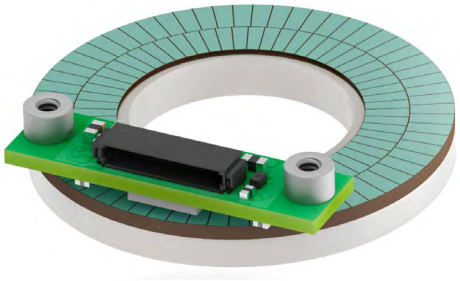
ROTAMAG
Absolute KIT-encoder

Series SMAR4A • SMAR4B • SMAR4C

- Ultra flat Kit-encoder
- Absolute magnetic sensing
- BiSS-C, SSI interfaces
- Resolution up to 20 bit (1048576 cpr)

Applications:
- Cobots
- Drones/UAV
- Camera/surveillance systems
- Servo motors

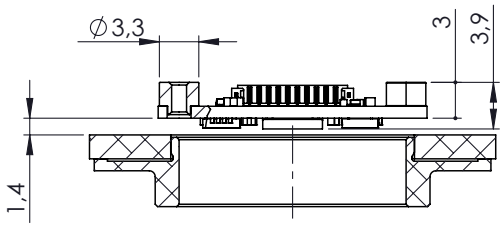


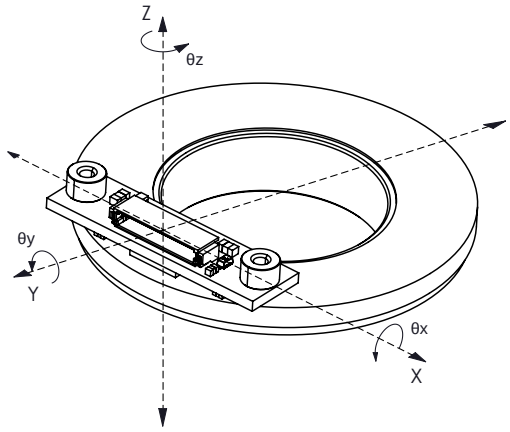
SMAR4x

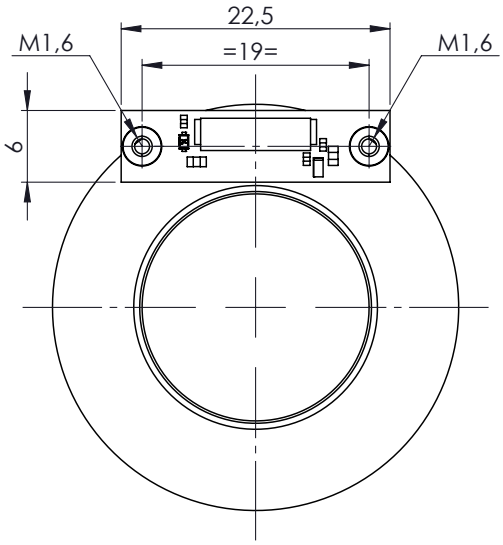
ENVIRONMENTAL SPECIFICATIONS	
Shock:	250 g, 6 ms acc. to CEI EN 60068-2-27
Vibrations:	10 g, 5-2000 Hz acc. to CEI EN 60068-2-6
Protection:	sensor IP00
Operating temperature range:	sensor: -25°C +100°C (-13°F +212°F) ring: -40°C +100°C (-40°F +212°F)
Storage temperature range:	-25°C +85°C (-13°F +185°F)

MECHANICAL SPECIFICATIONS	
Dimensions:	see drawing
Shaft rotational speed:	24000 rpm (mechanical) coding A max. 24000 rpm (electrical) coding B max. 12000 rpm (electrical) coding C max. 6000 rpm (electrical)
Gap sensor/ring:	0,4 ÷ 0,6 mm typ. (optimal 0,5 mm)
Radial/tangential misalignment:	0,5 mm max.
Electrical connections:	FFC connector Hirose FH34SR5-IOS-0.5SH PCB connector FCI 10144041-10 (Minitek) (connection cable to be ordered separately)
Weight:	<15 g (0,53 oz)

