



- Standard encoder for linear position measurement
- Gap clearance up to 2 mm
- Lika hi-flex sensor cable for drag cable chains
- Status LED for clearance and gap error
- Optional reference mark LKM1309/5 to be installed along the magnetic tape
- Optional tape cleaning wipers
- Error output available on request



SME51

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:	die cast aluminium, UNI EN AC-46100
Electrical connections:	Lika Hi-flex cable M8, 2,0 m or M12 8 pin inline plug
Gap between sensor/tape (without cover strip):	0,1 ÷ 2,0 mm
Travel speed (mechanical):	max 16 m/s
Measurement length:	Tape length -5 mm each side

ELECTRICAL SPECIFICATIONS

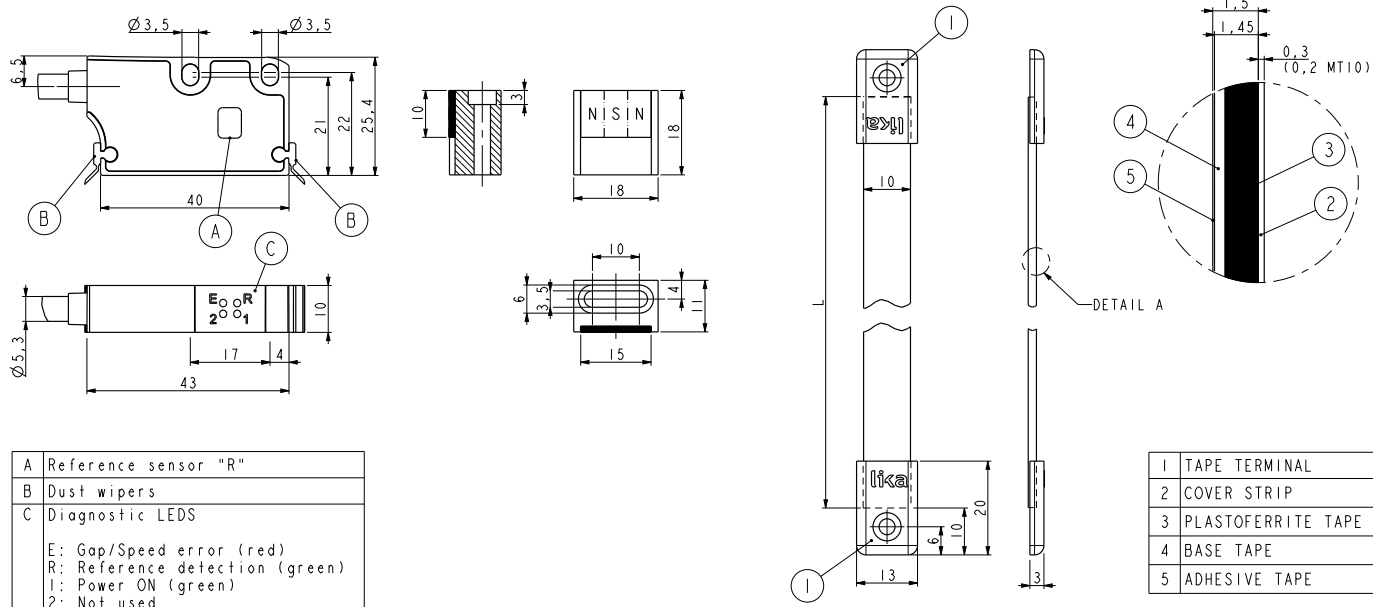
Resolution:	100, 50, 25, 10, 5, 2, 1, 0,5, 0,08 µm
Sensor accuracy:	±10 µm max.
Repeat accuracy:	±1 increment
Output circuits:	Line Driver, Push-Pull
Output signals:	AB0 /AB0
Counting frequency:	acc. to edge distance setting Push-Pull: 3 MHz max. @ 24Vdc, cable 1 m Line Driver: 5 MHz max. @ 5Vdc, cable 1 m
Power supply:	+5Vdc ±5%, +10Vdc ÷ +30Vdc
Power consumption:	70 mA max.
Protection:	against inversion of polarity (except 5Vdc version) and short-circuit
EMC:	acc. to EN 61000-6-2 level 3
Option:	Error signal output (PWM)

ACCESSORIES

MTI-0500:	Magnetic tape
LKM1309/5:	Reference pole support
KIT LKM-1440:	Set of tape terminals
KIT WIPERS:	Wipers for SMExx/SMSxx (10 pcs)
E-M12F8:	M12 8 pin mating connector
EC-M12F8-LK-M8-050:	cordset 5 meters with M12 conn.
EC-M12F8-LK-M8-100:	cordset 10 meters with M12 conn.

