

**Measuring****Positioning**

ALS21 Absolute Magnetic Sensing Head

- Linear applications
- Absolute measuring



Features

- BISS & SSI interface
- additional incremental output for speed feedback
- resolution up to 1 μm
- error bit output
- measuring length up to 8,1 m
- large mounting tolerances
- unaffected by dust, debris or liquids with IP67



Motion control with ALS21: accurate - robust - flexible

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.

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

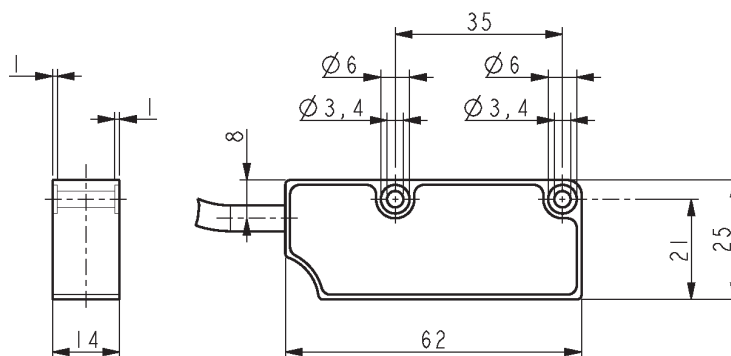
resolution	50, 10, 5, 2, 1 μ m
sensor accuracy	$\pm 2 \mu$ m max.
repeat accuracy	± 1 increment
output circuits	absolute: SSI, BiSS-C incremental: NPN o.c. (AB)
position refresh (absolute)	33 μ s
counting frequency (incremental)	see table below
power supply	+5Vdc $\pm 5\%$
power consumption	1 W max.
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, 10x0.1mm, 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

Parameters

 ALS 21 -

R	A	L	C
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			Code	Explanation
Parameters	R	resolution	R50	50 μm
			R10	10 μm
			R5	5 μm
			R2	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](#).

Revision History

Date	Revision	Note	Pages
Dec 15, 2020	0.0	first edition	

ALS21 Rev.0.0 [2021/02/03]