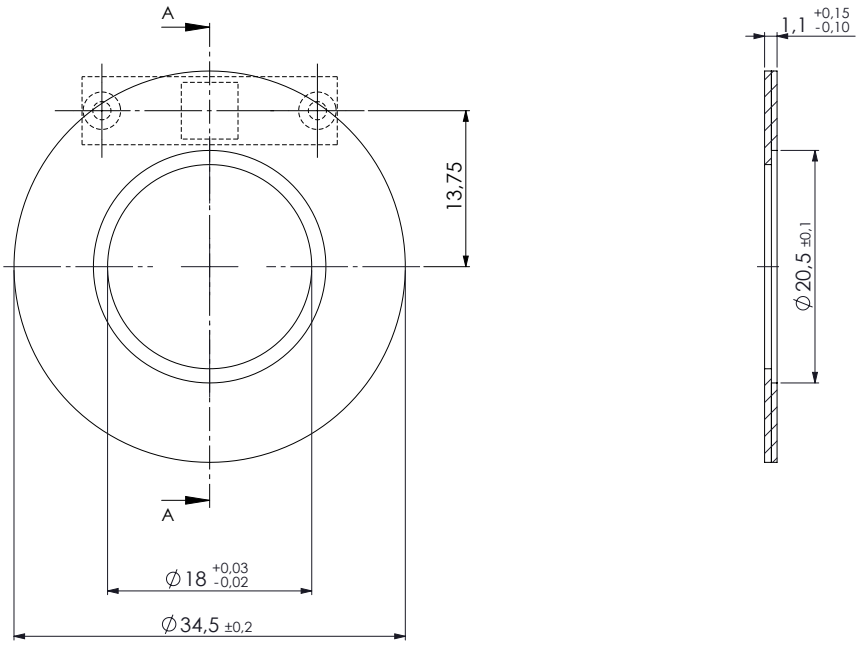
ELECTRICAL SPECIFICATIONS	
Resolution:	up to 20 bit (1048576 cpr) max.
Accuracy:	typ. ±0,05°
Output circuits:	BiSS-C (clock max. 5MHz) SSI (MSB aligned, clock 100 kHz ÷ 2MHz, Tp = 20µs)
Power supply:	+5Vdc ± 5%
Power consumption:	typ. 60 mA



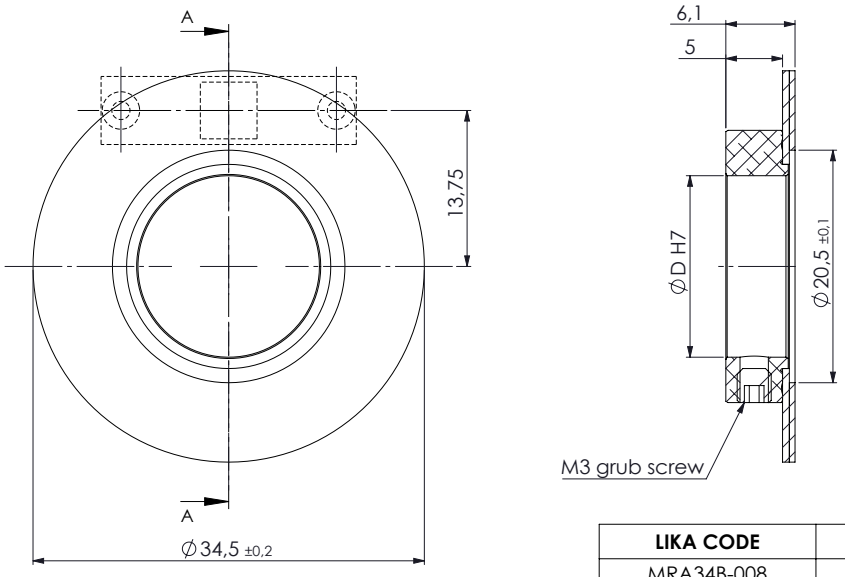




MAXIMUM DISPLACEMENT VALUE	
X [mm]	±0.5 mm
Y [mm]	±0.5 mm
Z [mm]	± 0.1
θx [°]	±1°
θy [°]	±1°
θz [°]	±1°

