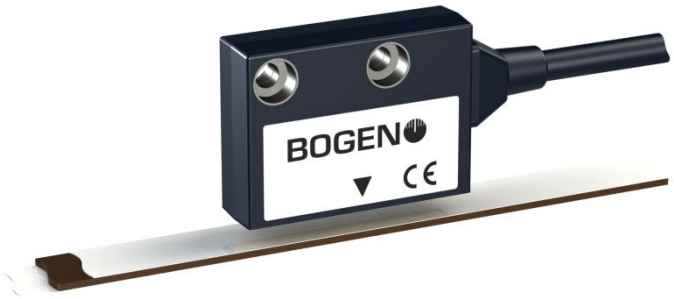
Magnetics that count BOGEN



Measuring

Positioning

IKS8
Magnetic Sensing Head

- Linear Applications
- Rotational Applications

Areas of Application

- Industrial Goods
- Automation
- Life Science
- High-Tech Industry

Measuring movements with the IKS8
Simple – precise – economic

Features

- Non-contact, quick position measurement
- Precise
- Programmable with PC or App
- Single piece unit
- Freely programmable resolutions
- Customisable output frequencies
- A variety of connectors with adaptable cable lengths
- No wear from usage
- High measuring distance tolerance
- Resistant to dust, cooling lubricant emulsion, oil, etc.
- Unlimited measuring length

RevE (30-06-2014)

Features

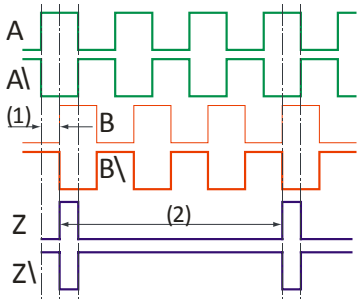
Resolution	0.5 µm to 625 µm, depending on the pole length (see Table 1)
Max. Speed	up to 75 m/s, depending on the pole length and resolution
Energy Consumption (without Load)	65 mA ± 5 % (U_B = 5 V)
Operating Temperature	-20° ... +70° C
Storage Temperature	-20° ... +80° C
Protection Class	IP67
LED	Error displayed when distance or speed too high
Adjustable Parameters	Resolution, maximum output frequency and counting (with optional programming device and the appropriate software)

Sensing Head Variants

Pole Length	1 mm, 2 mm, 5 mm
Reference	Reference chip for 2nd track or periodically from the pole pitch
Voltage	5 V or 7 - 32 V
Interface	RS422, Push-Pull TTL, Push-Pull HTL
Cable Length of Sensing Head	Standard 2 m, optional variable length up to 6 m
Connector	open cable end, optional plug according to order code, other specifications on request

Output Signals

Signals	A, A\, B, B\, Z, Z\
Signal Amplitude	1. RS422 (± 5 V) 2. Push-Pull TTL (+ 5 V) 3. Push-Pull HTL (=U_B – 1 V)



(1) Phase shift A and B 90° ±10° electrical
(2) Signal period depending on the reference track pattern or as a periodic reference depending on the pole pitch

Resolution and Speed

Default Values at Output Frequency F = 1000 kHz

Pole Pitch P [mm]	Resolution R [µm]	Speed [m/s]
1	0.5	2
2	1	4
5	2.5	10

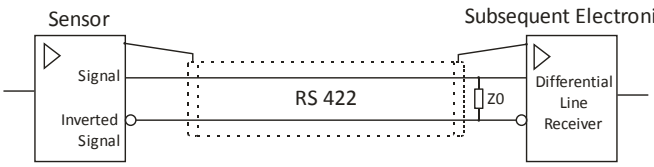
Further Selection (Optional Ordering Parameters)

