

Series

SMA21



- BiSS-C, SSI, Panasonic interface
- Resolution up to 1  $\mu\text{m}$
- Additional incremental output for speed feedback
- Error bit output
- Sensor vs tape gap diagnostic LED
- Measuring length up to 32,8 m
- Large mounting tolerances
- Unaffected by dust, debris or liquids with IP67



SMA21

### 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:	anticorodal, UNI EN AW-6082
Electrical connection:	Lika Hi-flex cable T12 2,0 m or M12 inline plug
Gap between sensor/tape:	0,1 $\div$ 0,6 mm
Travel speed (mechanical):	10 m/s max.
Measurement length:	32820 mm max. Measurement length = tape length - 63 mm

### ELECTRICAL SPECIFICATIONS

Resolution:	50, 10, 5, 2, 1 $\mu\text{m}$
Sensor accuracy:	$\pm 2 \mu\text{m}$ max.
Repeat accuracy:	$\pm 1$ increment
Output circuits:	absolute: SSI, BiSS-C, Panasonic RS485 incremental: Line Driver RS422
Position refresh (absolute):	33 $\mu\text{s}$
Counting frequency between edges (incremental):	see table 1
Power supply:	+5Vdc $\pm 5\%$ , +5 +30Vdc
Power consumption:	1 W max.
Protection:	against inversion of polarity and short-circuit
EMC:	acc. to EN 61000-6-2 level 3

### ACCESSORIES

MTA-A154:	Magnetic tape
E-M12F12:	M12 12 pin mating connector
EC-M12F12-LK-T12-050:	cordset with 5 m cable
EC-M12F12-LK-T12-100:	cordset with 10 m cable
E-M12F8:	M12 8 pin mating connector
EC-M12F8-LK-M8-050:	cordset with 5 m cable
EC-M12F8-LK-M8-100:	cordset with 10 m cable
KIT LKM-1440:	Set of tape terminals (10 pcs)

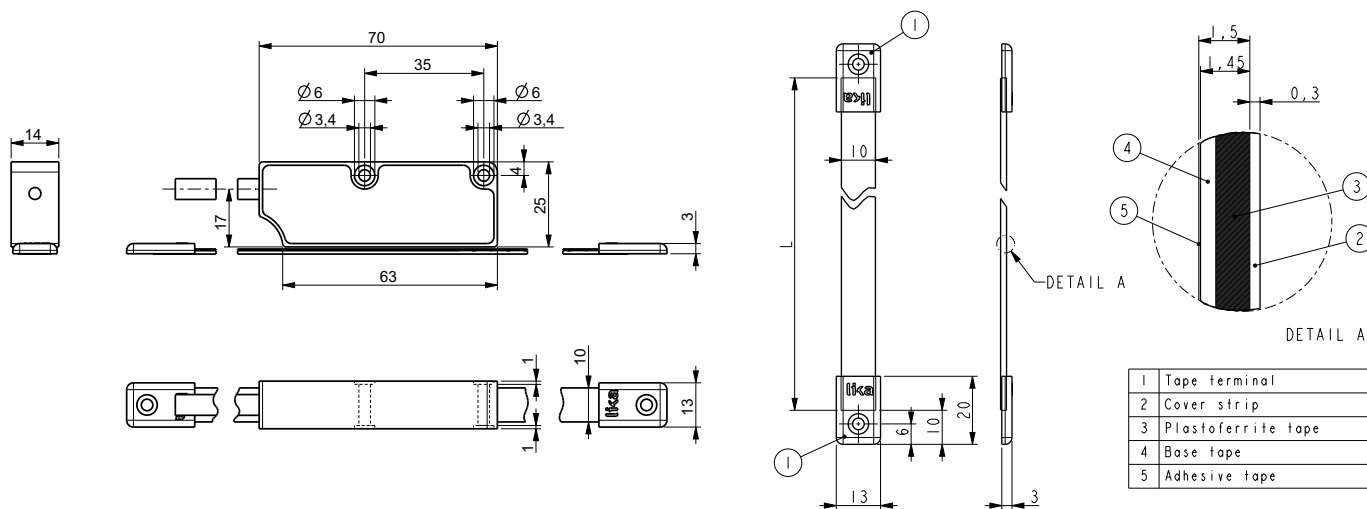
Table 1: Counting frequency between signal edges (incremental)