Edge distance selection

Order code	Edge distance (µsec)	Max. counting frequency (kHz)	Resolution (µm) vs. max. possible speed (m/s)								
			0,08	0,5	1	2	5	10	25	50	100
K	0,2	5000	0,40	2,50	5,00	10,00	-	-	-	-	-
H	0,3	3333	-	1,67	3,33	6,66	16,00	25,00	25,00	25,00	-
J	0,5	2000	-	1,00	2,00	4,00	10,00	20,00	25,00	25,00	-
A	1	1000	-	-	1,00	2,00	5,00	10,00	25,00	25,00	25,00
B	2	500	-	-	-	-	2,50	5,00	12,50	25,00	25,00
C	4	250	-	-	-	-	1,25	2,50	6,25	12,50	25,00



A	Reference sensor "R"
B	Dust wipers
C	Diagnostic LEDs
E: Gap/Speed error (red)	
R: Reference detection (green)	
1: Power ON (green)	
2: Not used	

1	TAPE TERMINAL
2	COVER STRIP
3	PLASTOFERRITE TAPE
4	BASE TAPE
5	ADHESIVE TAPE

SME51

LKM-1309/5

MTI-0500-10

Order code - Sensor

SME51	-	XXX	-	XXXX	-	X	-	XXXX	-	X	/Sxxx
		(a)		(b)		(c)		(d)		(e)	(f)

<p>(a) OUTPUT CIRCUITS & POWER SUPPLY Y2 = Push-Pull (AB), +10Vdc ÷ +30Vdc YC2 = Push-Pull (AB, /AB), +10Vdc ÷ +30Vdc L1 = Line Driver (AB, /AB), +5Vdc ±5% L2 = Line Driver (AB, /AB), +10Vdc ÷ +30Vdc</p>	<p>(b) RESOLUTION 0100 = 0,1 mm (100 µm) 0050 = 0,05 mm (50 µm) 0025 = 0,025 mm (25 µm) 0010 = 0,01 mm (10 µm) 0005 = 0,005 mm (5 µm) 0002 = 0,002 mm (2 µm) 0001 = 0,001 mm (1 µm) N500 = 0,0005 mm (0,5 µm) N008 = 0,00008 mm (80 nm)</p>	<p>(c) INDEX N = without I = every 5 mm R = unique reference signal (in combination with LKM1309/5)</p>	<p>(d) CABLE TYPE & LENGTH L020 = cable output 2 m Lxx0 = cable out. x m (max. length 10m) M005 = 0,5 m cable + M12 inline plug M020 = 2 m cable + M12 inline plug</p>	<p>(e) EDGE DISTANCE (see edge distance selection) K = 0,2 µs (*) H = 0,3 µs (*) J = 0,5 µs A = 1 µs B = 2 µs (standard value) C = 4 µs (*) only with output circuit L</p>	<p>(f) CUSTOM VERSION</p>
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Order code - Magnetic tape (for full options see dedicated MTI magnetic tape datasheet)

MTI	-	XXXX	-	XX	-	XXXXXX	-	X	-	X	-	X	-	XXX	/Sxxx
		(a)		(b)		(c)		(d)		(e)		(f)		(g)	(h)

<p>(a) CODING 0500</p>	<p>(b) WIDTH 10 = 10 mm</p>	<p>(c) LENGTH 001000 = 1 m 020000 = 20 m 002000 = 2 m 030000 = 30 m 004000 = 4 m 050000 = 50 m 010000 = 10 m 100000 = 100 m</p>	<p>(d) BIADHESIVE B = supplied N = not supplied</p>	<p>(e) PRINTING P = standard S = custom</p>	<p>(f) COVER STRIP C = supplied N = not supplied</p>	<p>(g) ACCURACY CLASS 100 = ±85 µm/m 050 = ±35 µm/m (up to 30 m) 010 = ±8 µm/m (up to 10 m)</p>	<p>(h) CUSTOM VERSION</p>
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Document release	Date	Description
1.3	15.10.2024	Resolution update (0100 = 100 µm)
1.2	September 2023	New order code
1.1	5.11.2020	Edge distance selection update