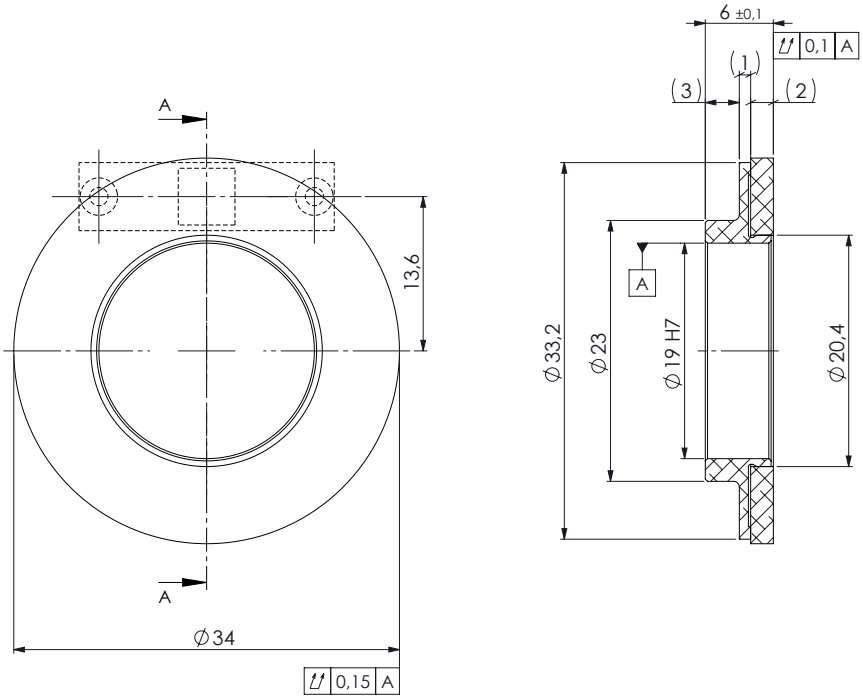


MRA34A-018-S-E-32NB-A

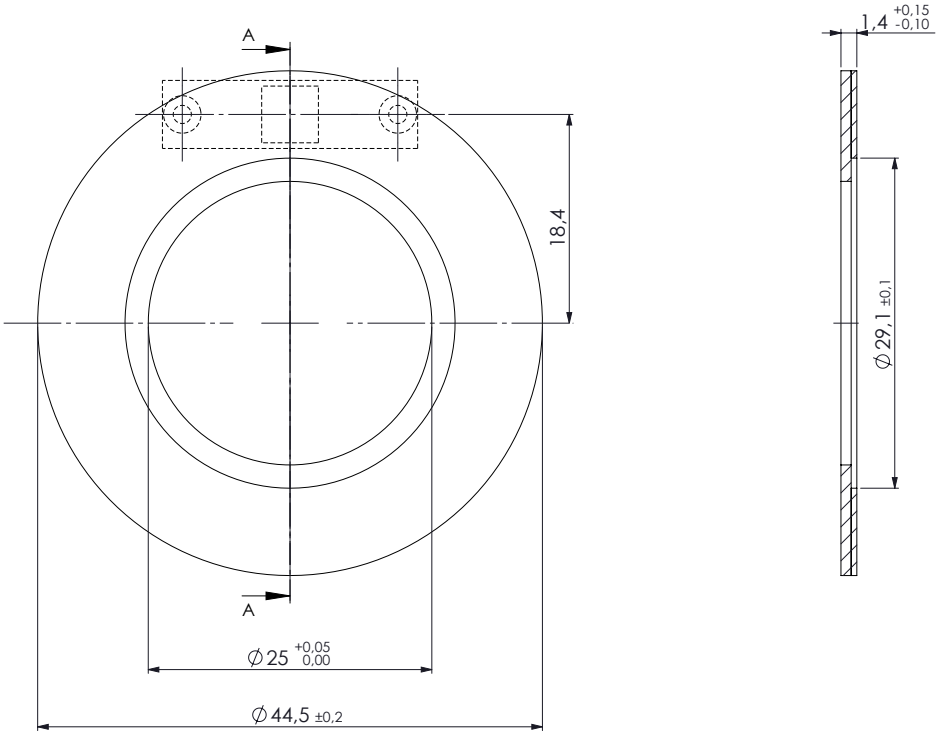


LIKA CODE	ØD
MRA34B-008	8 mm
