



# DAXTAN-1800RA1FOJ00D00

DAX

MAGNETOSTRICTIVE LINEAR ENCODERS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	part no.
DAXTAN-1800RA1FOJ00D00	1143168

Other models and accessories → [www.sick.com/DAX](http://www.sick.com/DAX)



### Detailed technical data

#### Safety-related parameters

<b>MTTF<sub>D</sub> (mean time to dangerous failure)</b>	123 years <sup>1)</sup>
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<sup>1)</sup> 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

<b>Linearity</b>	≤ 0.02% F.S. (Minimum 60 μm) <sup>1) 2)</sup>
<b>Repeatability</b>	≤ ± 20 μm
<b>Measured values</b>	Positioning
<b>Measuring range</b>	0 mm ... 1,800 mm
<b>Unusable range</b>	
Null zone	30 mm
Damping zone	60 mm
<b>Magnet type</b>	
Magnet shape	Ring magnet
Configured for number of magnets	1 piece
<b>Magnet travel speed</b>	Any
<b>Measuring frequency (internal)</b>	< 2 ms

<sup>1)</sup> 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).

<sup>2)</sup> In principle, the size of the measurement deviation is limited by the resolution of the interface.

#### Interfaces

<b>Communication interface</b>	Analog
<b>Communication Interface detail</b>	Current
<b>Output signal</b>	4 mA ... 20 mA
<b>Signals</b>	
Number of signals	One output signal
Sequence of signals	Rising
<b>Load resistance</b>	100 Ω ... 500 Ω

## Electronics

<b>Connection type</b>	Male connector, M12, 5-pin
<b>Pinouts</b>	1=+24 V DC; 2=Signal 1; 3=Power ground; 4=Signal 2; 5=Output signal ground (0 V)
<b>Male connector coding</b>	A-coded
<b>Supply voltage</b>	24 V DC (± 20%)
<b>Current consumption</b>	50...100 mA
<b>Reverse polarity protection</b>	Up to -30 V DC
<b>Residual ripple</b>	≤ 0.28 V <sub>pp</sub>
<b>Dielectric strength</b>	500 V DC, 0 V against housing
<b>Over voltage protection</b>	≤ 36 V DC

## Mechanics

<b>Mechanical design</b>	DAX Threaded	
<b>Thread</b>	Thread shape	M18 x 1.5
	Thread offset	Without thread offset
	<b>Material</b>	
	Pressure pipe	Stainless steel 1.4404 (AISI 316L)
	Housing	Aluminum (anodised), zinc, stainless steel, brass
	Flange	Stainless steel 1.4305 (AISI 303)

## Ambient data

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-4	
<b>Enclosure rating</b>	IP65 / IP67 <sup>1)</sup>	
<b>Temperature</b>	Operating temperature range	-40 °C ... +85 °C
	Storage temperature range	-40 °C ... +65 °C <sup>2)</sup>
<b>Permissible relative humidity</b>	90 % (Condensation not permitted)	
<b>Resistance to shocks</b>	100 g, 6 ms (IEC 60068-2-27)	
<b>Resistance to vibration</b>	15 g / 10...2,000 Hz according to IEC 60068-2-6	
<b>Nominal operating pressure (P<sub>N</sub>)</b>	350 bar	
<b>Max. overload pressure during operation (P<sub>N</sub> x 1.2)</b>	420 bar	
<b>Max. test pressure in cylinder (P<sub>N</sub> x 1.5)</b>	530 bar	

<sup>1)</sup> In correctly assembled mating connector.

<sup>2)</sup> Caused by dry storage of the O-ring in uninstalled state (no coating with oil).

## General notes

<b>Items supplied</b>	
	Accessories not included with delivery, please order separately. Delivery with position magnet.

## Certificates

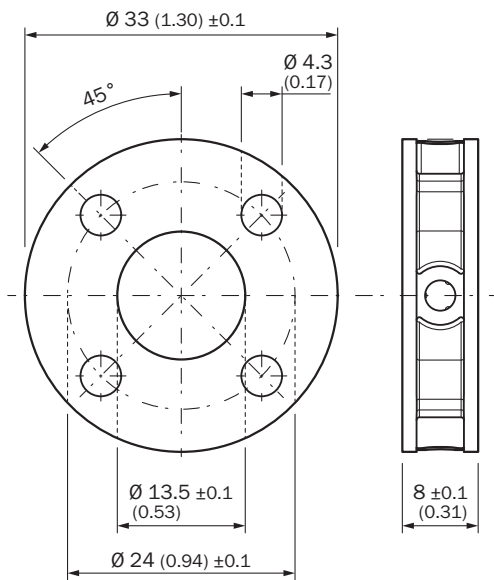
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓

