LINEAR ENCODER

BOGEN IKS9

INCREMENTAL MAGNETIC SENSING HEAD

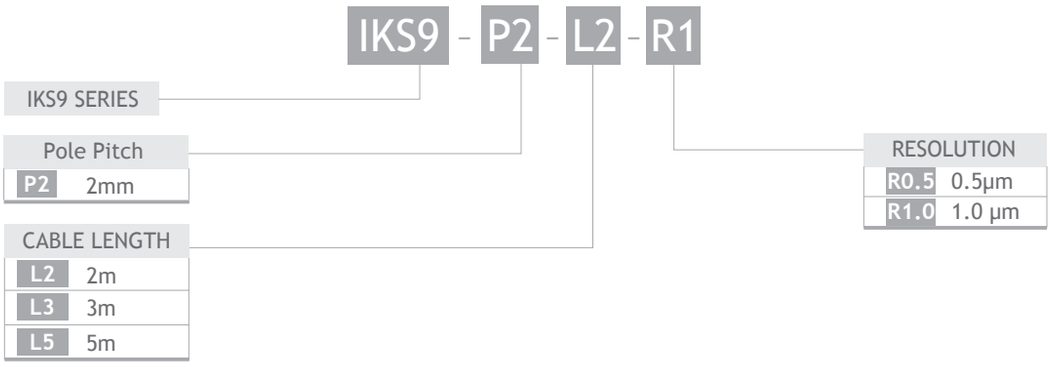
Measuring movements with the IKS9 – more power in less space

The incremental magnetic sensing head IKS9 for linear and rotary applications:
The IKS9 impresses customers in automation, instrumentation and motion control applications with an extremely high accuracy and a particularly high degree of modularity. BOGEN offers more than 1 million different variants of IKS9 that can be configured to customer-specific requirements. In combination with an individual scale, measurement solutions for almost every application can be custom-tailored.

- High accuracy
- Resolution options available to 20 nm
- Programmable resolutions
- Customizable max output frequencies
- Software programmable interface
- Connector options with multiple cable lengths
- No wear from usage
- Resistant to dust, cooling lubricant emulsion, oil, etc.
- High fly height tolerance
- Unlimited measuring length

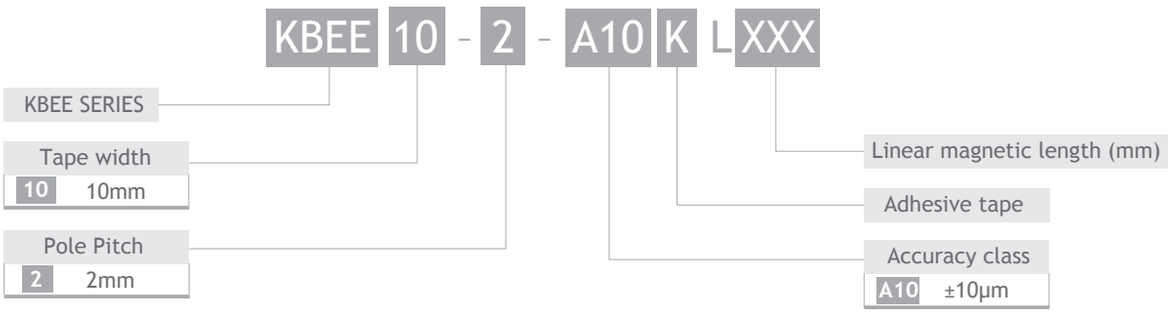
* Technical specifications subject to change without prior notice

READHEAD PART NUMBERING



* Linear magnetic scale

SCALE PART NUMBERING



* Linear magnetic reference mark

LMSR5 - 2 - KL25

FEATURES

Resolution, Output frequency F= 1750 kHz	0.5µm, 1.0µm
Max. Movement Speed	7m/s - 1.0µm 3.5m/s - 0.5µm
Energy consumption (without Load)	<65 mA (UB = 5 V)
Operating temperature	-20 to +70 °C
Storage temperature	-20 to +80 °C
Protection class	IP67 (green LED = set up ok)
LED	Green LED = Set up on Red LED*

* Error codes refer to the table below

LED Error Codes (Order Parameter E1)

The amount of flashing signs of the red LED indicates the fault. It starts after a fast pulsed light.

On
Off

The example displays a weak and fluctuating magnetic field (fault 2 and 3).