MRA34B-014	14 mm
MRA34B-016	16 mm

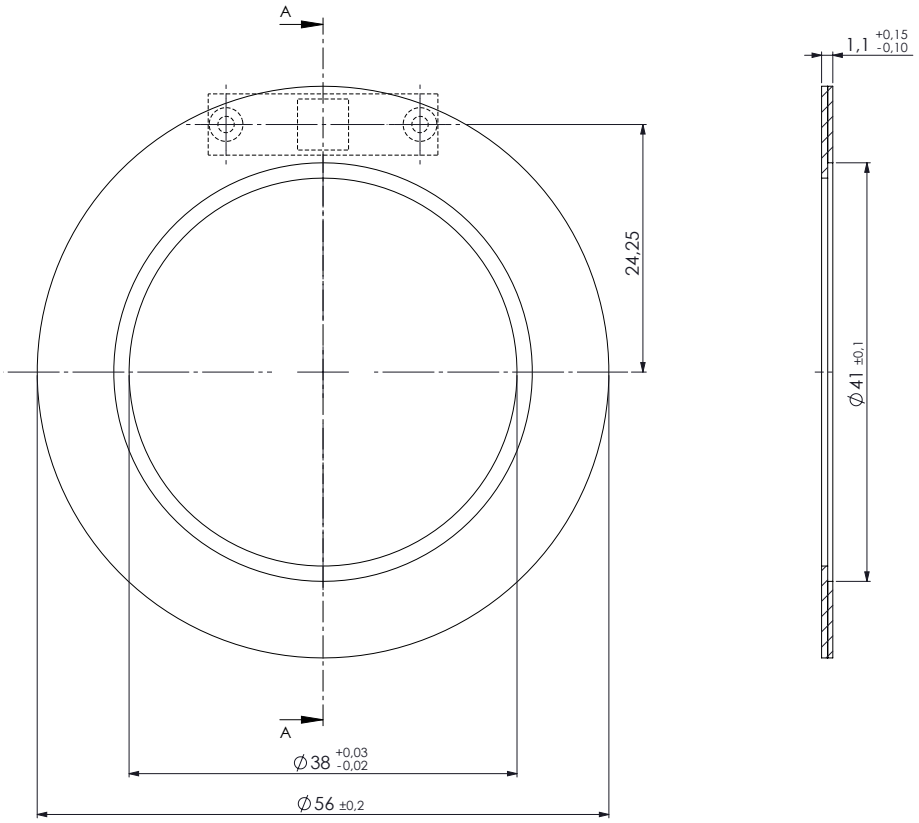
MRA34B-008-A-E-32NB-A
MRA34B-014-A-E-32NB-A
MRA34B-016-A-E-32NB-A



