



DAXLAN-0120BA080000D00

DAX

MAGNETOSTRICTIVE LINEAR ENCODERS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

| Type | Part no. |
|-----------------------|----------|
| DAXLAN-0120BA08000D00 | 1140512 |

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

Other models and accessories → 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 ... 120 mm |
| Unusable range | |
| Null zone | 55 mm |
| Damping zone | 63 mm |
| Magnet type | |
| Magnet shape | Block magnet |
| 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 | Analog |
| Communication Interface detail | Current |
| Output signal | 4 mA ... 20 mA |
| Signals | |
| Number of signals | One output signal |
| Sequence of signals | Rising |
| Load resistance | 100 Ω ... 500 Ω |

Electrical data

| | |
|--|--|
| Connection type | Male connector, M12, 5-pin |
| PIN assignment | 1=+24 V DC; 2=Signal 1; 3=Power ground; 4=N.C.; 5=Output signal ground (0 V) |
| Male connector coding | A-coded |
| Supply voltage | 24 V DC ($\pm 20\%$) |
| Current consumption | 50...100 mA |
| 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 |
| MTTFd: 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.

Mechanical data

| | |
|--------------------------|---|
| 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. |
|-----------------------|--|

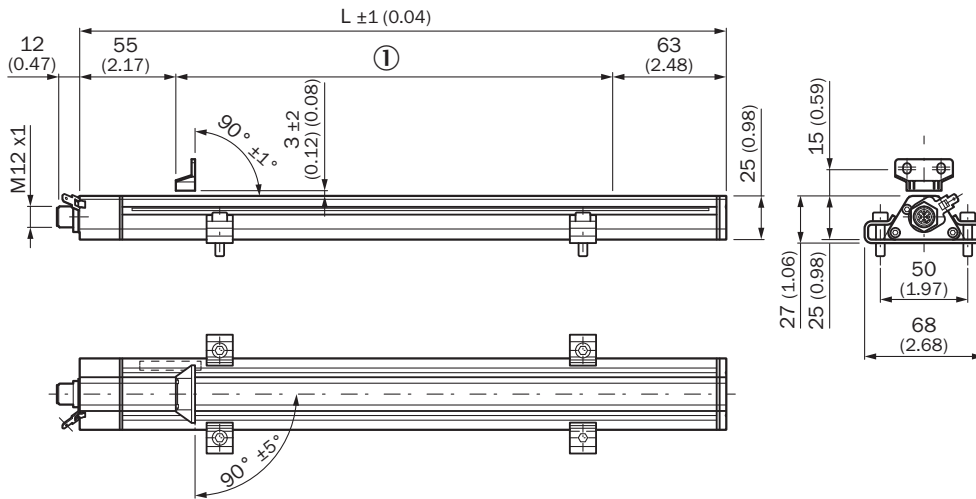
Classifications

| | |
|---------------------|----------|
| ECLASS 5.0 | 27270705 |
| ECLASS 5.1.4 | 27270705 |
| ECLASS 6.0 | 27270705 |
| ECLASS 6.2 | 27270705 |
| ECLASS 7.0 | 27270705 |
| ECLASS 8.0 | 27270705 |
| ECLASS 8.1 | 27270705 |

| | |
|-----------------------|----------|
| ECLASS 9.0 | 27270705 |
| ECLASS 10.0 | 27270705 |
| ECLASS 11.0 | 27270705 |
| ECLASS 12.0 | 27274304 |
| ETIM 5.0 | EC002544 |
| ETIM 6.0 | EC002544 |
| ETIM 7.0 | EC002544 |
| ETIM 8.0 | EC002544 |
| UNSPSC 16.0901 | 41111613 |

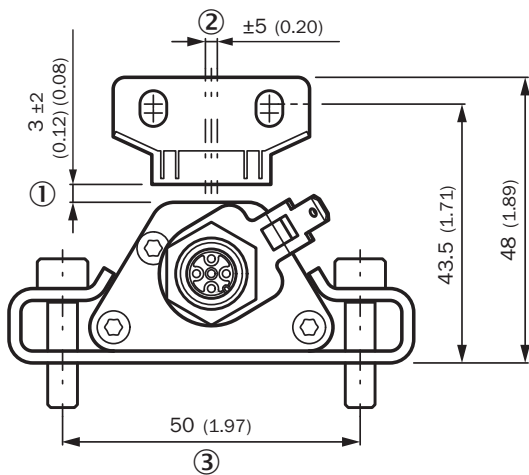
Dimensional drawing (Dimensions in mm (inch))

DAX Low Profile



① Measuring range

Distance tolerance

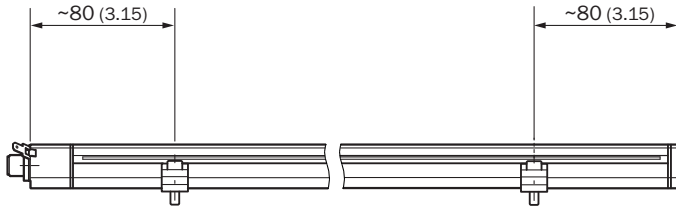


① Nominal distance + permissible amount of distance tolerance

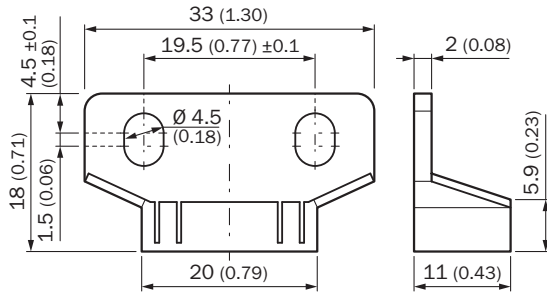
② Permissible center offset

③ Recommendation: M5 x 20

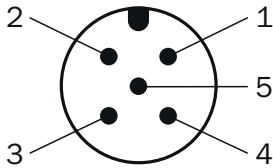
Positioning of mounting bracket



Block magnet




PIN assignment

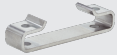


| Male connector M12, 5-pin | Signal |
|---------------------------|----------------------------|
| 1 | +24 V DC |
| 2 | Signal 1 |
| 3 | Power Ground |
| 4 | n.c. |
| 5 | Output signal ground (0 V) |

Recommended accessories

Other models and accessories → www.sick.com/DAX

| | Brief description | Type | Part no. |
|---|--|--------------|----------|
| Magnets | | | |
|  | Compact block magnet for magnetostriuctive linear encoders | MAG-B-180-01 | 2129171 |

| | Brief description | Type | Part no. |
|---|--|---------------|----------|
| Terminal and alignment brackets | | | |
|  | Replacement clamping bracket for DAX® Low Profile without fastening material, 2 pieces | BEF-KH-LP1-02 | 2125244 |
| | Replacement clamping bracket for DAX® Low Profile without fastening material, 3 pieces | BEF-KH-LP1-03 | 2125245 |
| | Replacement clamping bracket for DAX® Low Profile without fastening material, 4 pieces | BEF-KH-LP1-04 | 2125246 |

SICK AT A GLANCE

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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.”

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