

### Magnetic cylinder sensor for T-slot Operating instructions

#### Safety notes

- Magnetic cylinder sensor for T-slot for categories II 3G and II 3D
- Ambient temperature  $T_a = -20^{\circ}\text{C} \dots +40^{\circ}\text{C} / 45^{\circ}\text{C} / 50^{\circ}\text{C}$  (depending on continuous current and operating voltage; see "Sensor performance data" for details)
- Temperature class T4, or maximum surface temperature of  $T_s = 135^{\circ}\text{C}$
- Enclosure rating IP 67
- Read the operating instructions before starting operation.
- Connection, assembly, and commissioning only by competent technicians.
- No safety component in accordance with EU machine guidelines.
- It is strongly recommended to mount the sensor completely within the T-slot. However, this does not provide adequate levels of safety against impacts in the sense of Ex standard EN 60079-0. The operator of the sensor must therefore ensure that the sensor is not exposed to any mechanical impacts.
- The sensor should be protected against UV light.
- Do not disconnect the cable or plug when it is energized.
- The cable should be protected against physical damage and a cord grip have to be installed.
- The fuse protection clips provided must be assembled over the plug connector on sensors that are equipped with an M8 or M12 plug on the cable end.

#### Proper Use

This magnetic cylinder sensor for T-slot is used for detecting magnetic fields in explosion-proof areas.

The SICK BEF-KHZ-ST1 (order no. 2022703) adapter is available for use with dovetail slot cylinders, the SICK BEF-KHZ-PT1 (order no. 2022702) adapter for profile cylinders / tie-rod cylinders, and the SICK BEF-KHZ-RT1-25 (order no. 5311171), BEF-KHZ-RT1-63 (order no. 5311172), and BEF-KHZ-RT1-130 (order no. 5311506) adapters for roundbody cylinders. The limitations referred to above regarding impact protection are also applicable here.

#### Performance data of sensor

Ambient operating temperature	Operating voltage	Continuous current
$T_a = -20^{\circ}\text{C} \dots +40^{\circ}\text{C}$	$U_b = 10 \dots 30 \text{ V DC}$	$I_s \leq 100 \text{ mA}$
$T_a = -20^{\circ}\text{C} \dots +45^{\circ}\text{C}$	$U_b = 10 \dots 30 \text{ V DC}$	$I_s \leq 70 \text{ mA}$
$T_a = -20^{\circ}\text{C} \dots +50^{\circ}\text{C}$	$U_b = 10 \dots 26 \text{ V DC}$	$I_s \leq 50 \text{ mA}$

#### Commissioning

The following must be observed when connecting the sensor to a voltage source:

- The performance data (operating voltage, continuous current).
- The connection diagram of the sensor.

#### Maintenance

The magnetic cylinder sensor for T-slot from SICK does not require any maintenance. We recommend that you check the connections at regular intervals.

# SICK

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## Magnetic cylinder sensor for T-slot/ Magnetischer Zylindersensor für T-Nut

 II 3G Ex nA IIC T4 Gc X  
 II 3D Ex tc IIIC T135°C Dc X

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 Chile Phone +56 2 2274 7430  
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   852-2153 6300  
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### Magnetischer Zylindersensor für T-Nut Betriebsanleitung

#### Sicherheitshinweise

- Magnetischer Zylindersensor für T-Nut für Kategorie II 3G und II 3D
- Umgebungstemperatur  $T_a = -20^{\circ}\text{C} \dots +40^{\circ}\text{C} / 45^{\circ}\text{C} / 50^{\circ}\text{C}$  (abhängig von Dauerstrom und Betriebsspannung; Details siehe unter „Leistungsdaten des Sensors“)
- Temperaturklasse T4, bzw. maximale Oberflächentemperatur von  $T_s = 135^{\circ}\text{C}$
- Schutzart IP 67
- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Montage, Anschluss und Inbetriebnahme nur durch Fachpersonal.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.
- Es wird dringend empfohlen den Sensor komplett in der T-Nut zu montieren. Trotzdem wird keine ausreichende Sicherheit gegenüber Schlägen im Sinne der Ex-Norm EN 60079-0 erreicht. Der Betreiber des Sensors hat daher sicherzustellen, dass der Sensor keinen mechanischen Schlägen ausgesetzt wird.
- Der Sensor ist vor UV-Licht zu schützen.
- Leitung bzw. Stecker nicht unter Spannung trennen.
- Die Leitung ist geschützt zu verlegen, bzw. es ist eine zusätzliche Zugentlastung vorzusehen.
- Bei Sensoren, die am Leitungsende über einen M8- bzw. M12-Stecker verfügen, müssen über die Steckverbindung die beiliegenden Abzugs-Sicherungs-Clips montiert werden.

#### Bestimmungsgemäße Verwendung

Dieser Magnetische Zylindersensor für T-Nut wird zum Erfassen von magnetischen Feldern in explosionsgefährdeten Bereichen eingesetzt.

Für die Verwendung an Schwalbenschwanznut-Zylindern stehen die SICK-Adapter BEF-KHZ-ST1 (Bestell-Nr. 2022703), bei Profilstangen- / Zugstangenzy lindern die SICK-Adapter BEF-KHZ-PT1 (Bestell-Nr. 2022702) und bei Rundzy lindern die SICK-Adapter BEF-KHZ-RT1-25 (Bestell-Nr.5311171), BEF-KHZ-RT1-63 (Bestell-Nr.5311172) und BEF-KHZ-RT1-130 (Bestell-Nr.5311506) zur Verfügung. Die oben genannte Einschränkung bezüglich Schutz gegenüber Schlägen gilt auch hier.

