

Gear Tooth Speed and Direction Sensor

SD74, SD84, SDB4 series



Description

The SD74, SD84 and SDB4 sensor series are Hall Effect products for measuring very slow movements of ferromagnetic targets. They work with an Open Collector output. Immersion depths from 20 mm to 60 mm available.

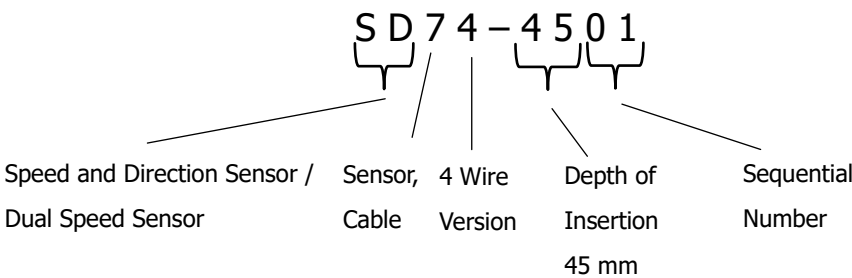
Features

- From 0.1 Hz up to 20 kHz sensing capability
- Can be used with unregulated power supply
- RoHS compliant
- IP67 & IP69 (excluding wire / connector)
- Typical air gap range of 0.3 – 2.2 mm (0.01" to 0.09")*

Standard parts

Part Number	Shaft Length	Connection Type	Mounting Flange Design
SD74-2001	20 mm	Light plastic-sheathed cable, 4-core, 0.34 mm ²	-
SD74-3501	35 mm	Light plastic-sheathed cable, 4-core, 0.34 mm ²	Slot hole
SD74-3502	35 mm	Light plastic-sheathed cable, 4-core, 0.34 mm ²	Round hole
SD74-4502	45 mm	Light plastic-sheathed cable, 4-core, 0.34 mm ²	Slot hole
SD74-6001	60 mm	Light plastic-sheathed cable, 4-core, 0.34 mm ²	-

Order Code



Environmental Specifications

Vibration	Broadband noise 10 Hz 10m ² /s ³ , 50 Hz 10m ² /s ³ , 1000 Hz 0.1 m ² /s ³ , 8h per axis, three axes
Shock	
Maximum Speed Detection	+/- 20 kHz
Operating Temperature	-40 °C to +140 °C
Storage Temperature	-20 °C to +50 °C
Ingress protection	IP67 & IP69 (excluding wire / connector)

Electrical Specifications

Supply Voltage	4.5 V – 24 V
Maximum Input Voltage	max. 28 V
Maximum Reverse Voltage	-18 V (supply line); -0.5 V (output signals)
Supply Current	max. 13 mA
Output Sink Current	max. 25 mA
Recommended Pull-up Resistor	See Table
Phase Shift, see graphic	90° +/- 45° clockwise
Channel B before channel A	270° +/- 45° anticlockwise
Pulse Duty Factor	50% +/- 10%

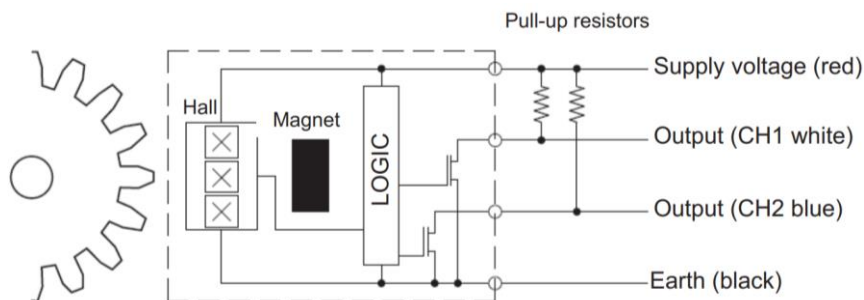
Mechanical Specifications

Housing Material	Glass-fibre reinforced thermoplastic
Maximum Installation Torque	10 Nm (bolt ISO 4762-M6-8.8, washer ISO 7092-6-200HV)
Operating Air Gap / Sensing Distance*	0.3 mm – 2.2 mm
* With recommended sensing wheel, see graphic	
O-ring	11.8 x 1.8-FKM-80