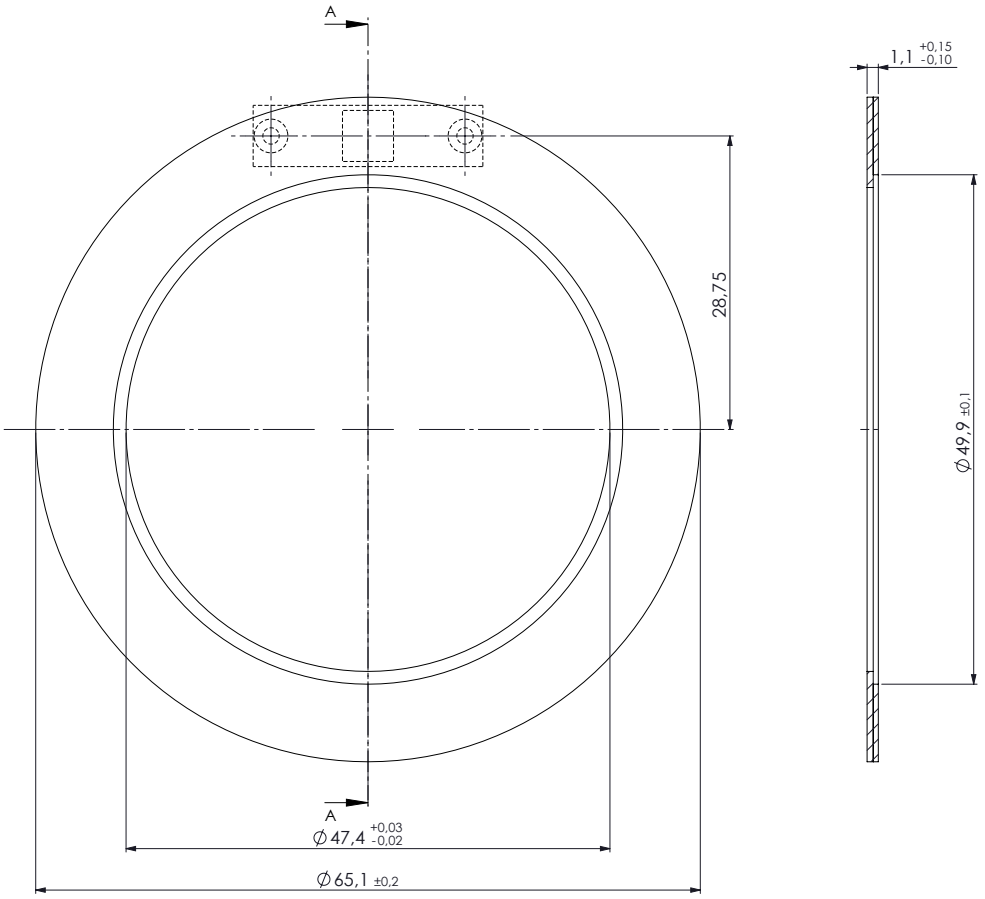
MRA34D-019-A-F-32NB-A



MRA44A-025-S-E-32NC-A



MRA56A-038-S-E-64NA-A



MRA65A-047-S-E-64NB-A

Order code

SMAR4	X ⓐ	-	XXX ⓑ	-	XXX/XXXXX-XX ⓒ	-	XX ⓓ	-	/XXXX ⓔ

ⓐ **POLE PITCH**
A = 1,28
B = 1,50
C = 2,00

ⓑ **INTERFACE / POWER SUPPLY**
SC1 = BiSS-C mode
BG1 = SSI Binary

ⓒ **RESOLUTION (ABS/INC) - CODING**
017/00000-16 = 17 bit, 16
017/00000-32 = 17 bit, 32
017/00000-64 = 17 bit, 64
018/00000-16 = 18 bit, 16
018/00000-32 = 18 bit, 32
018/00000-64 = 18 bit, 64
019/00000-32 = 19 bit, 32
019/00000-64 = 19 bit, 64
020/00000-64 = 20 bit, 64

ⓓ **CONNECTION**
X1 = Amphenol FCI 10144041-10 Minitek
(mating type: FCI 10145492-10)

ⓔ **CUSTOM VERSION**
/Sxxx = special version
/Pxxx = special firmware setting

MRA/XXX	-	INNER Ø XXX	-	HUB X	-	SCALE X	-	CODING XXXX	-	ORIENTATION X	CUSTOM /Sxxx
MRA/34A		**018** = 18 mm		**S** = Steel		**E** = Elastomer		**32NB** = 32/1.50		**A** = Axial	**/Sxxx**
MRA/34B		**008** = 08 mm		**A** = Aluminium		**E** = Elastomer		**32NB** = 32/1.50		**A** = Axial	**/Sxxx**
MRA/34B		**014** = 14 mm		**A** = Aluminium		**E** = Elastomer		**32NB** = 32/1.50		**A** = Axial	**/Sxxx**
MRA/34B		**016** = 16 mm		**A** = Aluminium		**E** = Elastomer		**32NB** = 32/1.50		**A** = Axial	**/Sxxx**
MRA/34D		**019** = 19 mm		**A** = Aluminium		**F** = Ferrite		**32NB** = 32/1.50		**A** = Axial	**/Sxxx**
MRA/44A		**025** = 25 mm		**S** = Steel		**E** = Elastomer		**32NC** = 32/2.00		**A** = Axial	**/Sxxx**
MRA/56A		**038** = 38 mm		**S** = Steel		**E** = Elastomer		**64NA** = 64/1.28		**A** = Axial	**/Sxx**x
MRA/65A		**047** = 47 mm		**S** = Steel		**E** = Elastomer		**64NB** = 64/1.50		**A** = Axial	**/Sxxx**

Ring coding has to match the sensor coding

e.g.: SMAR4**B**-XXX-XXX/XXXXX-**32**-XX with MRA/XXX-XXX-X-X-**32B**-X

Document release	Date	Description
1.1	26.02.2026	Update order code and rings
1.0	July 2023	First issue