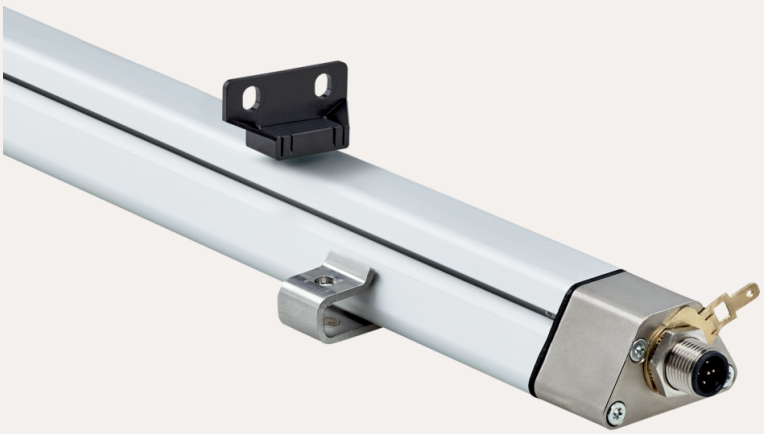
SICK.COM



DATA SHEET

DAXLVN-0650BA080000M01

DAX
Magnetostrictive linear encoders

SICK Sensor Intelligence



Illustration may differ

MAGNETOSTRICTIVE LINEAR ENCODERS

DAXLVN-0650BA080000M01

ORDERING INFORMATION

Type	part no.
DAXLVN-0650BA080000M01	1134501

Further device versions and accessories at www.sick.com/DAX

DETAILED TECHNICAL DATA

SAFETY-RELATED PARAMETERS

$MTTF_D$ (mean time to dangerous failure)	123 years [1]

[1] This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

PERFORMANCE

Linearity	≤ 0.03% F.S. (Minimum 90 µm) [1] [2]
Repeatability	≤ ± 20 µm
Measured values	Positioning
Measuring range	0 mm ... 650 mm
Unusable range	
Null zone	55 mm
Damping zone	63 mm
Magnet type	
Magnet shape	Small block magnet MAG-B-180-01
Dimensions of magnet	11 mm x 33 mm x 18 mm
Configured for number of magnets	1 piece
Magnet travel speed	Any
Measuring frequency (internal)	< 2 ms

[1] Systematic position measurement deviation according to DIN ISO 1319-1 (value includes all systematic errors or deviations from the actual position value, e.g. repeatability and hysteresis).

[2] In principle, the size of the measurement deviation is limited by the resolution of the interface.

INTERFACES

Communication interface	-
Communication Interface detail	Voltage
Signal type	Analog (voltage)

Output signal	0 V ... 10 V
Signals	
Number of signals	Two output signals (one output signal + an inverted second output signal)
Sequence of signals	Signal 1: rising, signal 2: falling
Load resistance	> 10 kΩ

ELECTRONICS

Connection type	Male connector, M12, 8-pin
Pinouts	1=Output signal ground (0 V PIN 3); 2=Output signal ground (0 V PIN 5); 3=Signal 2; 4=n.c.; 5=Signal 1; 6=Power ground; 7=+24 V DC; 8=n.c.
Male connector coding	A-coded
Supply voltage	24 V DC (± 20%)
Reverse polarity protection	Up to –30 V DC
Residual ripple	≤ 0.28 V_{pp}
Dielectric strength	500 V DC, 0 V against housing
Over voltage protection	≤ 36 V DC

MECHANICS

Mechanical design	DAX Low Profile
Material	
Housing	Aluminum (anodised), zinc, stainless steel, brass
Mounting bracket	Stainless steel 1.4301

AMBIENT DATA

EMC	According to EN 61000-6-2 and EN 61000-6-4
Enclosure rating	IP65, IP67 [1]
Temperature	
Operating temperature range	–40 °C ... +85 °C
Storage temperature range	–40 °C ... +85 °C
Permissible relative humidity	90 % (Condensation not permitted)
Resistance to shocks	100 g, 6 ms (IEC 60068-2-27)
Resistance to vibration	8 g / 10...2,000 Hz according to IEC 60068-2-6 [2]

[1] In correctly assembled mating connector.

