



- Bearingless encoder
- Resolution up to 8192 PPR
- Non contact magnetic sensing
- Sensor/ring clearance up to 1,5 mm
- IP67 washdown protection (IP69K on request)



SMRIL • MRI

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range:	-25°C +85°C (-13°F +185°F)
Storage temperature range:	-40°C +100°C (-40°F +212°F)
Protection:	IP67

MECHANICAL SPECIFICATIONS

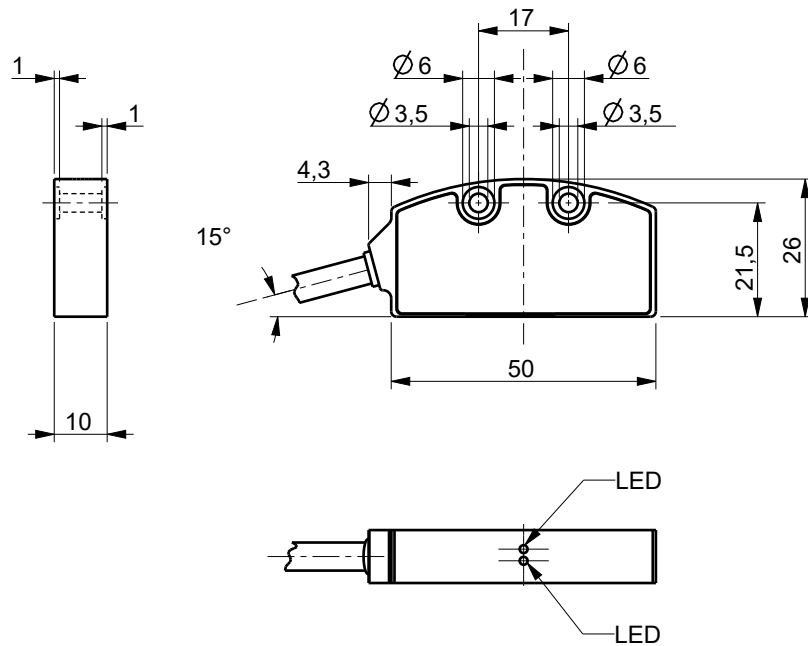
Dimensions:	see drawing
Hollow shaft diameter:	see drawing
Shaft rotational speed:	10000 rpm max. (mechanical)
Gap sensor-ring:	0.1 ÷ 1.5 mm (without reference) 0.1 ÷ 1 mm (with reference)
Electrical connections:	M12 8 pin inline plug or Lika Hi-flex cable 1,0 m (3.3 ft)
Option:	• additional cable

ELECTRICAL SPECIFICATIONS

Resolution (PPR):	see specifications
Accuracy:	± 0,05° (± 0,1° typical)
Output circuits:	Line Driver, Push-Pull
Power supply:	+5Vdc ±5%, +10Vdc ÷ +30Vdc
Consumption:	70 mA max.
Output signals:	AB /AB, ABO /ABO
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:	anticorodal, UNI EN AW-6082
Hub:	anticorodal, UNI EN AW-6082 or stainless steel
Ring:	ferrite or plastoferrite



SMRIL

Order code

SMRIL	-	XXX a	-	XXXX b	-	X c	-	XXXX d	-	X e	-	X f	/Sxxx g
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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

b RESOLUTION

see Resolution vs rpm combinations
 (other resolutions on request)

c INDEX

N = without
 R = with reference signal

d OUTPUT & CABLE LENGTH

L010 = cable output 1 m
 Lxx0 = cable out. x m (max. length 10m)
 M005 = 0,5 m cable + M12 8 pin inline plug
 M020 = 2 m cable + M12 8 pin inline plug

e RING TYPE (*)

E = MRI/72

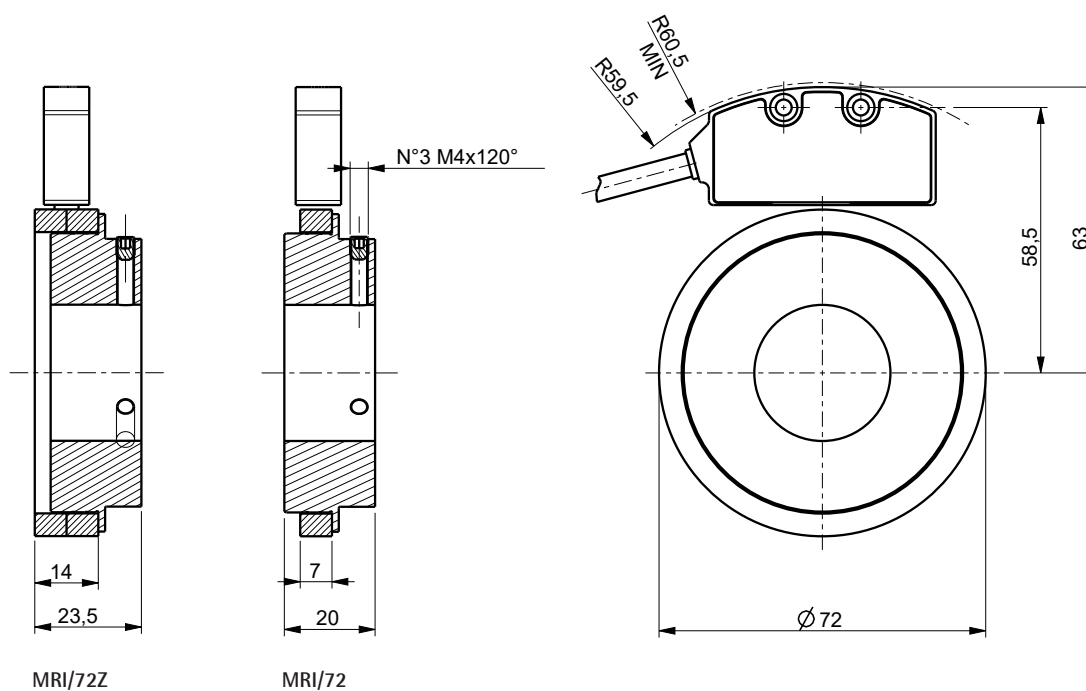
(*) Magnetic ring has to be ordered separately.

f MIN. EDGE DISTANCE

J = 0,5 μs (2 MHz)

g CUSTOM VERSION

(*) SMRIL sensors are specifically optimized for each ring type. Wrong ring type may not allow proper function.
 Magnetic rings have to be ordered separately.



Resolution vs rpm combinations

ORDER CODE MAGNETIC RING

Order code Resolution	PPR	Max. counting speed	Order code	D H7
32	512	40000 rpm	MRI/072-030-A-P-64/3N-R (without reference)	Ø30 mm
64	1024	20000 rpm	MRI/072-030-A-P-64/3Z-R (with reference)	Ø30 mm
128	2048	10000 rpm	MRI/072-050-A-P-64/3N-R (without reference)	Ø50 mm
256	4096	5000 rpm	MRI/072-050-A-P-64/3Z-R (with reference)	Ø50 mm
512	8192	2500 rpm		

Resolution vs rpm combinations

ORDER CODE MAGNETIC RING

Order code Resolution	PPR	Max. counting speed	Order code	D H7
80	1000	4000 rpm	MRI/072-030-A-P-50/3N-R (without reference)	Ø30 mm
160	2000	4000 rpm	MRI/072-050-A-P-50/3N-R (without reference)	Ø50 mm
400	5000	3200 rpm		

Document release	Date	Description
1.3	September 2023	New order code
1.2	26.09.2022	Added MRI/72Z
1.1	18.02.2021	Mechanical characteristics review