

TTK50S-HXM0-K02

TTK50

LINEAR MOTOR FEEDBACK SYSTEMS

SICK
Sensor Intelligence.

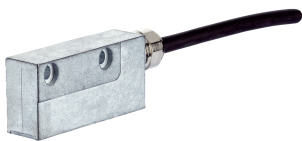


Illustration may differ

Ordering information

Type	Part no.
TTK50S-HXM0-K02	1099699

Magnetic tape not included with delivery

Other models and accessories → www.sick.com/TTK50



Detailed technical data

Features

Items supplied	Magnetic tape not included with delivery
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Safety-related parameters

Safety integrity level	SIL 2 (IEC 61508), SILCL2 (EN 62061) ¹⁾
Category	3 (EN ISO 13849)
Maximum demand rate	Continuous (analog signals)
Performance level	PL d (EN ISO 13849)
PFH (mean probability of a dangerous failure per hour)	2.02×10^{-8} ²⁾
T_M (mission time)	20 years (EN ISO 13849)
Safety-related accuracy	± 25 mm, = ± 1/4 pin length
Safety-related measuring step	0.25 mm

¹⁾ For more detailed information on the exact configuration of your machine/unit, please consult your relevant SICK branch office.

²⁾ The values displayed apply to a diagnostic degree of coverage of 90%, which must be achieved by the external drive system.

Performance

Measuring step	0.244 µm For interpolation of the sine/cosine signals with, e. g., 12 bits
Measuring range	0 mm ... 940 mm
Resolution	1 µm
Length of period	1 mm
Traversing speed	1.3 m/s, ≤ 10 m/s up to which the absolute position can be reliably produced, dynamic operation (Sin/Cos)
Repeatability	< 5 µm
System accuracy	+20 °C
Measured value backlash	< 10 µm

Interfaces

Code type	Binary
Available memory area	1,972 Byte (E ² PROM 2048)

Electrical data

Supply voltage	7 V DC ... 12 V DC
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¹⁾ 100 mA approx. during adjustment.

Recommended supply voltage	8 V DC
Operating current	≤ 55 mA (without load) ¹⁾
Connection type	Cable, 8-wire (4 x 2 x 0.15 mm ²), 5 m

¹⁾ 100 mA approx. during adjustment.

Mechanical data

Dimensions	See dimensional drawing
Scope of delivery	Magnetic tape not included with delivery
Weight	0.06 kg, without cable
Read head material	Zinc diecast

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 ¹⁾
Enclosure rating	IP67, with mating connector inserted (IEC 60529)
Operating 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 ²⁾
Maximum permitted field strength	< 150 kA/m (< 190 mT), to ensure that the magnetic tape is not permanently damaged

¹⁾ According to the listed standards, EMC is guaranteed if the motor feedback system is connected to the central grounding point of the motor controller via a cable shield and the encoder housing lays over a large area of the motor potential. If other shielding concepts are used, users must perform their own test.

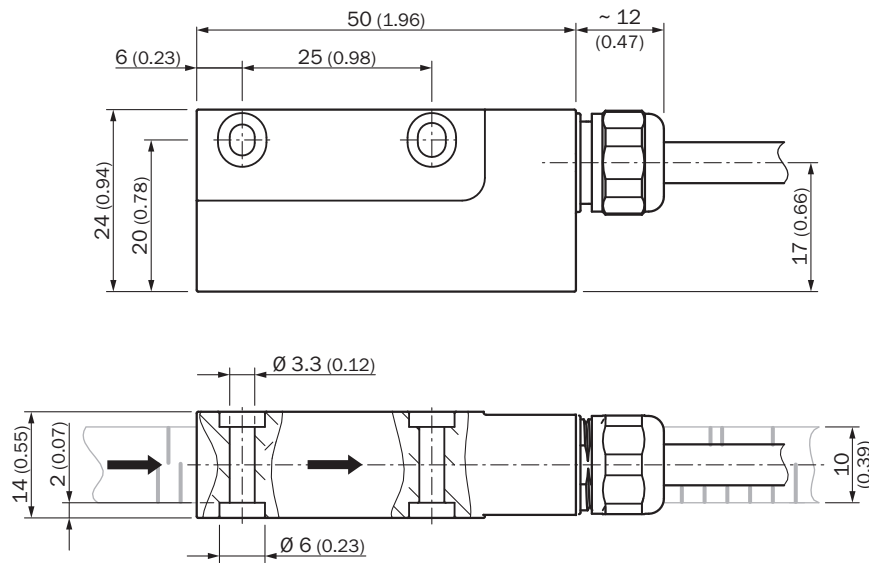
²⁾ The maximum permitted external field influence is reached when the position value deviates from the original value (without external field influence) by more than 5 µm. This value is reached when, at the sensor location, a field strength of 3 kA/m to 4 kA/m (3.8 mT to 5 mT) occurs in addition to the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