Pole Pitch P [mm]			Resolution R [µm]	Maximum Output Frequency F [kHz]						
1	2	5		3500	1500	1000	500	100	50	10
				Speed [m/s]						
		x	625	>75	>75	>75	>75	>75	>75	25
		x	312.5	>75	>75	>75	>75	>75	62.5	12.5
	x		250	>75	>75	>75	>75	>75	50	10
		x	200	>75	>75	>75	>75	>75	40	8
x	x	x	125	>75	>75	>75	>75	50	25	5
		x	100	>75	>75	>75	>75	40	20	4
	x		80	>75	>75	>75	>75	32	16	3.2
x	x	x	62.5	>75	>75	>75	>75	25	12.5	2.5
	x	x	50	>75	>75	>75	>75	20	10	2
x	x	x	40	>75	>75	>75	>75	16	8	1.6
x	x	x	25	>75	>75	>75	50	10	5	1
x	x	x	20	>75	>75	>75	40	8	4	0.8
	x		16	>75	>75	64	32	6.4	3.2	0.64
x	x	x	12.5	>75	75	50	25	5	2.5	0.5
x	x	x	10	>75	60	40	20	4	2	0.4
x	x		8	>75	48	32	16	3.2	1.6	0.32
x	x	x	5	70	30	20	10	2	1	0.2
x	x		4	56	24	16	8	1.6	0.8	0.16
x	x	x	2.5	35	15	10	5	1	0.5	0.1
x	x		2	28	12	8	4	0.8	0.4	0.08
x	x		1	14	6	4	2	0.4	0.2	0.04
x			0.5	7	3	2	1	0.2	0.1	0.02

Table 1: Maximum output frequency and speed as a function of pole pitch and resolution

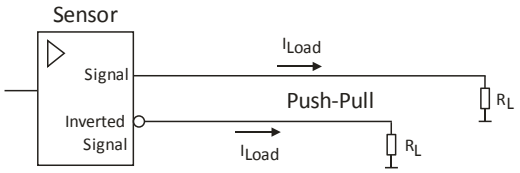
Output Circuit

RS422



Load resistor Z0 = 120 Ohm at the receiving end

Push-Pull (TTL, HTL)



maximum of 250 mA per channel

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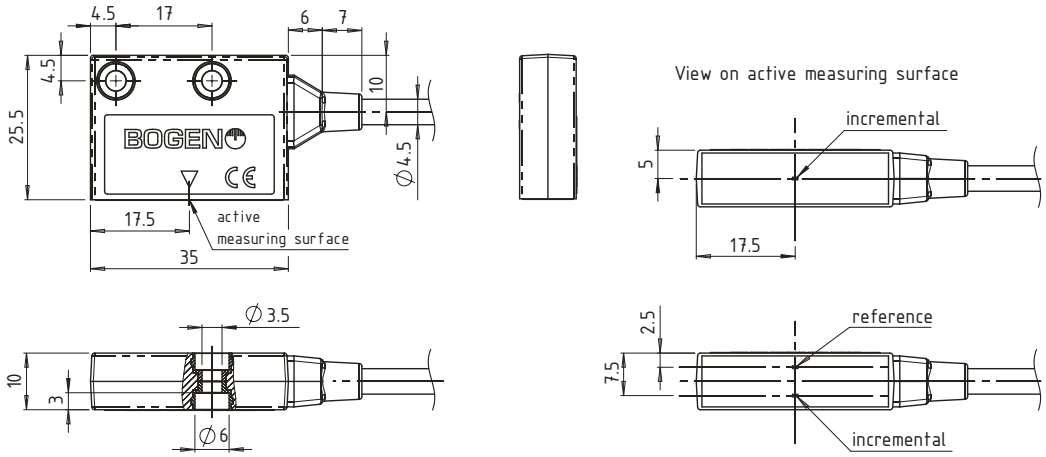
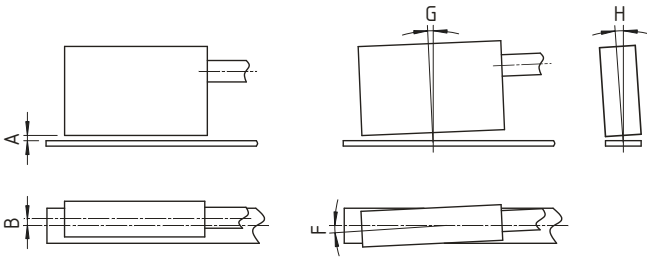
Fon +49 (0)30 81 00 02-0 · Fax +49 (0)30 81 00 02-60 · magnetics@bogen-electronic.com · www.bogen-electronic.com