Recommended External Pull-up Resistor

Volt DC	5	9	12	15	24
Ohms	470	820	1 k	1.2 k	2.2 k

Open Collector Sinking Block Diagram



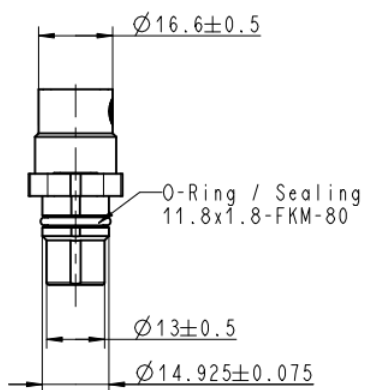
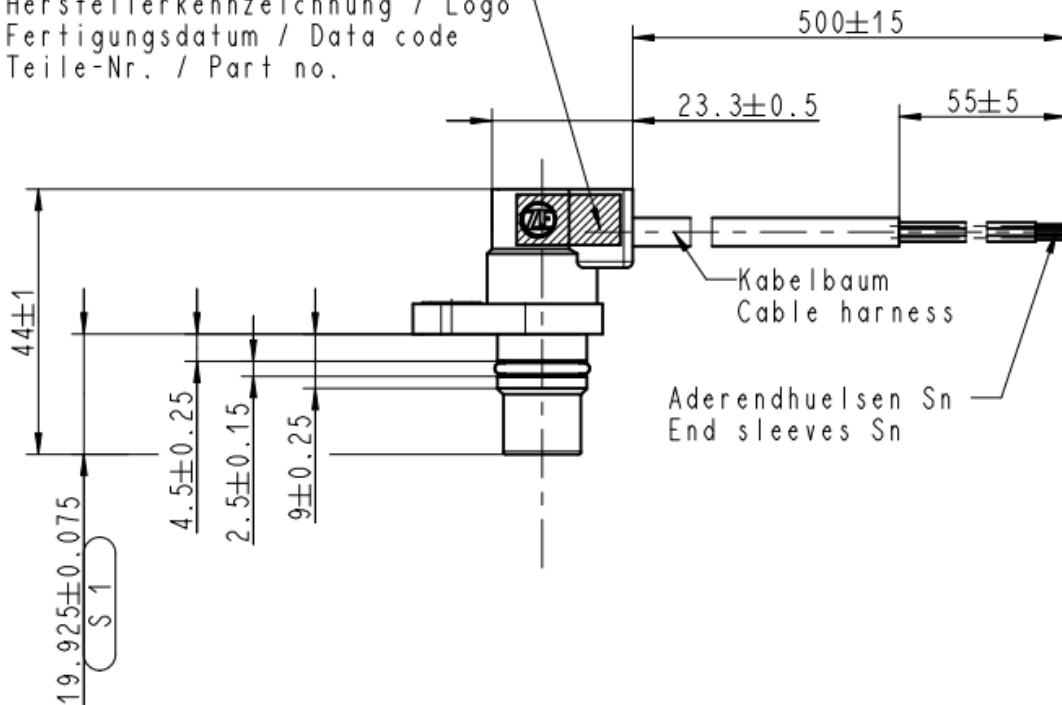
<https://switches-sensors.zf.com>



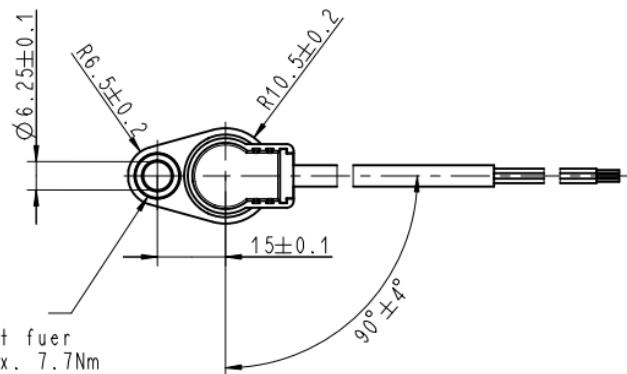
SD74-2001

Bereich Kennzeichnung
Area of Marking

- Herstellerkennzeichnung / Logo
- Fertigungsdatum / Data code
- Teile-Nr. / Part no.