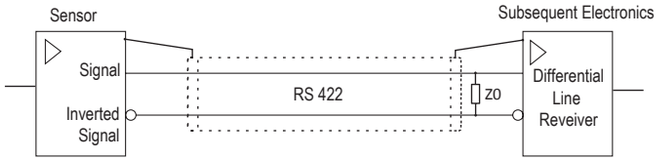
LED flashing signs amount	Description
1	Magnetic field is too high
2	Magnetic field is too low
3	The range of the magnetic fluctuation is too large
4	Output frequency is too high
5	Movement speed is too high
6	Movement speed is much too high (latched)
7, 8	Movement speed too high for internal signal processing with current programming (latched)
9, 10, 11	Internal Error 9, 10, 11 (latched)

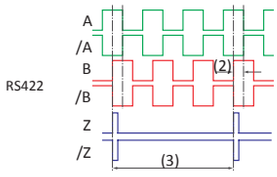
SENSING HEAD VARIANTS

Pole pitch	2 mm
Supply voltage	5 V ± 5 %
Interface (without load)	RS422 (0 to 5 V)
Cable length of sensing head	Standard 2 m, optional variable length from 10 cm up to 6 m
Connector	D-sub 9 pin (male)

OUTPUT CIRCUIT

RS422





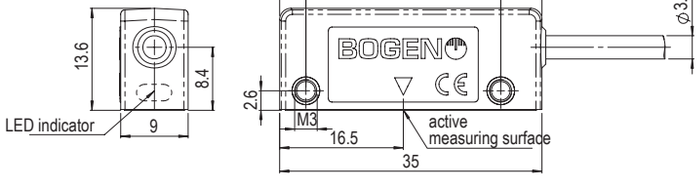
Load resistor Z0 = 120 Ω at the receiving end

Output Signals

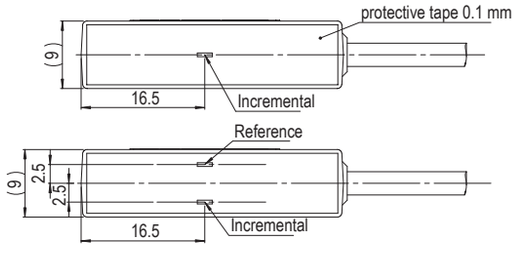
Signals	A, /A, B, /B, Z, /Z
Signal error indicator	High impedance on all output signals (A, /A, B, /B, Z, /Z)

DIMENSIONS

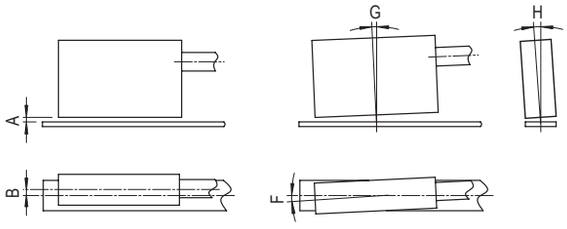
IKS9 - Housing: 9 x 13.6 x 35



View on active measuring surface



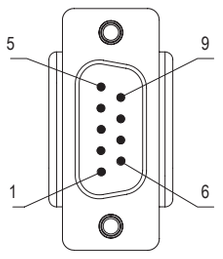
Installation Tolerances



	Pole Pitch 2mm
A [mm]	0.1 to 1.0
B [mm]	2.5
B [mm]	0.5
G	1°
H	3°
F	3°

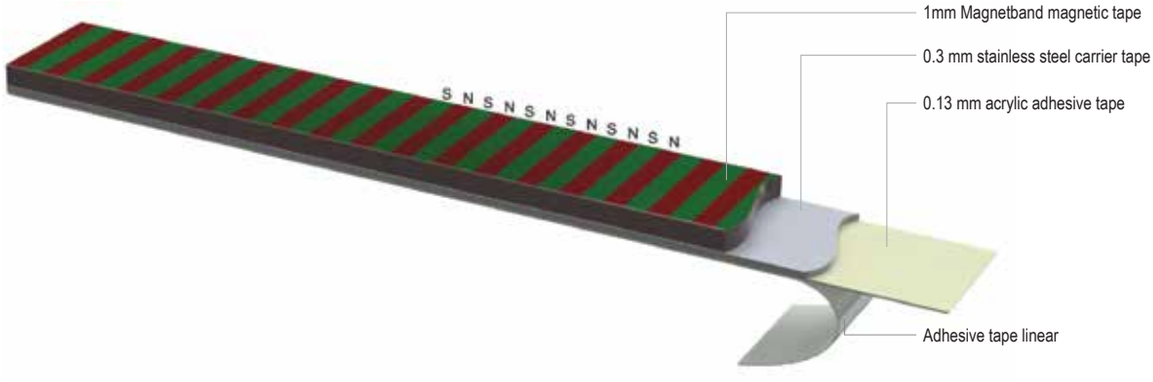
PIN ASSIGNMENT

Signal	Colour	Pin No.
		C3 D-SUB 9 (male)
V -	blue	9
V +	red	5
A	brown	4
/A	green	8
B	grey	3
/B	yellow	7
Z	pink	2
/Z	white	6
Shield	-	Case



C3: D-SUB 9 (male)

DATA SHEET MAGNETIC TAPE



Magnetic tape	
Accuracy class (20 °C)	± 10 µm
Material	Magnetic tape: nitrile magnet Carrier tape: stainless steel
Width	10mm
Thickness	Others on request incl. stainless steel carrier
Magn. pole pitch	2mm
Operating temperature	-40°C... + 100°C max.
Linear exp. coefficient	~ 17 x 10^{-6}/K
Bending radius	65 mm min.
Max. length of roll	25m, 50m, others on request

Adhesive tape	
Material	Double coated acrylic adh. tape, pre assembled
Width	9 mm
Thickness	0.13 mm
Reel length	55m max.

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