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DATA SHEET

DAXTVN-0651RA1B0P00M01

DAX
Magnetostrictive linear encoders

SICK Sensor Intelligence



Illustration may differ

MAGNETOSTRICTIVE LINEAR ENCODERS

DAXTVN-0651RA1B0P00M01

ORDERING INFORMATION

Type	part no.
DAXTVN-0651RA1B0P00M01	1140433

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	≤ 0.02% F.S. (Minimum 60 µm) [1] [2]
Repeatability	≤ ± 20 µm
Measured values	Positioning
Measuring range	0 mm ... 651 mm
Unusable range	
Null zone	50 mm
Damping zone	60 mm
Magnet type	
Magnet shape	Ring magnet MAG-O-255-01
Dimensions of magnet	Ø 25.5 mm, Ø 13.5 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 Threaded
Thread	
Thread shape	3/4"-16UNF
Thread offset	Without thread offset
Material	
Pressure pipe	Stainless steel 1.4404 (AISI 316L)
Housing	Aluminum (anodised), zinc, stainless steel, brass
Flange	Stainless steel 1.4305 (AISI 303)

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 ... +65 °C [2]
Permissible relative humidity	90 % (Condensation not permitted)
Resistance to shocks	100 g, 6 ms (IEC 60068-2-27)
Resistance to vibration	15 g / 10...2,000 Hz according to IEC 60068-2-6
Nominal operating pressure (P_N)	350 bar
Max. overload pressure during operation (P_N x 1.2)	420 bar
Max. test pressure in cylinder (P_N x 1.5)	530 bar

[1] In correctly assembled mating connector.

[2] Caused by dry storage of the O-ring in uninstalled state (no coating with oil).

GENERAL NOTES

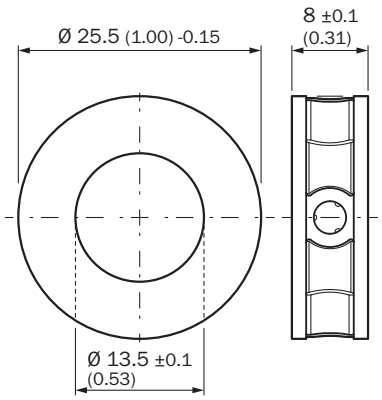
Items supplied	Accessories not included with delivery, please order separately. Delivery without position magnet.

CERTIFICATES

EU declaration of conformity	✓

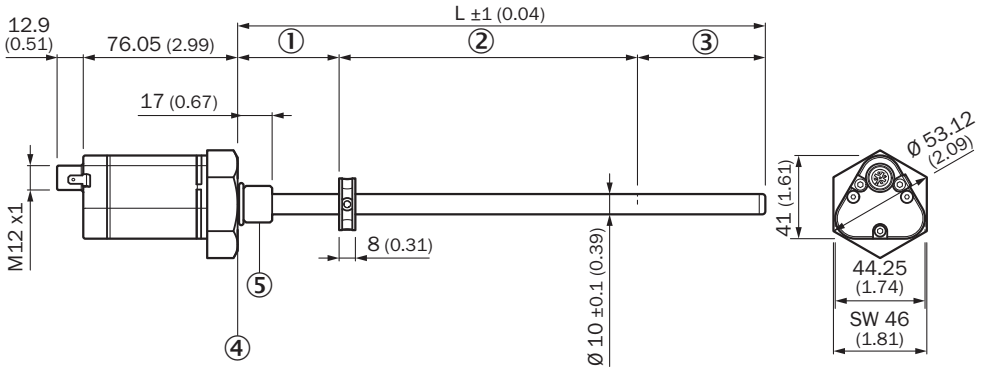
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

RING MAGNET MAG-O-255-01 (2129168)



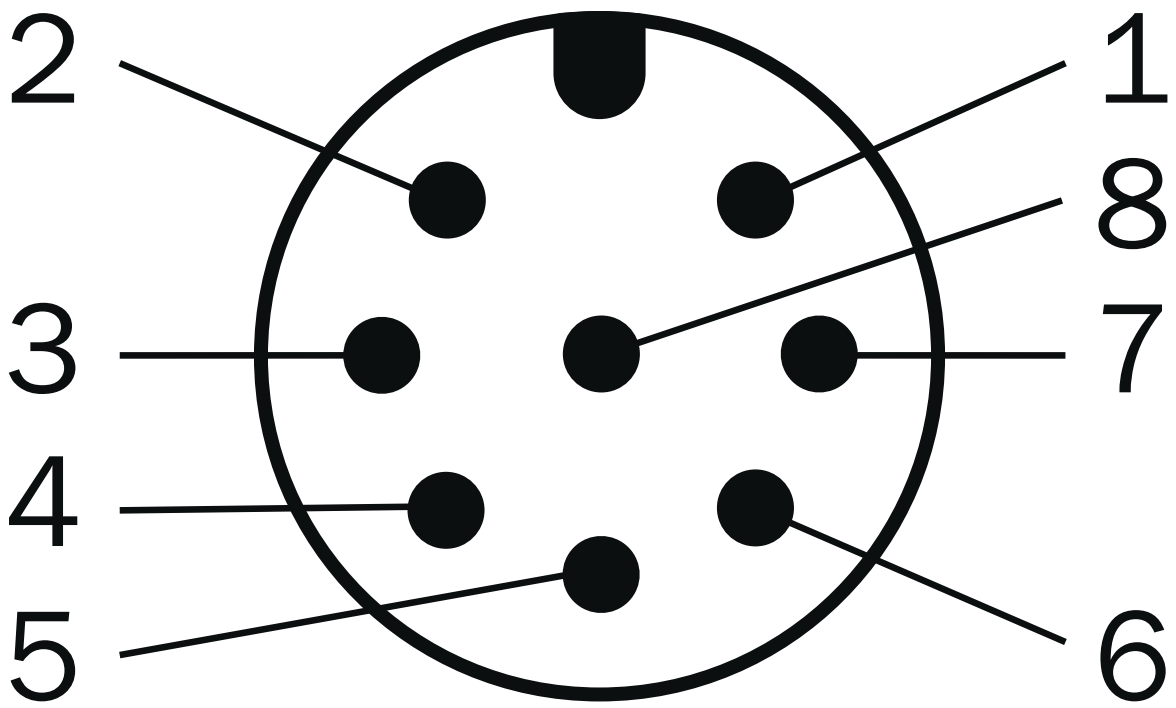
Dimensions in mm (inch)

DAX THREADED



Dimensions in mm (inch)
① null zone
② Measuring range
③ damping zone
④ Flat support surface
⑤ M18x1.5 / UNF 3/4"-16

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/1140433

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SICK AT A GLANCE

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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

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