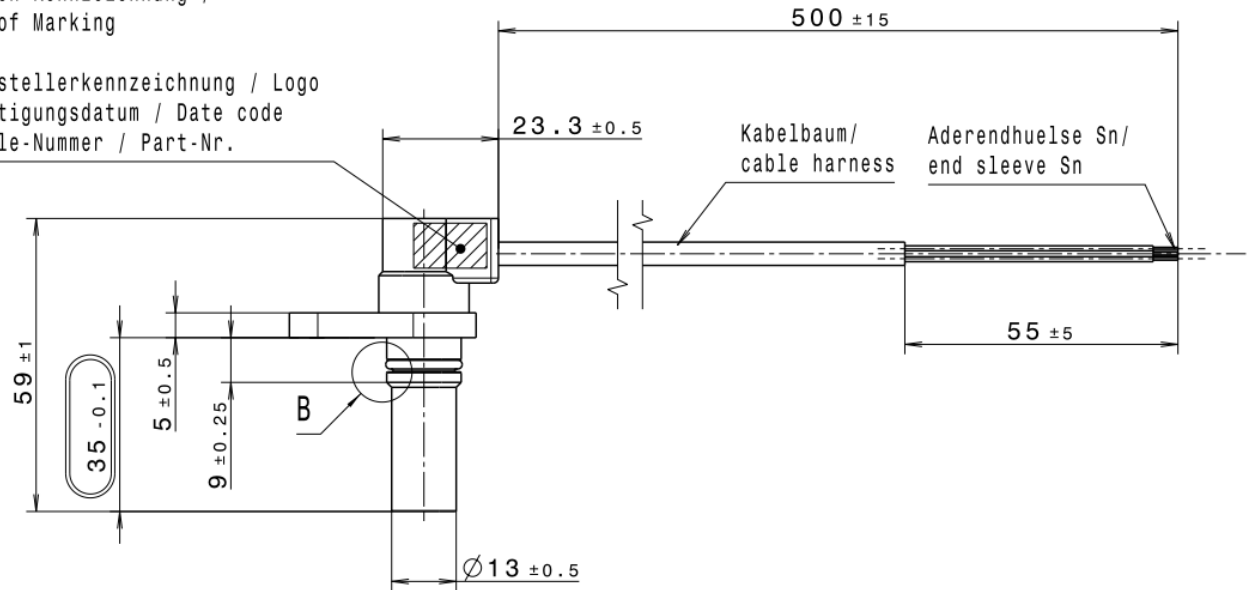
CuZn-Buchse;
Anzugsdrehmoment fuer
Schraube M6: max. 7.7Nm
Brass bush;
Tightening torque for
screw M6: max. 7.7Nm



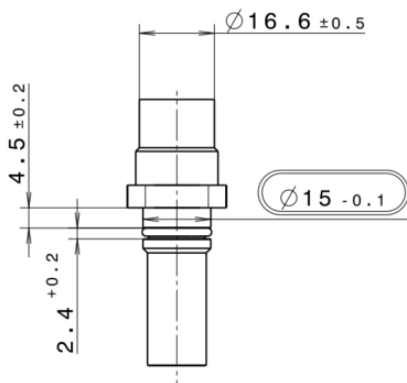
Front view
Scale: 1:1

Bereich Kennzeichnung /
Area of Marking

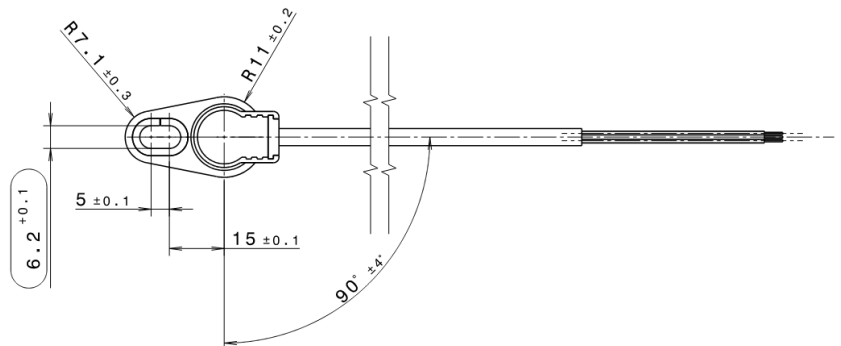
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- Fertigungsdatum / Date code
- Teile-Nummer / Part-Nr.



