

# TTK50-HXQ0K02

TTK50

MOTOR FEEDBACK SYSTEMS LINEAR HIPERFACE®

**SICK**  
Sensor Intelligence.

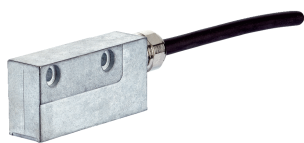


Illustration may differ

### Ordering information

Type	Part no.
TTK50-HXQ0K02	1057793

Other models and accessories → [www.sick.com/TTK50](http://www.sick.com/TTK50)



### Detailed technical data

#### Performance

<b>Measuring step</b>	0.244 µm For interpolation of the sine/cosine signals with, e. g., 12 bits
<b>Measuring length</b>	≤ 940 mm
<b>Length of period</b>	1 mm
<b>Traversing speed</b>	≤ 10 m/s, 1.3 m/s, up to which the absolute position can be reliably produced
<b>Repeatability</b>	< 5 µm
<b>System accuracy</b>	± 10 µm (+20 °C)
<b>Measured value backlash</b>	< 10 µm

#### Interfaces

<b>Electrical interface</b>	HIPERFACE®
<b>Code type</b>	Binary
<b>Available memory area</b>	1,972 Byte (E <sup>2</sup> PROM 2048)

#### Electrical data

<b>Supply voltage</b>	7 V DC ... 12 V DC
<b>Recommended supply voltage</b>	8 V DC
<b>Operating current</b>	≤ 55 mA (without load) <sup>1)</sup>
<b>Connection type</b>	Cable, 8-wire, 2 m

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

#### Mechanical data

<b>Dimensions</b>	See dimensional drawing
<b>Weight</b>	0.06 kg, without cable
<b>Read head material</b>	Zinc diecast

#### Ambient data

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3 <sup>1)</sup>
<b>Enclosure rating</b>	IP65, with mating connector inserted (according to IEC 60529)

<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 and via the encoder housing extensive connected to the motor potential. Users must perform their own tests when other screening 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.

<b>Operating temperature range</b>	-30 °C ... +80 °C
<b>Storage temperature range</b>	-40 °C ... +85 °C, without package
<b>Permissible relative humidity</b>	100 %, condensation permitted
<b>Resistance to shocks</b>	30 g, 6 ms (EN 60068-2-27)
<b>Resistance to vibration</b>	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
<b>Maximum permitted ambient field strength</b>	< 3 kA/m ... 4 kA/m (3.8 mT ... 5 mT), to guarantee compliance with the quoted accuracy values <sup>2)</sup>
<b>Maximum permitted field strength</b>	< 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 and via the encoder housing extensive connected to the motor potential. Users must perform their own tests when other screening designs are used.

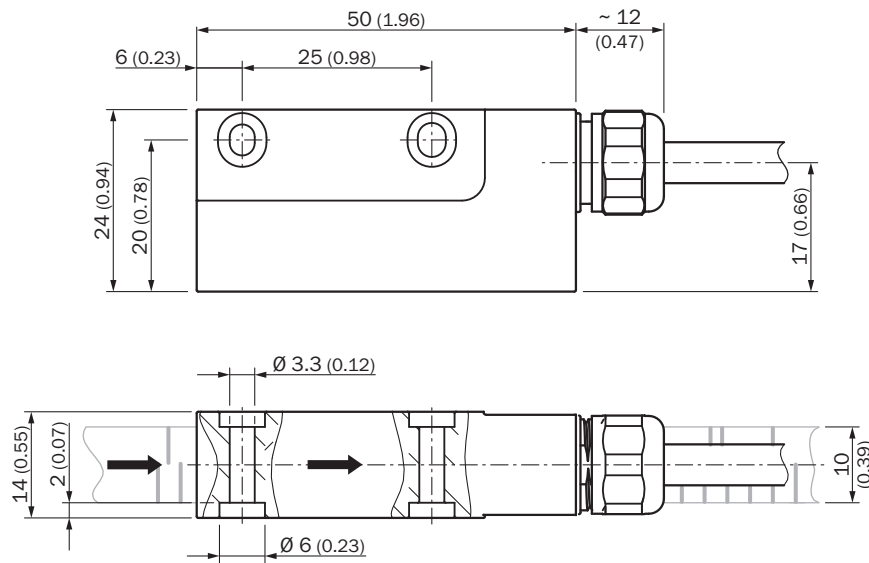
<sup>2)</sup> The maximum permitted external field influence is reached when the position value deviates from the original value (without external field influence) by more than 5 µm. This value is reached when, at the sensor location, a field strength of 3 kA/m to 4 kA/m (3.8 mT to 5 mT) occurs in addition to the field strength of the magnetic tape.

