

Magnetic rings



For rotative measurement

Magnetic rings for rotative measurement

General: All the advantages of the magnetic measuring principle can be used for rotary movements by using magnet rings e.g. revolutions -, angular- or circumferential measurements.

The magnetic rings are a wear-free and space-saving alternative to optical rotary encoders and are insensitive against dirt, dust, liquids and vibrations.

For scanning the magnetic rings the conventional ELGO Incremental-Measuring-Systems of the product series GMIX, LMIX and EMIX can be used.

The ring - provided with a magnetic pole width (north/south poles) - is scanned contactless with a magnetic sensor system.

At present three different standard magnet ring sizes are available (on request customized versions are possible):

1. *Large:* outside diameter 72 mm, inside diameter 54 mm, width 7 mm
2. *Medium:* outside diameter 38 mm, inside diameter 31 mm, width 6.5 mm
3. *Small:* outside diameter 19.75 mm, inside diameter 14.7 mm, width 4.1 mm

The magnetic rings are available in two different versions:

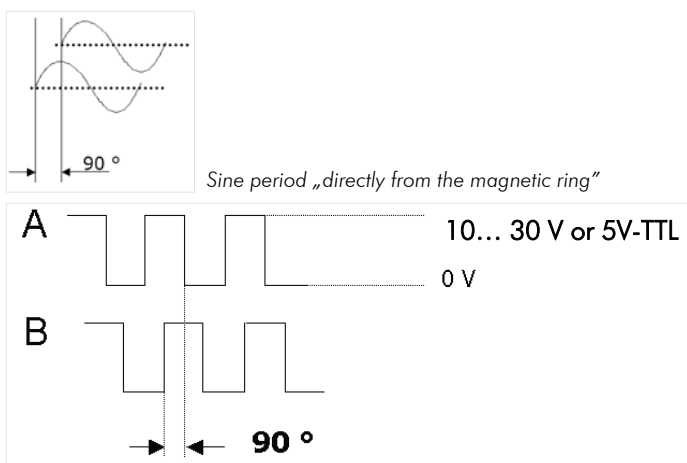
- With 5 mm pole width (for GMIX- and LMIX-sensors)
- With 2 mm pole width (for EMIX-sensors)

Assembly with sensor head: Like using the magnetic tape, make sure that the active sensor area - taking the radius of the magnetic rings, into account - is within the prescribed distance to the magnetic ring. Mounting instructions can be found in the different manuals of the measuring systems.

Product features:

- Interpolation up to 22800 pulses/revolution possible
- Direct assembly on axes possible (e. g. motor shaft)
- Contactless and wear free measurement principle
- Applicable in roughest environments (protection class IP67)
- Vibration- and shock-resistant

Applications: Rotative or angular measurements like revolutions, speed, angles, drafts etc.



Converted square wave period „translator output“



Example: Angle adjustment with customer designed magnetic ring

Technical specification:

Designation	MR2012	MR2030	MR3824	MR3860	MR7244	MR72114
Outer Ø in mm's	19,75 - 0.05	19,75 - 0.05	38 - 0.1	38 - 0.1	72 ±0.05	72 ±0.05
Inside Ø in mm's	14,7+0.2/-0.15	14,7+0.2/-0.15	30 ±0.5	30 ±0.5	54 ±0.8	54 ±0.8
Width in mm's	4,1 +0.05	4,1 +0.05	6,5 ±0.05	6,5 ±0.05	7 ±0.1	7 ±0.1
Number of poles / P	12	30	24	60	46	114
Pole width in mm's / pole	5	2	5	2	5	2
Pole width accuracy in %	< ± 1					
Total error	< 0.15° (standard) / < 0.007° (special applications)					
Material	Hard ferrite 8/22 according to DIN 17410, sintered isotrop					

Systems	LMIX1/2/3	EMIX1/2/3	GMIX1A	GMIX2
Interpolation factor / IF	200	200	500	2
max. pulse/r = IF x P	2400/4800/8800	6000/12000/22800	6000/12000/22000	24/48/88

Numbers indicated by 4 times edge triggering



Order reference:

For orders, please use the following order code:

MR -
 A A A A

A Format

MR2012

MR3824 (for LMIX and GMIX) pole width 5 mm

MR7244

MR2030

MR3860 (for EMIX) pole width 2 mm

MR72114

Currently, 3 mechanical versions are available (through the use of reducing rings are also smaller inner diameters are possible)

1. big: outside Ø 72 mm
inside Ø 54 mm
wide 7 mm
2. medium: outside Ø 38 mm
inside Ø 30 mm
wide 6,5 mm
3. small: outside Ø 19,7 mm
inside Ø 14,7 mm
wide 4,1 mm

For Example:

MR - 7 2 4 4
 A A A A

Magnetic ring with 72 mm's diameter, pole width 5 mm, pole number = 46, Type designation: **MR7244**, assembled with LMIX1 (interpolation factor 200), the max. number of pulses results from IF X P: 200 X 44 = 8800 pulses.

Your order:

MR -
 A A A A

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