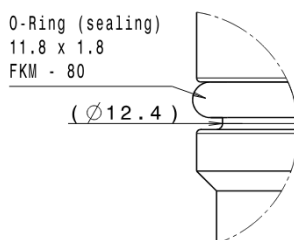
Left view
Scale: 1:1



Top view
Scale: 1:1

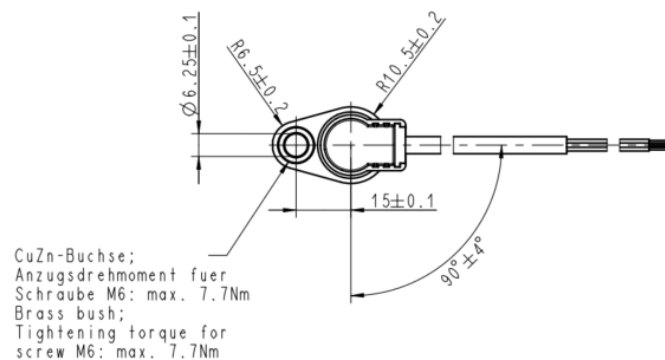
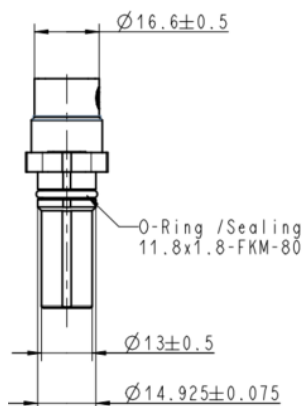
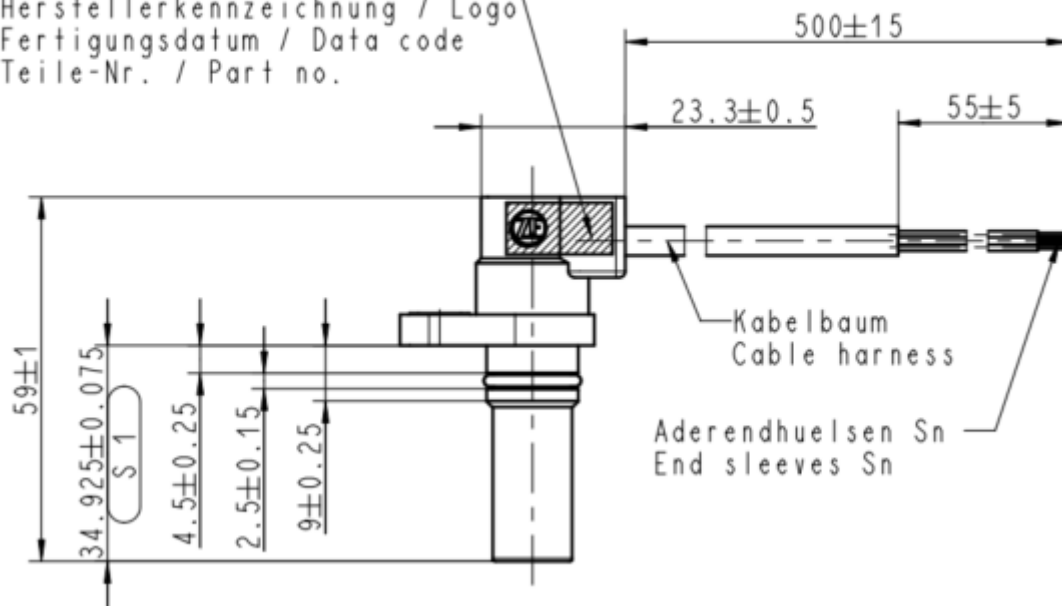


