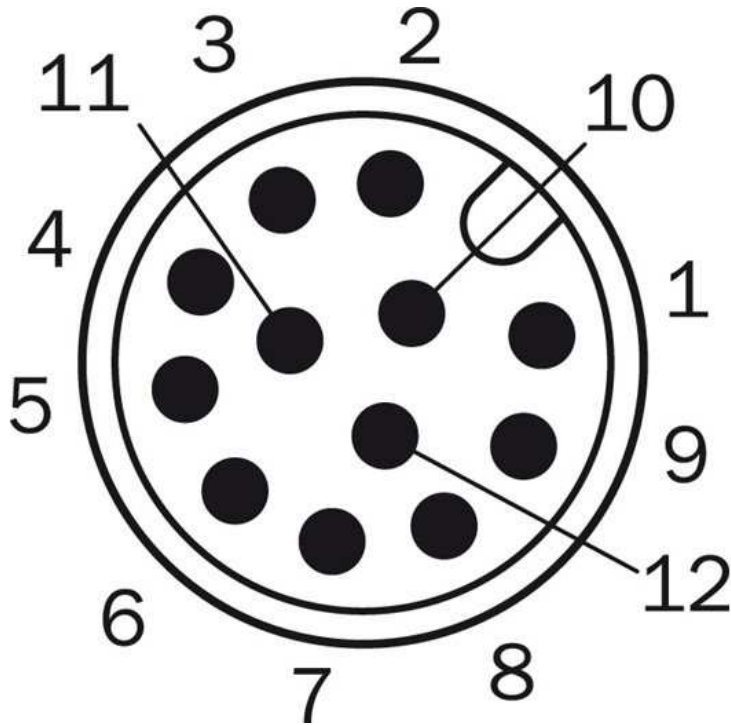
<sup>1)</sup> The EMC according to the standards quoted is achieved when the motor feedback system which is connected to the central earthing point of the motor controller via a cable screen. Users must perform their own tests when other screen designs are used. <sup>2)</sup> The maximum permitted external field influence is reached when the position value deviates from the original value (without external field influence) by more than 5  $\mu\text{m}$ . 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

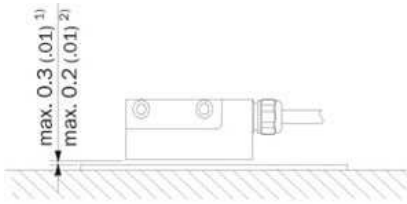


All dimensions in mm (inch)

## Magnetic tape



## General tolerances



All dimensions in mm (inch)

<sup>1)</sup> Without cover strip.

<sup>2)</sup> With cover strip.

General tolerances acc. to DIN ISO 2768-mk.

## Wire allocation

Color of wires	Signal	Explanation
Brown	REFSIN	Process data channel
White	+ SIN	Process data channel
Black	REFCOS	Process data channel
Pink	+ COS	Process data channel
Gray or yellow	Data +	RS-485 parameter channel
Green or purple	Data -	RS-485 parameter channel
Blue	GND	Ground connection
Red	+U <sub>s</sub>	Encoder supply voltage
Copper braid	Screen	Screen connected with encoder housing

Electronically adjustable via programming tool

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