

- Magnetic ring encoder
- Sealed housing, IP68
- Contactless sensing
- Up to 50 mm hollow shaft
- Outdoor & mobile equipment applications

SGSM →  single sensor

SGSD →   redundant sensor



SGSM • SGSD

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range:	-40°C ÷ +85°C (-40°F +185°F)
Storage temperature range:	-40°C ÷ +100°C (-40°F +212°F)
Protection:	IP68

MECHANICAL SPECIFICATIONS

Dimensions:	see drawing
Hollow shaft diameter:	Ø 30, 50 mm
Shaft rotational speed:	10000 rpm max. (mechanical)
Gap sensor-ring:	0,1 ÷ 1,5 mm
Electrical connections:	M12 8 pin inline plug or Lika Hi-flex cable 1,0 m (3.3 ft)
Weight:	~ 200 g (7 oz)
Option:	• additional cable

ELECTRICAL SPECIFICATIONS

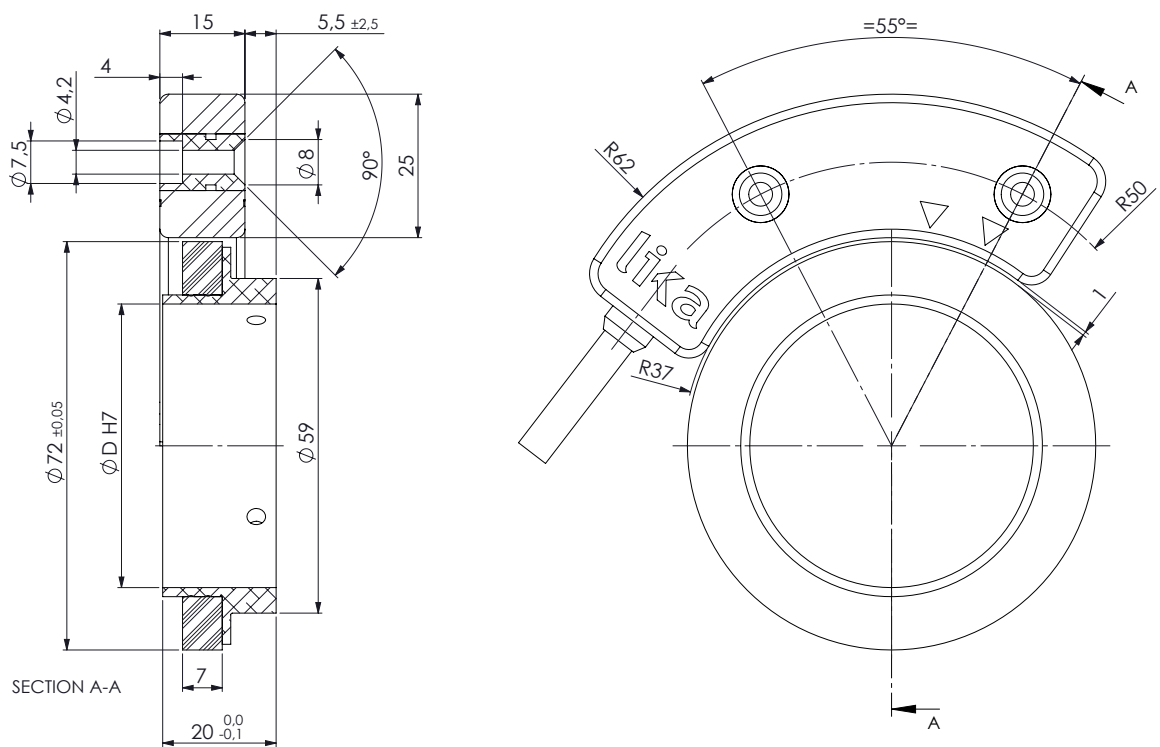
Resolution (PPR):	see table
Accuracy:	± 0,05°
Counting frequency:	100 kHz max.
Output circuits:	SGSM: 1 x Line Driver, Push-Pull SGSD: 2 x Line Driver, Push-Pull
Power supply:	+5Vdc ±5%, +10Vdc ÷ +30Vdc
Consumption:	70 mA max. (each sensor)
Output signals:	AB, /AB
Output current (per channel):	40 mA max.
Protection:	against inversion of polarity and short-circuit (except L circuit)
EMC:	electro-magnetic immunity, EN 61000-4-2 EN 61000-4-4

MATERIALS

Housing:	Macromelt OM 646-EN
Hub:	Anticorodal, UNI EN AW-6082
Ring:	Ferrite

ACCESSORIES

EM12F8:	M12 8 pin mating connector
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SGSM • SGSD

Order code Resolution	MRI/072-xxx-A-F-50/4N-R	MRI/072-xxx-A-F-54/4N-R	MRI/072-xxx-A-F-60/3N-R	MRI/072-xxx-A-F-64/3N-R
PPR				
4	50	54	60	64
8	100	108	120	128
12	150	162	180	192
16	200	216	240	256
20	250	270	300	320
32	400	432	480	512
40	500	540	600	640
48	600	648	720	768
64	800	864	960	1024

Order code - Sensor

SGSM SGSD	-	XX (a)	-	XXXX (b)	-	X (c)	-	XXXX (d)	/Sxxx (e)
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(a) OUTPUT CIRCUITS / POWER SUPPLY

Y2 = Push Pull (AB, /AB), +10V÷ +30V

L1 = Line Driver (AB, /AB), +5V±5%

(b) RESOLUTION

see table

(c) INDEX

N = without Index

(d) OUTPUT & CABLE LENGTH

L010 = cable output 1 m

Lxx0 = cable out. x m (max. length 10m)

M020 = 2 m cable + M12 8 pin inline plug (only SGSM)

(e) CUSTOM VERSION

Order code - Magnetic ring

MRI	/	XXX (a)	-	XXX (b)	-	X (c)	-	X (d)	-	X (e)	-	X (f)	-	X (g)	/Sxxx (d)
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(a) HUB TYPE / DIAMETER

072 = size 72 with grub screw fixing

(b) INSIDE DIAMETER

030 = 30 mm

050 = 50 mm

(c) HUB MATERIAL

A = aluminium

(d) MAGNET MATERIAL

F = ferrite

(e) MAGNETIC CODING

50-4 = 50 poles

54-4 = 54 poles

60-3 = 60 poles

64-3 = 64 poles

(g) MAGNETIZATION SURFACE

R = radial

(f) REFERENCE

N = without reference

(d) CUSTOM VERSION

Document release	Date	Description
1.7	17.12.2025	Magnetic ring order code (deleted Z from reference)
1.6	3.10.2025	Magnetic ring order code (F instead of P) and new drawing
1.5	19.12.2023	Order code, magnetization surface: option A eliminated
1.4	September 2023	New order code
1.3	12.11.2021	Updating order code resolution
1.2	05.08.2021	Updating of magnetic coding and resolution
1.1	22.09.2020	L1, Lx order code updated