Classifications

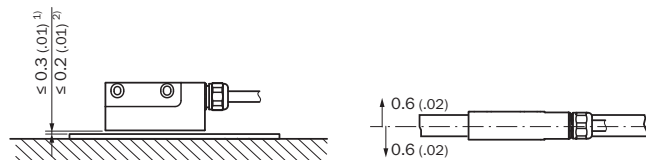
ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27273805
ECLASS 11.0	27273902
ECLASS 12.0	27273902
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing (Dimensions in mm (inch))

Read head



Position tolerance

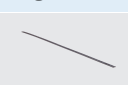



General tolerances according to DIN ISO 2768-mk

- ① Without cover strip
- ② With cover strip

Recommended accessories

Other models and accessories → www.sick.com/TTK50

	Brief description	Type	Part no.
Magnets			
	Magnetic tape length: 1 m, magnetic tape width: 10 mm, weight: 0.18 kg/m, magnetic tape material: 17410 hard ferrite 9/28 P, substrate tape material: steel, period length 1 mm, operating temperature range: -20 °C ... 100 °C, storage temperature range: -30 °C ... 100 °C, temperature coefficient: (11 ± 1) µm/K/m	MVM-1MO-2MC-MKLB	6049001
Programming and configuration tools			
	SVip® LAN programming tool for all motor feedback systems	PGT-11-S LAN	1057324

	Brief description	Type	Part no.
Nuts and screws			
	Mounting kit for SIL2 applications for safe and easy mounting of the TTK50S; 2x countersunk head screws, 1x mounting plate	BEF-MK-S13	2109583
Others			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M23, 12-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: HIPERFACE® • Cable: 1 m, 8-wire • Description: HIPERFACE®, unshielded 	DSL-2317-G01MJB2	2071328
	<ul style="list-style-type: none"> • Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: HIPERFACE® • Cable: 1 m, 8-wire • Description: HIPERFACE®, unshielded 	DSL-2317-G01MJB6	2071327
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: HIPERFACE® • Cable: 1 m, 8-wire • Description: HIPERFACE®, unshielded 	DSL-2317-G01MJC1	2071329
	<ul style="list-style-type: none"> • Connection type head A: Female connector, terminal box, 8-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: HIPERFACE® • Cable: 1 m, 8-wire • Description: HIPERFACE®, unshielded 	DSL-2317-G01MJC6	2071330
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Description: Shielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.25 mm² ... 0.5 mm² 	DOS-1208-GA	6028369
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 8-pin, straight, A-coded • Description: Shielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.5 mm² 	STE-1208-GA	6028370
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Signal type: Incremental, SSI • Cable: CAT5, CAT5e • Description: Incremental, SSI, shielded, Head A: female connector, M12, 8-pin, straight, A encoded, shielded, for cable diameter 4 mm ... 8 mm Head B: - Operating temperature: -40 °C ... +85 °C • Connection systems: IDC quick connection • Permitted cross-section: 0.14 mm² ... 0.34 mm² 	DOS-1208-GA01	6045001
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, angled, A-coded • Signal type: Ethernet • Cable: CAT5, CAT5e • Description: Ethernet, shielded, M12 female connector, A-coded • Connection systems: QUICKON connection • Permitted cross-section: 0.14 mm² ... 0.34 mm² 	DOS-1208-WA	6043358
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 8-pin, straight, A-coded • Signal type: Incremental • Cable: CAT5, CAT5e • Description: Incremental, shielded, Head A: male connector, M12, 8-pin, straight, A coded, shielded, for cable diameter 4 mm ... 8 mm Head B: - Operating temperature: -40 °C ... +85 °C • Connection systems: IDC quick connection • Permitted cross-section: 0.14 mm² ... 0.34 mm² 	STE-1208-GA01	6044892
	LTG-2708-MW	LTG-2708-MW	6028361

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:

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