

ALS21

Absolute Linear Magnetic Sensing Head

The Absolute Magnetic Sensing Head ALS21 combined with BOGEN's magnetic scales offer cost-efficient magnetic measurement solutions for many industrial applications where movements or positions have to be measured. ALS21 can be used for linear measurements up to 8100 mm length with a resolution up to 1 μm . The measuring head provides both BISS-C or SSI outputs, including incremental signal output in parallel. Thanks to IP67 class protection and rugged mechanical design ALS21 can be implemented even in harsh industrial environments.

Absolute
Measuring

Linear
Applications

ALWAYS
ABSOLUTE



Features and Benefits

- BISS & SSI interface
- additional incremental output for speed feedback
- resolution up to 1 μm
- error bit output
- measuring length up to 8,1 m
- high mounting tolerances

Specifications

Environmental Specifications

shock	250 g, 6 ms acc. to CEI EN 60068-2-27
vibrations	10 g, 5-2000 Hz acc. to CEI EN 60068-2-6
protection	IP67
operating temperature range	-25°C +85°C (-13°F +185°F)
storage temperature range	-40°C +100°C (-40°F +212°F)

Mechanical Specifications

dimensions	see drawing
housing material	anticorrosive, UNI EN AW-6082
electrical connection	Hi-flex cable M8 2,0 m or M12 8 pin inline plug
gap sensor/tape	0,1 ... 0,6 mm
travel speed (mechanical)	10 m/s max.
measurement length	8165 mm max. (measurement length = tape length - 55 mm)

Electrical Specifications

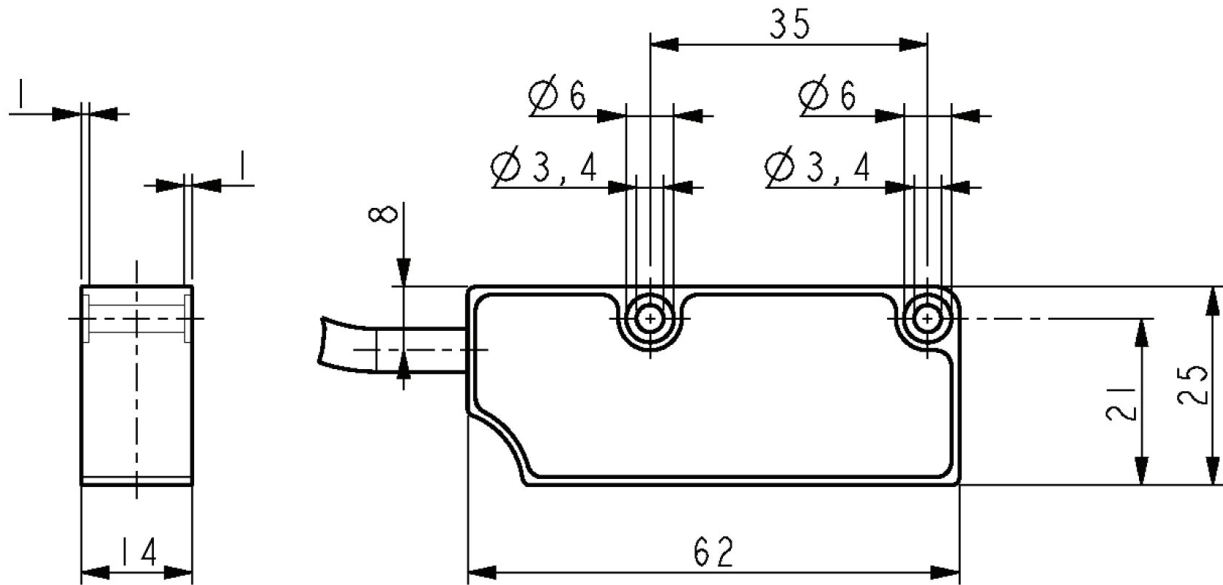
resolution	50, 10, 5, 2, 1 μ m
sensor accuracy	$\pm 2 \mu$ m max.
repeat accuracy	± 1 increment
output circuits	absolute: SSI, BiSS-C; incremental: NPN o.c. (AB)
position refresh (absolute)	33 μ s
counting frequency (incremental)	see table below
power supply	+5Vdc $\pm 5\%$
power consumption	1 W max.
protection	against short-circuit
EMC	acc. to EN 61000-6-2 level 3

Accessories

magnetic tape	LMS2-A153-I2-W10-A40; article code 51246 / on reels; (essential accessory)
cover tape	ADBD-S10x0.1-K0.13, stainless steel, 10 x 0.1mm, adhesive 3M9469, 0.13mm, article code 50318
set of end clamps (10 pcs)	K29-05.2, 13 x 10 x 2.5mm (L x W x H), article code 22283
connector	M12 8 pin mating connector; E-M12F8

resolution code	max. travel speed (m/s)*	max. counting frequency of AB (kHz)
50	7	73
10	7	350
5	7	580
2	2.8	580
1	1.4	580

* min. edge distance = 0,25 μ s (4MHz); double speed possible with reduced sensor accuracy ($\pm 4 \mu$ m)



Order Code

ALS21 - R A L C

			code	explanation
parameters	R	resolution	R50	50 μm
			R10	10 μm
			R5	5 μm
			R3	3 μm
			R1	1 μm
	A	interface absolute	A1	SSI, Gray MSB aligned, + 5Vdc \pm 5 %
			A2	SSI, Gray MSB aligned + AB incremental, + 5Vdc \pm 5 %
			A3	SSI, Binary MSB aligned, + 5Vdc \pm 5%
			A4	BiSS-C interface + AB incremental, +5Vdc \pm 5%
	L	cable length	L2	cable output 2 m
Lx			cable output x m	
C	connections	L0.5C1	0.5 m cable + M12 8-pin inline plug	
		L2C1	2 m cable + M12 8-pin inline plug	
		LxC0	x m cable + flying leads	

Corresponding Linear Magnetic Scales

BOGEN offers a comprehensive scope of standard and tailor-made scales in a variety of sizes and accuracy classes.

For more information on our standard magnetic scales, [please refer to our dedicated datasheets.](#)

For your special requests, [please click here to contact our application engineers.](#)

BOGEN Magnetics GmbH reserves the right to make changes, without notice, in the products, including software, described or contained herein in order to improve design and/or performance. Information in this document is believed to be accurate and reliable. However, BOGEN Magnetics GmbH does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. BOGEN Magnetics GmbH takes no responsibility for the content in this document if provided by an information source outside of BOGEN products. In no event shall BOGEN Magnetics GmbH be liable for any indirect, incidental, punitive, special or consequential damages (including but not limited to lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) irrespective the legal base the claims are based on, including but not limited to tort (including negligence), warranty, breach of contract, equity or any other legal theory. Notwithstanding any damages that customer might incur for any reason whatsoever, BOGEN product aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the General Terms and Conditions of Sale of BOGEN Magnetics GmbH. Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights. Unless otherwise agreed upon in an individual agreement BOGEN products sold are subject to the General Terms and Conditions of Sales as published at www.bogen-magnetics.com.