[2] Resonance frequencies can influence signal quality.

GENERAL NOTES

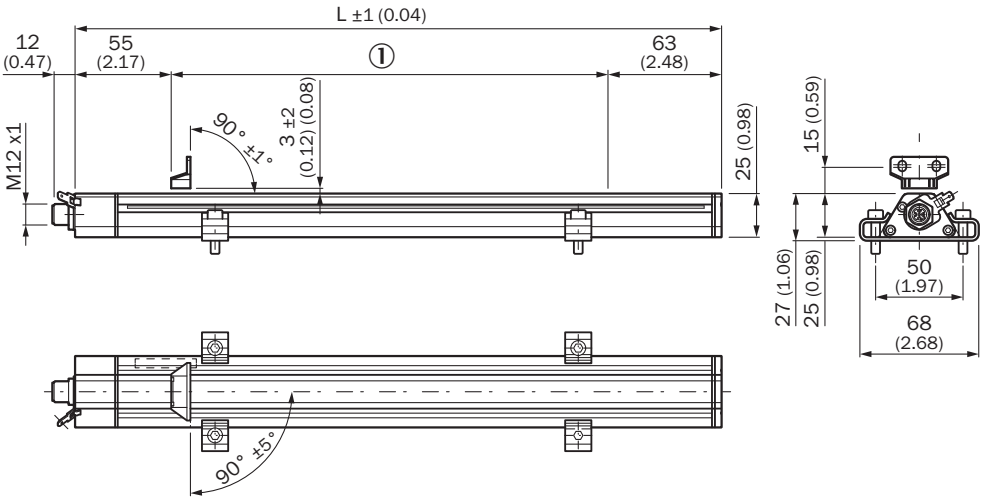
Items supplied	Mounting brackets and position magnet included. Mounting material for base not included.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

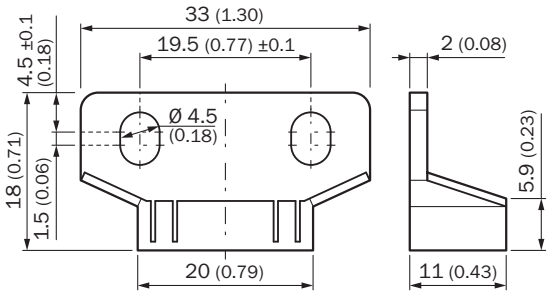
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DAX LOW PROFILE



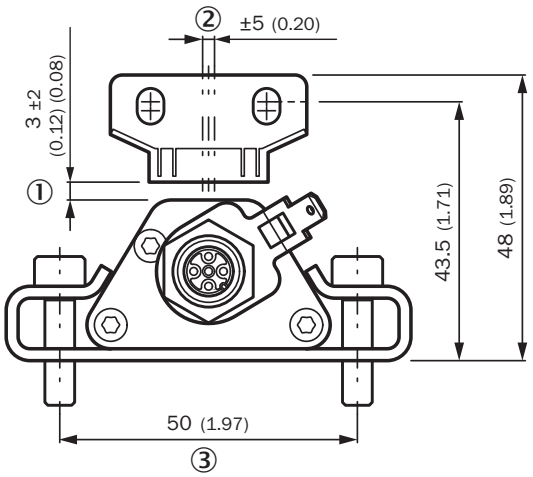
Dimensions in mm (inch)
① Measuring range

BLOCK MAGNET MAG-B-180-01 (2129171)