#### Leistungsdaten des Sensors

Temperaturbereich	Betriebsspannung	Dauerstrom
$T_a = -20^{\circ}\text{C} \dots +40^{\circ}\text{C}$	$U_b = 10 \dots 30 \text{ V DC}$	$I_s \leq 100 \text{ mA}$
$T_a = -20^{\circ}\text{C} \dots +45^{\circ}\text{C}$	$U_b = 10 \dots 30 \text{ V DC}$	$I_s \leq 70 \text{ mA}$
$T_a = -20^{\circ}\text{C} \dots +50^{\circ}\text{C}$	$U_b = 10 \dots 26 \text{ V DC}$	$I_s \leq 50 \text{ mA}$

#### Inbetriebnahme

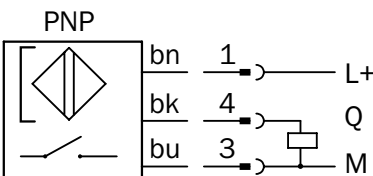
Beim Anschluss des Sensors an eine Spannungsquelle müssen folgende Punkte berücksichtigt werden:

- Die Leistungsdaten (Betriebsspannung, Dauerstrom).
- Das Anschlussdiagramm des Sensors.

#### Wartung

Der Magnetische Zylindersensor für T-Nut von SICK ist wartungsfrei. Wir empfehlen, in regelmäßigen Abständen die Anschlüsse zu überprüfen.


### A Connection diagram / Anschlussschema



Wire colour / Aderfarbe	Contact / Kontakt	Assignment / Belegung
bn brown / braun	1	L+
bk black / schwarz	4	Q
bu blue / blau	3	M

Type / Typ	Part no. / Bestell-Nr.	Type / Ausführung
MZT8-03VPS-KWX	1073405	2 m cable / 2 m Leitung
MZT8-03VPS-KPX	1073406	0.3 m cable with M8 male connector incl. knurl / 0,3 m Leitung mit Stecker M8 inkl. Rändel
MZT8-03VPS-KQX	1073407	0.3 m cable with M12 male connector / 0,3 m Leitung mit Stecker M12






## EU Declaration of conformity

The undersigned, representing the following manufacturer

SICK AG  
 Erwin-Sick-Strasse 1  
 79183 Waldkirch  
 Germany

herewith declares, that the products listed above are in conformity with the provisions of the following EC directives (including all applicable amendments), and that the standards and/or technical specifications referenced below have been applied.

Following inspection result has been achieved for the listed devices:

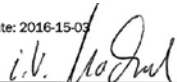
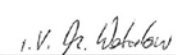
 II 3G Ex nA IIC T4 Gc X  
 II 3D Ex tc IIIC T135°C Dc X

The housing of the sensor offers an insufficient protection against mechanical hits in the sense of the Ex-standards. This has to be taken into account while operating the sensor (see instruction manual).

**Used directives and standards:**

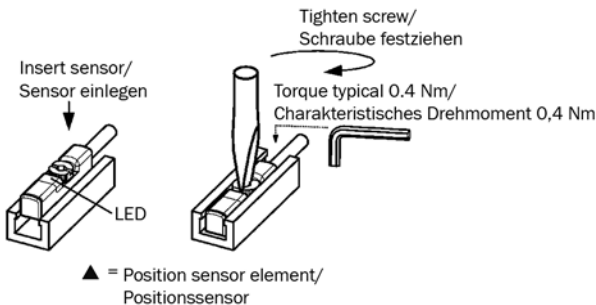
Directives	Title or short description	Issued
Official Journal of the EU L96		
Directive 2014/30/EU	EMC-Directive - electromagnetic compatibility	2014 - 02
Directive 2014/34/EU	Equipment and protective systems intended for use in potentially explosive atmosphere	2014 - 02
Directives	Title or short description	Issued
Official Journal of the EU L174		
Directive 2011/65/EU	The restriction of the use of certain hazardous substances in electrical and electronic equipment	2011 - 07
Standards	Title or short description	Issued
EN 50581	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	2012 - 09
EN 60947 - 5 - 2	Low voltage switchgear and controlgear - part 5-2: Control circuit devices and switching elements - proximity switches	2007 - 12
EN 60947 - 5 - 2 / A1	Low voltage switchgear and controlgear - part 5-2: Control circuit devices and switching elements - proximity switches (amendment)	2012 - 11
EN 60079 - 0	Explosive atmospheres - part 0: Equipment - General requirements	2012 - 08
EN 60079 - 0 / A11	Explosive atmospheres - part 0: Equipment - General requirements (amendment)	2013 - 11
EN 60079 - 15	Explosive atmospheres - part 15: Equipment protection by type of protection „n“	2010 - 05
EN 60079 - 31	Explosive atmospheres - part 31: Equipment dust ignition protection by enclosure "T"	2014 - 07

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その他の営業所は [www.sick.com](http://www.sick.com) よりご覧ください。予告なしに変更されることがあります。記載されている製品機能および技術データは保証を明示するものではありません。