Detail B
Scale: 5:1



Bereich Kennzeichnung
Area of Marking

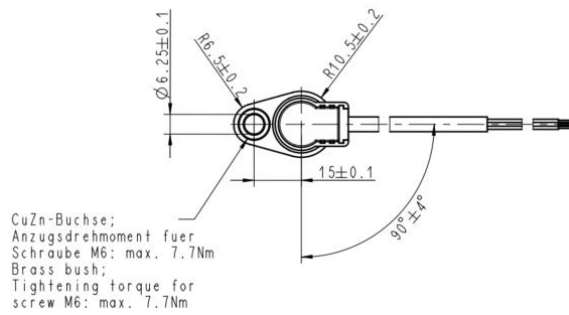
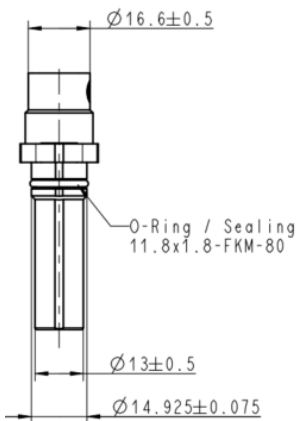
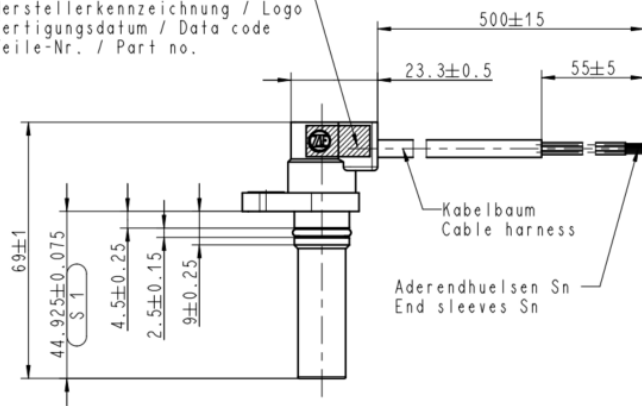
- Herstellerkennzeichnung / Logo
- Fertigungsdatum / Data code
- Teile-Nr. / Part no.



SD74-4502

Bereich Kennzeichnung
Area of Marking

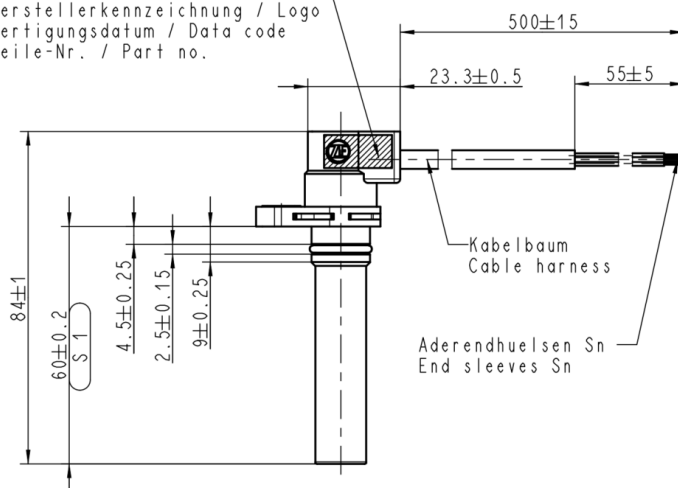
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- Fertigungsdatum / Data code
- Teile-Nr. / Part no.

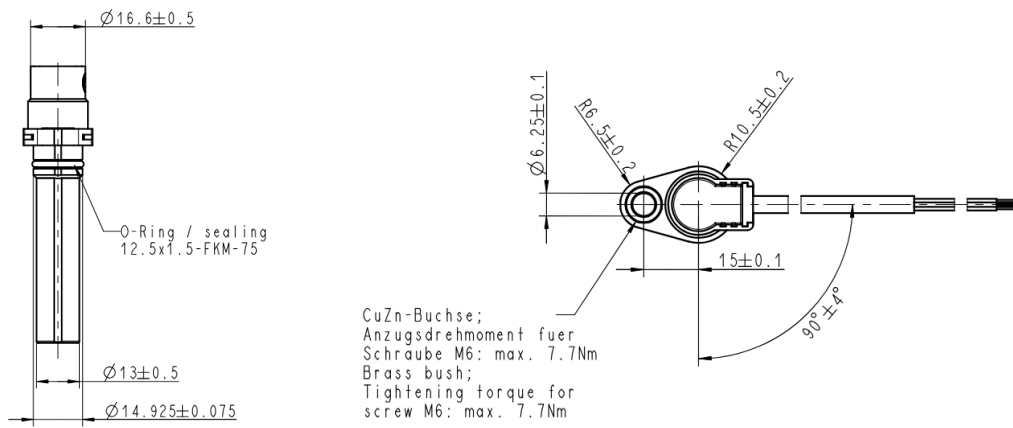


SD74-6001

Bereich Kennzeichnung
Area of Marking

- Herstellerkennzeichnung / Logo
- Fertigungsdatum / Data code
- Teile-Nr. / Part no.





Installation