## Classifications

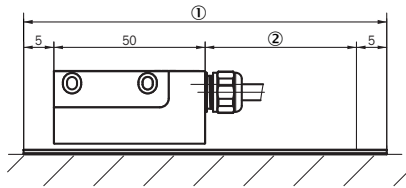
<b>ECl@ss 5.0</b>	27270590
<b>ECl@ss 5.1.4</b>	27270590
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270590
<b>ECl@ss 8.0</b>	27270590
<b>ECl@ss 8.1</b>	27270590
<b>ECl@ss 9.0</b>	27270590
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

### Dimensional drawing (Dimensions in mm (inch))

Read head



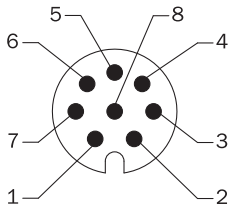
### Order note for magnetic tape length



- ① Required band length = measurement path + 60 mm
- ② Measurement path

### PIN assignment

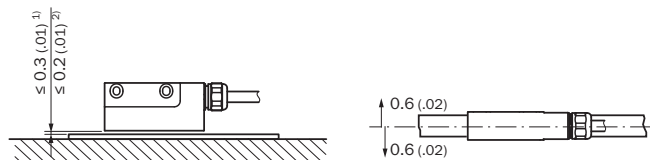
Cable, 8-wire



PIN	Wire colors (cable connection)	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 +	Parameter channel RS 485
6	Green or purple	Data -	Parameter channel RS 485

PIN	Wire colors (cable connection)	Signal	Explanation
7	Blue	GND	Ground connection
8	Red	U <sub>S</sub>	Supply voltage
	Screen		Housing

### Position tolerance

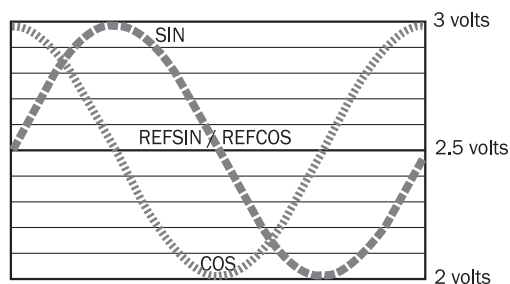


General tolerances according to DIN ISO 2768-mk

- ① Without cover strip
- ② With cover strip

### Diagrams

Signal diagram for clockwise shaft rotation, looking in direction "A" (see dimensional drawing) 1 period = 360° : 64/128/256



### Recommended accessories

Other models and accessories → [www.sick.com/TTK50](http://www.sick.com/TTK50)

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M23, 17-pin, straight Cable: HIPERFACE®, unshielded, 1 m	DSL-2317-G01MJB2	2071328
	Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: HIPERFACE®, unshielded, 1 m	DSL-2317-G01MJB6	2071327
	Head A: female connector, M12, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: HIPERFACE®, unshielded, 1 m	DSL-2317-G01MJC1	2071329
	Head A: female connector, terminal box, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: HIPERFACE®, unshielded, 1 m	DSL-2317-G01MJC6	2071330

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)