Dimensions



Installation Tolerances



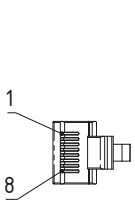
	Pole Pitch 1 mm	Pole Pitch 2 mm	Pole Pitch 5 mm
A	0.1 ... 0.5 mm	0.1 ... 1.0 mm	0.1 ... 2.5 mm
B (3)	2.5 mm	2.5 mm	2.5 mm
B (4)	0.5 mm	0.5 mm	0.5 mm
G	1°	1°	1°
H	3°	3°	3°
F	3°	3°	3°

(3) relative to 10 mm scale width (1-track)
(4) relative to 10 mm scale width (2-track)

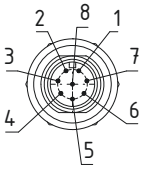
Pin Assignment

Signal	Signal *)	Color	Pin No.				
			RJ45	M12 plug (male)	D-SUB 9 (male)	D-SUB 15 (male)	D-SUB 25 (female)
V -	V -	blue	1	1	9	2	1 + 17 **)
V+	V+	red	2	2	5	7	2 + 16 **)
A	A	brown	3	3	4	14	3
A\	A\	green	4	4	8	6	4
B	B	grey	5	5	3	13	6
B\	B\	yellow	6	6	7	5	7
N.C.	Z	pink	7	7	2	12	17
N.C.	Z\	white	8	8	6	4	18
Shield	Shield	-	-	Case	Case	Case	Case

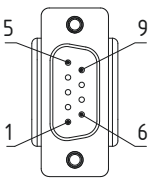
*) Applies to sensing heads with reference signal, ordering code Z1 (periodic index signal) or Z2 (from reference marks).
**) PIN 1 with Pin 17 and Pin 2 with Pin 16 connected through solder bridge



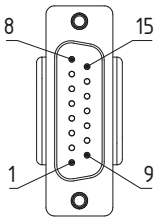
RJ45 (8P8C)



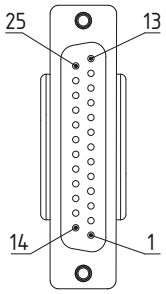
M12 plug (male)



D-SUB 9 (male)



D-SUB 15 (male)



D-SUB 25 (female)

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Order Code

	Basic Parameters (required)						Optional Parameters (only necessary if differing from standard)		
IKS8 –	Z	P	V	D	L	–	R	F	C

			Code	Explanation
Basic Parameters	**Z**	**Reference Signal**	Z0	without
			Z1	periodic index signal, from the pole pitch (standard)
			Z2	from reference marks (requires 2-track magnetic tape with incremental track and reference track)
	P	**Pole Pitch [mm]**	P1	1 mm
			P2	2 mm
			P5	5 mm
	V	**Voltage [V]**	V5	5 V
			V732	7...32 V
	D	**Interface**	D1	RS422
			D2	Push-Pull HTL
			D3	Push-Pull TTL
	L	**Cable Length [m]**	L1	1 m
			L2	2 m (standard length)
			L3	3 m
			...	...
			L6	6 m
Optional Parameters	**R**	**Resolution [µm]**	R0.5	standard for pole pitch 1 mm
			R1	standard for pole pitch 2 mm
			R2.5	standard for pole pitch 5 mm
				Other non-standard resolutions, see section "Resolution and Speed" in Table 1.
	F	**Maximum Output Frequency [kHz]**	F1000	standard
				Other non-standard output frequencies, see section "Resolution and Speed" in Table 1.
	C	**Connector**	C1	RJ45 Plug
			C2	M12 plug (male)
			C3	D-SUB 9 (male)
			C4	D-SUB 15 (male)
			C5	D-SUB 25 (female)

Order Example

IKS8-Z1P1V5D1L2	IKS8 Magnetic Sensing Head with periodic index signal, 1 mm pole pitch, voltage 5 V, interface RS422, cable length 2 m **without selected options = standard values:** 0.5 µm resolution, max. output frequency 50 kHz, without connector (open cable end)
IKS8-Z2P2V732D3L5-R125F1000C2	IKS8 Magnetic Sensing Head with reference signal from reference marks (2-track magnetic tape), 2 mm pole pitch, voltage 7 – 32 V (broad-range), interface Push-Pull TTL, cable length 5 m **selected options:** 125 µm resolution, max. output frequency 1000 kHz, M12 plug

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