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

### Classifications

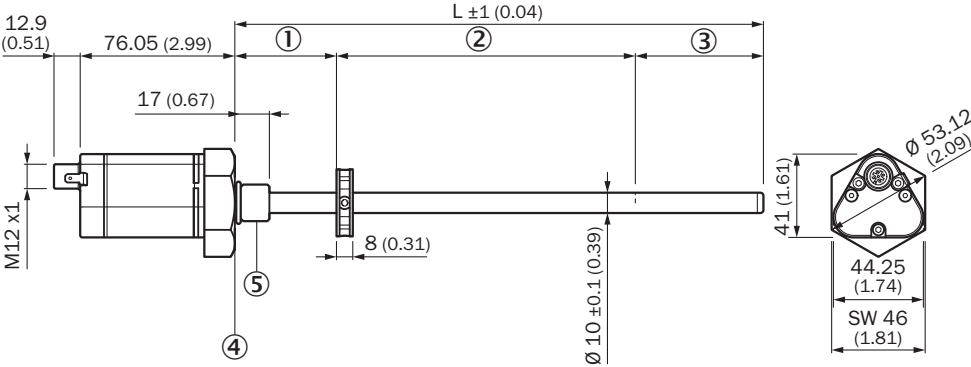
<b>ECLASS 5.0</b>	27270705
<b>ECLASS 5.1.4</b>	27270705
<b>ECLASS 6.0</b>	27270705
<b>ECLASS 6.2</b>	27270705
<b>ECLASS 7.0</b>	27270705
<b>ECLASS 8.0</b>	27270705
<b>ECLASS 8.1</b>	27270705
<b>ECLASS 9.0</b>	27270705
<b>ECLASS 10.0</b>	27270705
<b>ECLASS 11.0</b>	27270705
<b>ECLASS 12.0</b>	27274304
<b>ETIM 5.0</b>	EC002544
<b>ETIM 6.0</b>	EC002544
<b>ETIM 7.0</b>	EC002544
<b>ETIM 8.0</b>	EC002544
<b>UNSPSC 16.0901</b>	41111613

### ring magnet



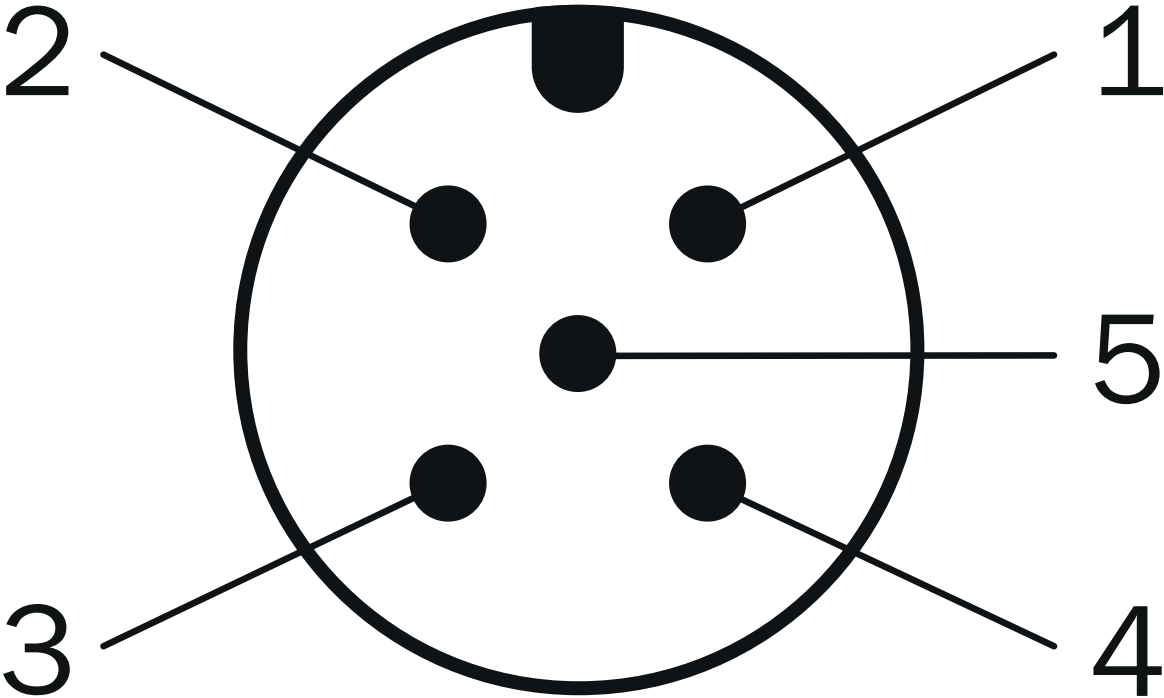
Dimensions in mm (inch)

**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**




Plug, M12, 5-pin	Signal
1	+24 V DC
2	Signal 1

Plug, M12, 5-pin	Signal
3	Power Ground
4	n.c.
5	Output signal ground (0 V)

### Recommended accessories

Other models and accessories → [www.sick.com/DAX](http://www.sick.com/DAX)

	Brief description	Type	part no.
magnets			
	<ul style="list-style-type: none"> <li><b>Product segment:</b> Magnets</li> <li><b>Product:</b> Position magnets</li> <li><b>Description:</b> Position magnet for magnetostrictive linear encoder, Ø 33.0 mm max. axial surface pressure 40 N/mm<sup>2</sup></li> </ul>	MAG-0-330-01	2129167

## 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:

Contacts and other locations –[www.sick.com](http://www.sick.com)