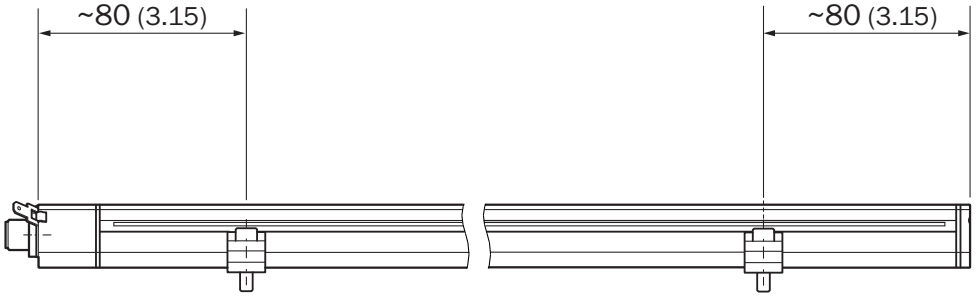
Dimensions in mm (inch)

DISTANCE TOLERANCE



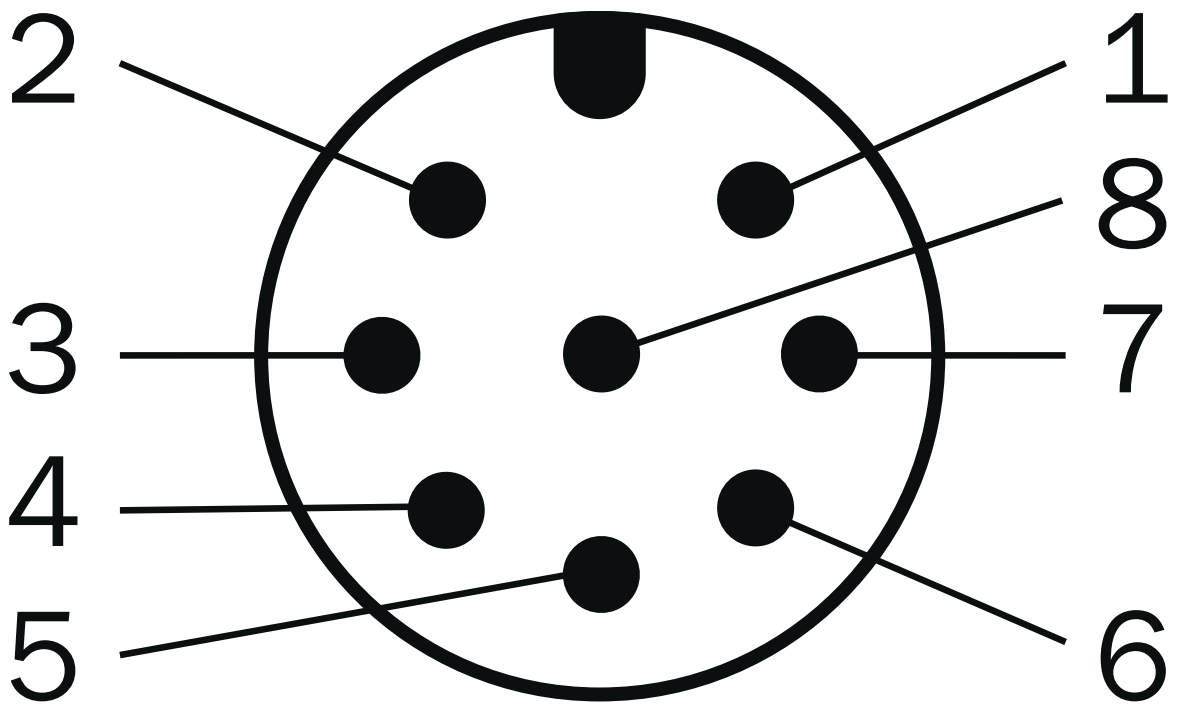
Dimensions in mm (inch)
① nominal distance + permissible amount of distance tolerance
② permissible center offset
③ recommendation: M5 x 20

POSITIONING OF MOUNTING BRACKET



Dimensions in mm (inch)

ANSCHLUSSBELEGUNG



M12 male connector, 8-pin	Signal
1	Output signal ground (0 V PIN 3)
2	Output signal ground (0 V PIN 5)
3	Signal 2
4	n.c.
5	Signal 1
6	Power Ground
7	+24 V DC
8	n.c.

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1134501

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

SICK

Sensor Intelligence