



## Linear encoders KH53

KHK53-AXS01700



**Model Name** > KHK53-AXS01700  
**Part No.** > 1030079



*Illustration may differ*

#### At a glance

- Non-contact length measurement - maintenance-free, rugged, long lifetime
- High reproducibility (0.3 mm / 1 mm), high system resolution (0.1 mm)
- SSI and PROFIBUS interfaces
- Determination of absolute position
- Measuring lengths of up to 1,700 m possible
- Can be used in harsh environments
- High travel speeds of up to 6.6 m/s
- Distance tolerance between read head and measuring element: up to 55 mm ± 20 mm possible

#### Your benefits

- After installation, the system is immediately available and completely maintenance-free, which leads to time and cost savings.
- Reliable determination of position under harshest environmental conditions such as influences of dirt, dust, fog, shocks and vibrations
- High efficiency and productivity
- Savings on time - no reference run necessary on initial operation due to absolute position measurement
- accurate positioning even with high mounting tolerances



#### Performance

|                                  |                                            |
|----------------------------------|--------------------------------------------|
| Measuring length:                | 0 m ... 1,700 m                            |
| Measuring range:                 | 1,700 m                                    |
| Resolution:                      | 0.1 mm                                     |
| Piston speed:                    | 6.6 m/s <sup>1)</sup>                      |
| Measurement accuracy:            | ± 1000 + ME (Tu-25° C) Tk µm <sup>2)</sup> |
| Repeatability (Ta not constant): | 0.3 mm                                     |

<sup>1)</sup> If the max. movement speed is exceeded or the read head cannot detect a measuring element the error message FF FF FE Hex is produced. <sup>2)</sup> If the read head and measuring element are mounted within ± 1 mm of the nominal mounting distance in the N and Y directions. The figures quoted related to the accuracy within a measuring element with reference to the start of that measuring element. ME = length measuring element Tu = Ambient temperature °C

#### Mechanical data

|                     |            |
|---------------------|------------|
| Connection type:    | Cable, 3 m |
| Mass:               | 5.2 kg     |
| Position tolerance: | ± 10 mm    |

Material: AIMgSiPbF28

### Electrical data

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|                                        |                                   |
|----------------------------------------|-----------------------------------|
| Initialization time:                   | 2 s                               |
| Position forming time:                 | 0.8 ms                            |
| Supply voltage:                        | 10 V ... 32 V                     |
| Power consumption:                     | 250 mA                            |
| MTTFd: mean time to dangerous failure: | 21 a (EN ISO 13849) <sup>1)</sup> |

<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.

### Interfaces

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|                                          |                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical interface:                    | SSI                                                                                                                                                                |
| Interface signals:                       | Digital, serial                                                                                                                                                    |
| Interface for parametrization:           | Data format: 1 start bit, 8 data bits, 1 stop bit, no parity, Data protocol: ASCII, Baud rate 9600 RS-422, RS-422, Four wire transmission, asynchrony, full duplex |
| Data format:                             | SSI 24 bits format                                                                                                                                                 |
| Standard (default setting SSI standard): | RS-422 off                                                                                                                                                         |

