

- 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

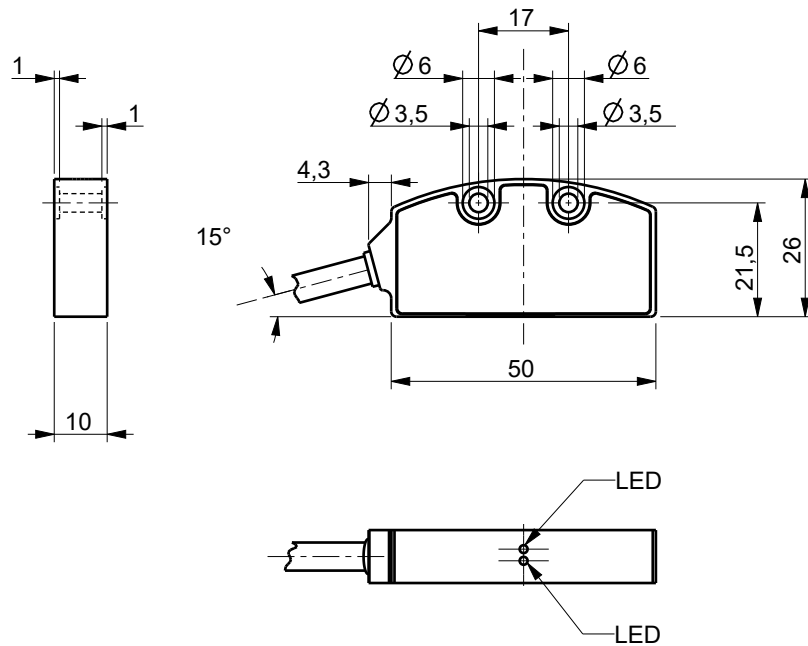
Dimensions:	see drawing
Hollow shaft diameter:	see drawing
Shaft rotational speed:	10000 rpm max. (mechanical)
Gap sensor-ring:	0.1 ÷ 1.5 mm (without reference) 0.1 ÷ 1 mm (with reference)
Electrical connections:	M12 8 pin inline plug or Lika Hi-flex cable 1,0 m (3.3 ft)
Option:	• additional cable

#### 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	-	XXXX	-	X	-	XXXX	-	X	-	X	/Sxxx
		(a)		(b)		(c)		(d)		(e)		(f)	(g)

(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/072

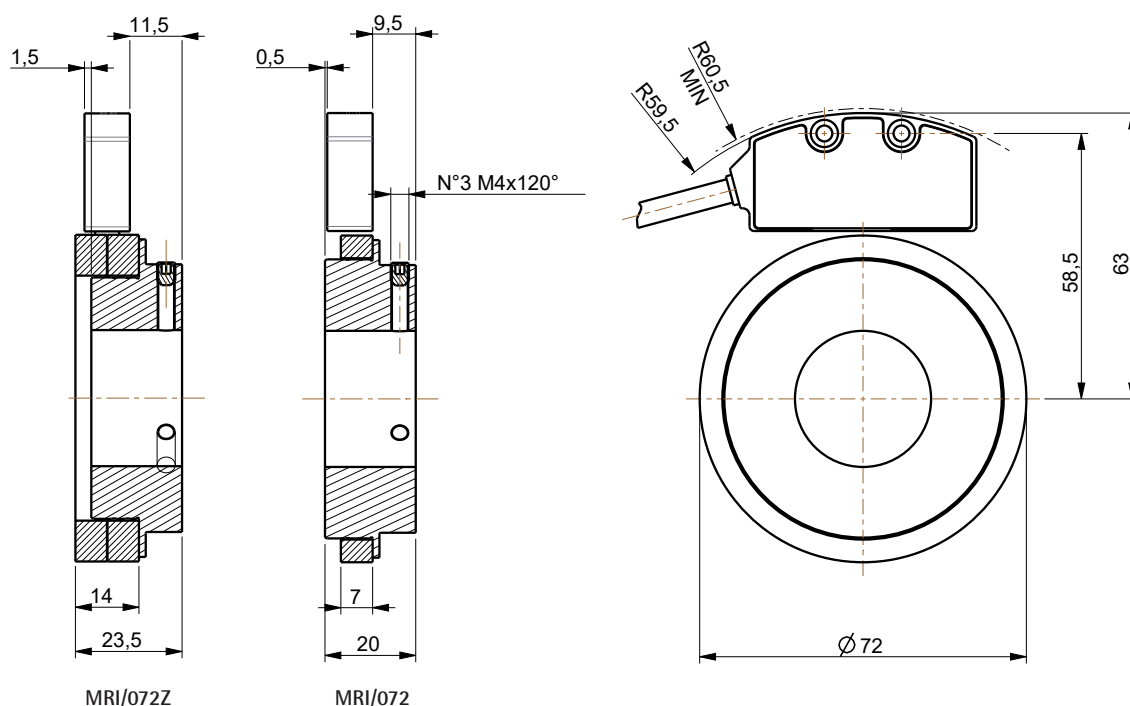
(\*) Magnetic ring has to be ordered separately.

(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-50/4N-R (without reference)	Ø30 mm
160	2000	4000 rpm	MRI/072-050-A-P-50/4N-R (without reference)	Ø50 mm
400	5000	3200 rpm		

Document release	Date	Description
1.4	15.04.2024	Drawing and order code magnetic ring
1.3	September 2023	New order code
1.2	26.09.2022	Added MRI/72Z
1.1	18.02.2021	Mechanical characteristics review