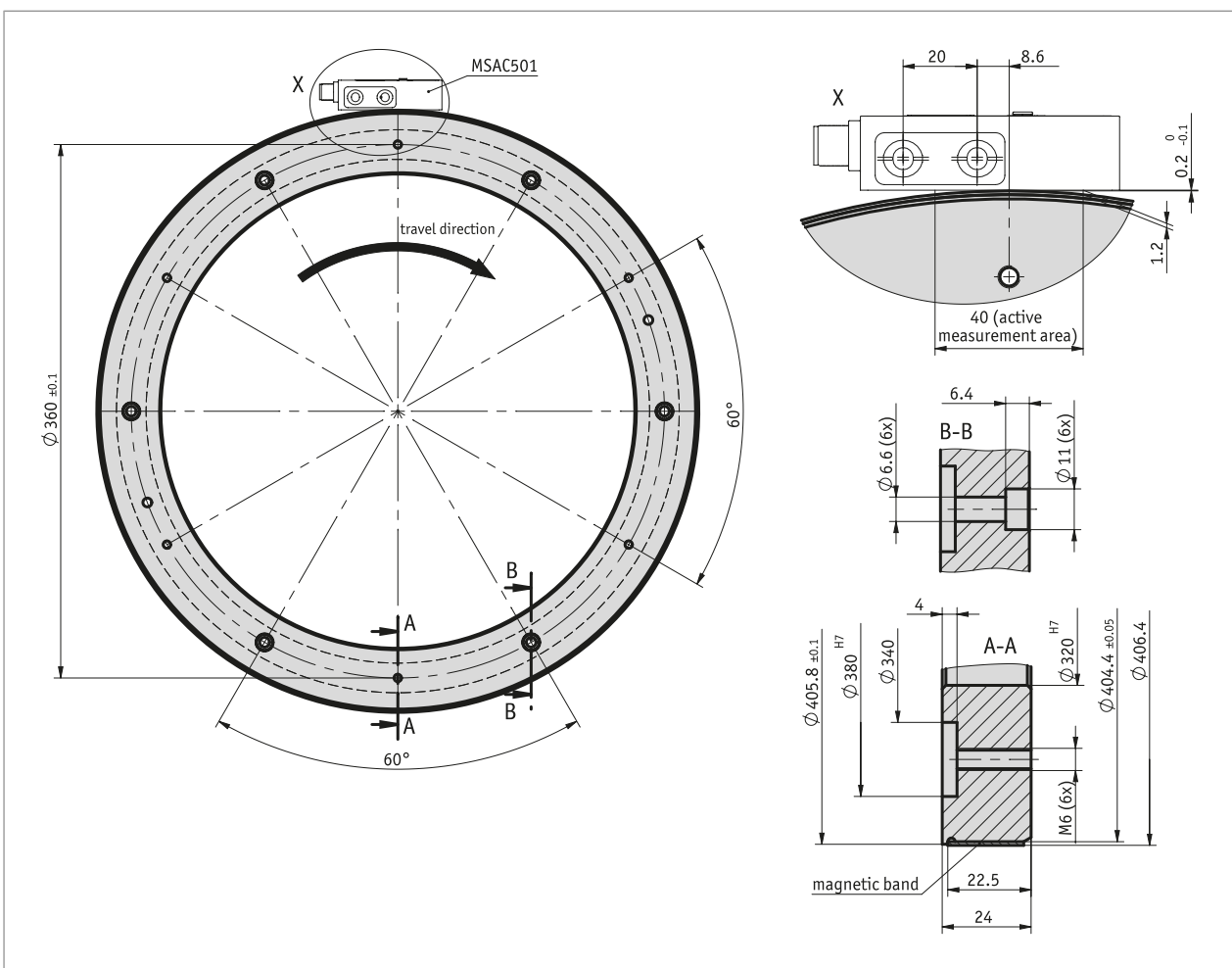


Magnetic ring MRAC501

Absolute, high-resolution position acquisition for rotative applications

Profile

- External diameter 406.4 mm, 256 poles (code size 8 bits)
- Hollow shaft diameter ≤ 320 mm
- Speed absolute $\leq 234 \text{ min}^{-1}$
- Speed incremental $\leq 1172 \text{ min}^{-1}$



Mechanical data

Feature	Technical data	Additional information
Flange	aluminum	
Speed	$\leq 234 \text{ min}^{-1}$	absolute
	$\leq 1172 \text{ min}^{-1}$	incremental, mechanical

System data

Feature	Technical data	Additional information
Pole length	5 mm	
System accuracy	±0.06 ° at T _U = 20 ° C	
Measuring range	360 °	

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-40 ... 80 °C	
Storage temperature	-40 ... 80 °C	
Relative humidity	100 %	condensation admissible

System resolution MRAC501 with MSAC501

■ System resolution* absolute and incremental [bit]

		Total bits/revolution
Scaling MSAC501 magnetic sensor	7 bit	15
	8 bit	16
	9 bit	17
	10 bit	18
Number of poles of MRAC501 magnetic ring		256 (8 bit)

■ System resolution* absolute [steps/revolution]

Bits/revolution	steps per revolution	Resolution
15	32768	0.011° (39.6")
16	65536	0.0055° (19.8")
17	131072	0.0027° (9.9")
18	262144	0.0014° (4.9")

■ System resolution incremental [steps/revolution]

Bits/revolution	Steps per revolution**	Resolution**
15	131072	0.0027° (9.9")
16	262144	0.0014° (4.9")
17	524288	0.0007° (2.5")
18	1048576	0.0003° (1.2")

* System resolution = sensor scaling + ring code size

**After 4-fold evaluation of the incremental signals

Rotational speed of MRAC501 with MSAC501

■ incremental, code size 8 bits, 256 poles

		Speed [rpm]								
		7 bit	8 bit	9 bit	10 bit	11 bit	12 bit	13 bit	14 bit	15 bit
Incremental scaling MSAC501 magnetic sensor	7 bit	1172	732	366	146	92	46	23	11.4	5.6
	8 bit	916	366	183	73	46	23	11.4	5.7	2.8
	9 bit	458	183	92	37	23	11.4	5.7	2.9	1.39
	10 bit	229	92	46	18.3	11.4	5.7	2.9	1.43	0.69
Pulse interval [µs]		0.2	0.5	1	2.5	4	8	16	32	66
Counting frequency [kHz]		1250	500	250	100	62.5	31.25	15.63	7.81	3.79

■ Absolute

code size	Speed [rpm]
8 bit	234

Order

■ Note

When ordering sensor MSAC501, please be sure to select code size 8.

■ Order key

MRAC501 - 8 - 320

 Scope of delivery: MRAC501
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