



# Linear encoders KH53

KHK53-AXU00038



**Model Name** > [KHK53-AXU00038](#)  
**Part No.** > [1030051](#)



*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 ... 38 m
Measurement range:	38 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, 10 m
Mass:	2.4 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:	45 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

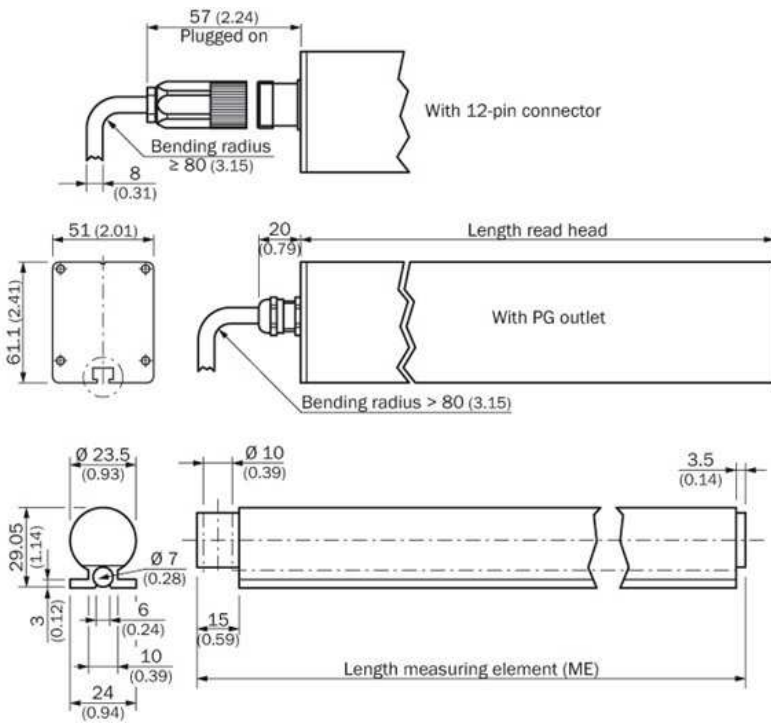
### Ambient data

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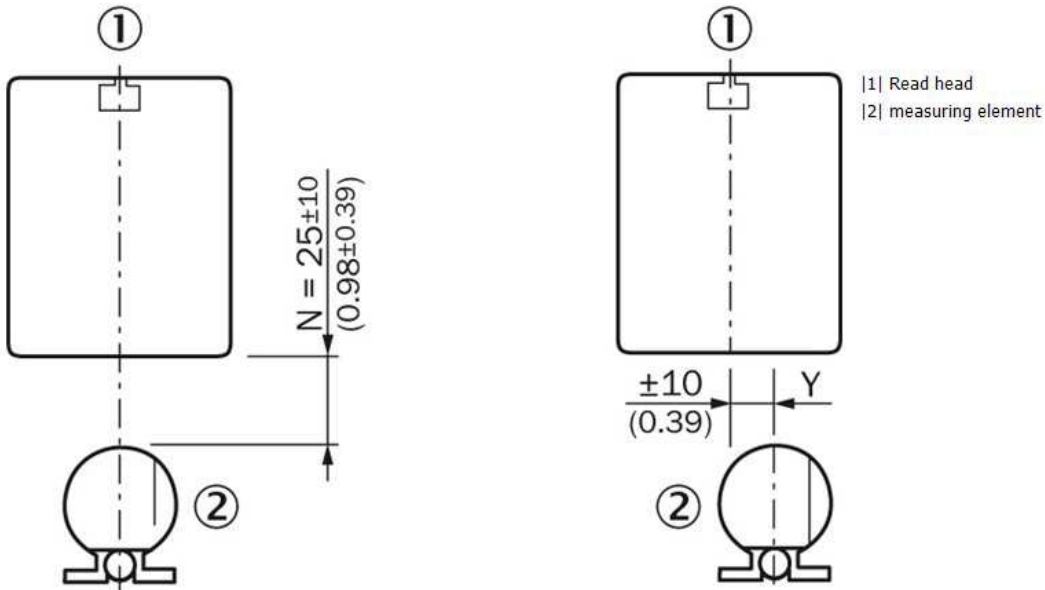
EMC:	(according to EN 61000-6-2 and EN 61000-6-4) <sup>1)</sup>
Enclosure rating:	IP 66 (IEC 60529)
Working temperature range:	-20 °C ... +60 °C
Storage temperature range:	-40 °C ... +85 °C
Resistance to shocks:	30 g, 10 ms (DIN EN 60 068-2-27)
Resistance to vibration:	10 g, 20 Hz ... 250 Hz (EN 60068-2-6)

<sup>1)</sup>

**Dimensional drawing**



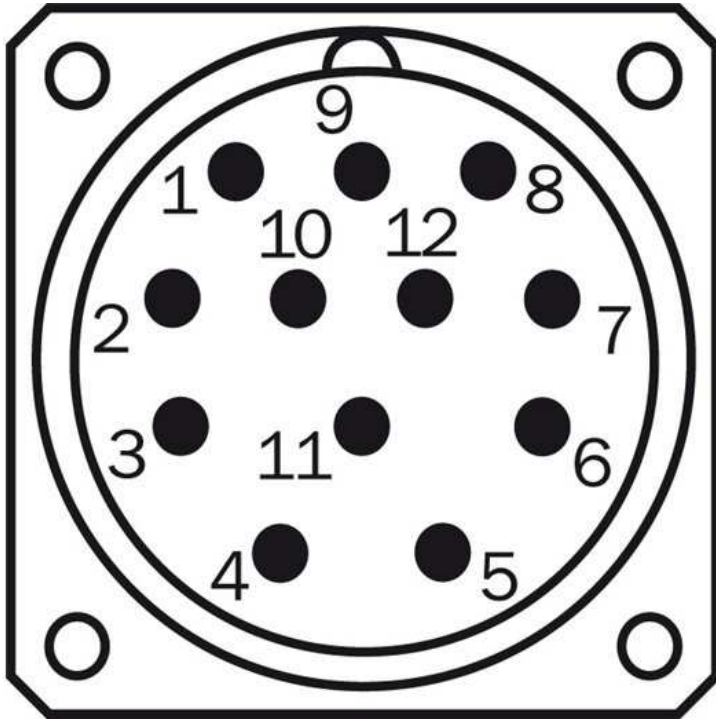
**Position tolerance**



All dimensions in mm (inch)

PIN assignment

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