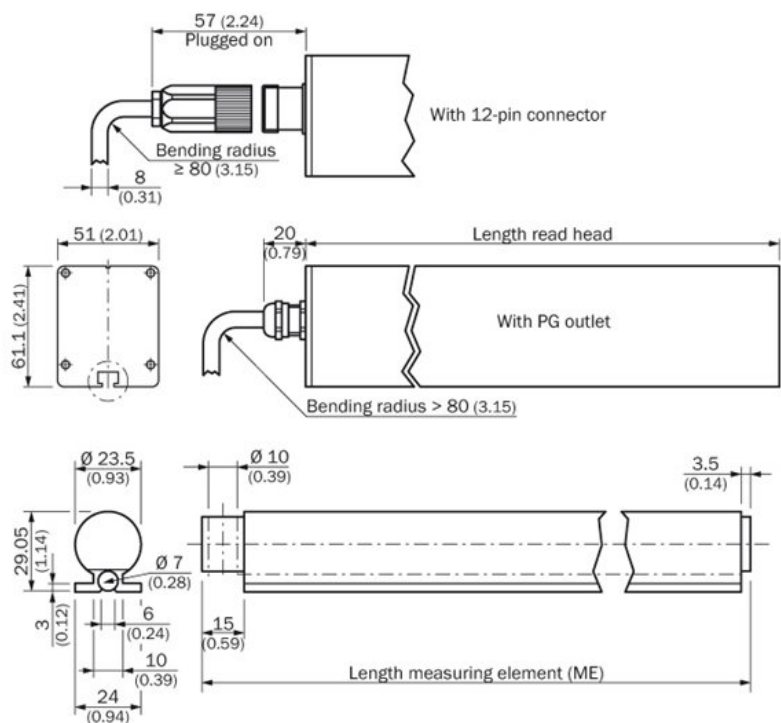
### Ambient data

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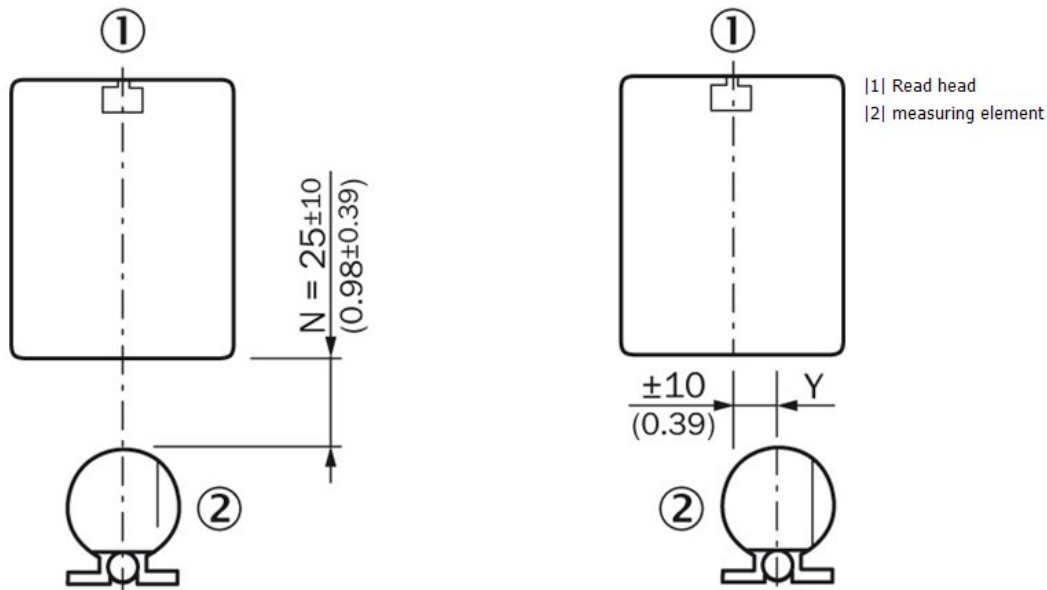
|                            |                                                            |
|----------------------------|------------------------------------------------------------|
| EMC:                       | (according to EN 61000-6-2 and EN 61000-6-4) <sup>1)</sup> |
| Enclosure rating:          | IP 66 (IEC 60529)                                          |
| Working temperature range: | -20 °C ... 60 °C                                           |
| Storage temperature range: | -40 °C ... 85 °C                                           |
| Resistance to shocks:      | 30 g, 10 ms (DIN EN 61000-2-27)                            |
| Resistance to vibration:   | 10 g, 20 Hz ... 250 Hz (DIN EN 61000-2-6)                  |

<sup>1)</sup>

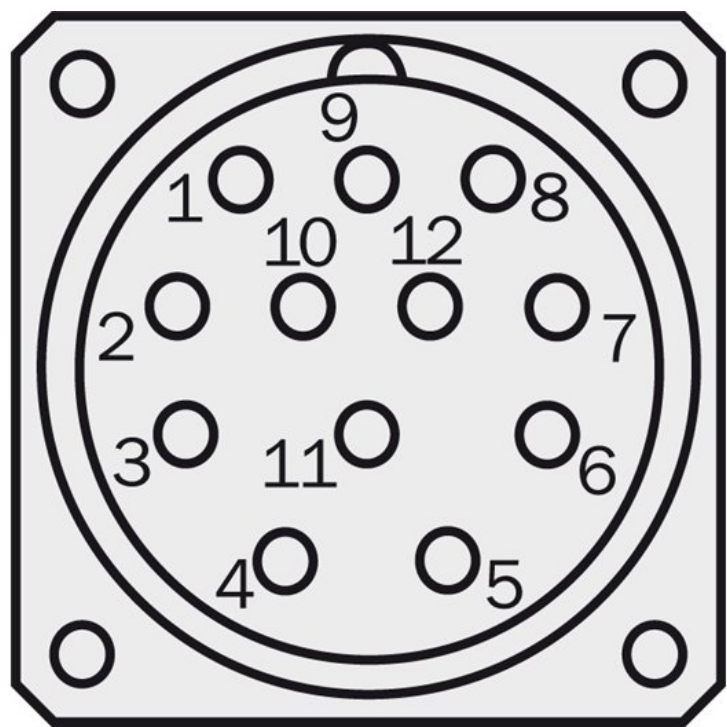
Dimensional drawing



Position tolerance



All dimensions in mm (inch)



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