Resolution code ( $\mu\text{m}$ )	Travel speed		Counting frequency of AB at max speed (kHz) (*)
	a	b	
50	< 7	10	200
10	< 7	10	1000
5	< 7	10	2000
2	< 2.8	4,7	2320
1	< 1.4	2,4	2320

(a) speed limit for best signal (jitter) performance

(b) max allowed speed limit

(\*) min. edge distance = 0,25  $\mu\text{s}$  (4MHz)



SMA21

Order code - Sensor

SMA21	-	XXX Ⓐ	-	XXXX Ⓑ	-	XXXX Ⓒ	/Sxxx Ⓓ
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<p>Ⓐ OUTPUT CIRCUITS &amp; POWER SUPPLY</p> <p>GG1 = SSI, Gray MSB aligned, +5Vdc ±5%</p> <p>G11 = SSI, Gray MSB aligned + AB, /AB, +5Vdc ±5%</p> <p>BG1 = SSI, Binary MSB aligned, +5Vdc ±5%</p> <p>B11 = SSI, Binary MSB aligned + AB, /AB, +5Vdc ±5%</p> <p>SC1 = BiSS-C interface + AB, /AB, +5Vdc ±5%</p> <p>JP1<sup>(1)</sup> = Panasonic RS485, +5Vdc ±5%</p> <p>GG4 = SSI, Gray MSB aligned, +5 +30Vdc</p> <p>G14 = SSI, Gray MSB aligned + AB, /AB, +5 +30Vdc</p> <p>BG4 = SSI, Binary MSB aligned, +5 +30Vdc</p> <p>B14 = SSI, Binary MSB aligned + AB, /AB, +5 +30Vdc</p> <p>SC4 = BiSS-C interface + AB, /AB, +5 +30Vdc</p>	<p>Ⓑ RESOLUTION</p> <p>0050 = 50 μm</p> <p>0010 = 10 μm</p> <p>0005 = 5 μm</p> <p>0002 = 2 μm</p> <p>0001 = 1 μm</p>	<p>Ⓒ CABLE TYPE &amp; LENGTH</p> <p>L020 = cable output 2 m</p> <p>Lxx0 = cable out. x m (max. length 10m)</p> <p>M005 = 0,5 m cable + M12 8 pin inline plug <i>(only for GG1, BG1, JP1, GG4, BG4)</i></p> <p>M020 = 2 m cable + M12 8 pin inline plug <i>(only for GG1, BG1, JP1, GG4, BG4)</i></p> <p>F005 = 0,5 m cable + M12 12 pin inline plug</p> <p>F020 = 2 m cable + M12 12 pin inline plug</p>	<p>Ⓓ CUSTOM VERSION</p>
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(1) with 1 μm resolution, max. measurement length is 16410 mm

Order code - Magnetic tape

MTA	-	XXXX Ⓐ	-	XX Ⓑ	-	XXXXXX Ⓒ	-	X Ⓓ	-	X Ⓔ	-	X Ⓕ	-	XXX Ⓖ	/Sxxx Ⓗ
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<p>Ⓐ CODING</p> <p>A154 = SMA21 code</p>	<p>Ⓑ WIDTH</p> <p>10 = 10 mm</p>	<p>Ⓒ LENGTH</p> <p>005000 = 5 m</p> <p>010000 = 10 m</p> <p>015000 = 15 m</p> <p>020000 = 20 m</p> <p>025000 = 25 m</p> <p>032800 = 32,8 m</p>	<p>Ⓓ BIADHESIVE</p> <p>B = supplied</p> <p>N = not supplied</p>	<p>Ⓔ COVER STRIP</p> <p>C = supplied</p> <p>N = not supplied</p>	<p>Ⓕ ACCURACY CLASS</p> <p>040 = ±40 μm</p>	<p>Ⓗ CUSTOM VERSION</p>
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Document release	Date	Description
1.1	29.11.2024	MTA-A154 length update
1.0	July 2023	First issue