

Encoders without bearing

Combination of sensor / magnet rotor

Resolution max. 4096 ppr

MDFK 10



MDFK 10

Features

- Magnetic sensor with rotor
- Resolution max. 16384 steps
- Output signals A 90° B or A 90° B +N
- Output circuits: push-pull and RS422
- Non-contact, wear-free sensing system
- High resistant to dirt, vibrations

Technical data - electrical ratings

Consumption w/o load	≤30 mA
Resolution (steps/turn)	1024...4096
Reference signal	Zero pulse, width 90°
Output frequency	≤1 MHz
System accuracy	±0.5 °
Jitter	≤15 %
Interpolation	32-fold, 64-fold

MDFK 10G

Voltage supply	8...30 VDC
Reverse polarity protection	Yes, to GND
Output signals	A 90° B, 0
Output circuit	Push-pull short-circuit proof
Circuit current max.	50 mA
Voltage drop	<2 VDC (I=20 mA)

MDFK 10T

Voltage supply	5 VDC ±5 %
Reverse polarity protection	No
Output signals	A 90° B, N + inverted
Output circuit	RS422
Circuit current max.	RS422 specific
Voltage drop	RS422 specific

Technical data - mechanical design

Dimensions W x H x L	15 x 10 x 40 mm
Protection DIN EN 60529	IP 67
Working distance max.	0.6 mm
Starting torque	0.5 Nm
Material	Housing: PA6
Operating temperature	-25...+85 °C
Relative humidity	95 %
Resistance	DIN EN 60068-2-6 Vibration 20 g, 10-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Weight approx.	105 g
Connection	Cable 2 m

Encoders without bearing

Combination of sensor / magnet rotor

Resolution max. 4096 ppr

MDFK 10

Part number

Push-pull

MDFK 10G8124/

Interpolation
N32 32-fold
N64 64-fold

RS422

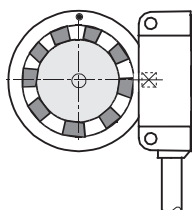
MDFK 10T8105/

Interpolation
N32 32-fold
N64 64-fold

Selection of sensor / magnet rotor

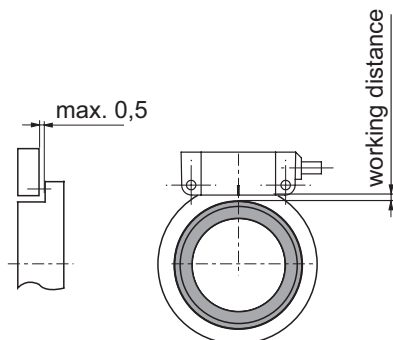
required pulse per turn	sensor-interpolation	poles per magnetring/rotor
1024	32-fold	32
1600	32-fold	50
2048	64-fold	32
3200	64-fold	50
4096	64-fold	64
other pulses on request		

Mounting and direction of travel

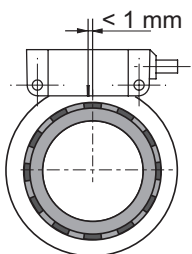


CHA is leading CHB by 90° when rotating CW.

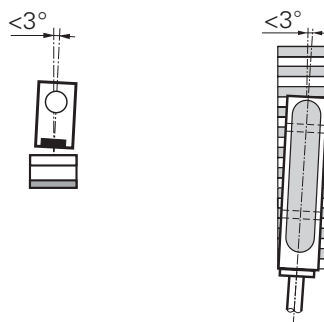
Working distance



Axial misalignment



Angular misalignment



Encoders without bearing

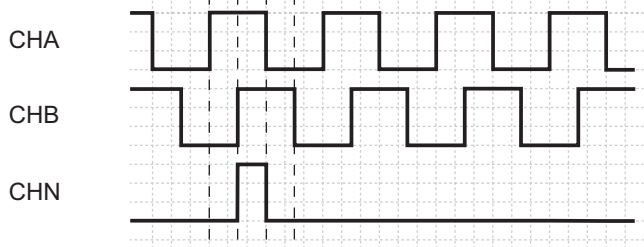
Combination of sensor / magnet rotor

Resolution max. 4096 ppr

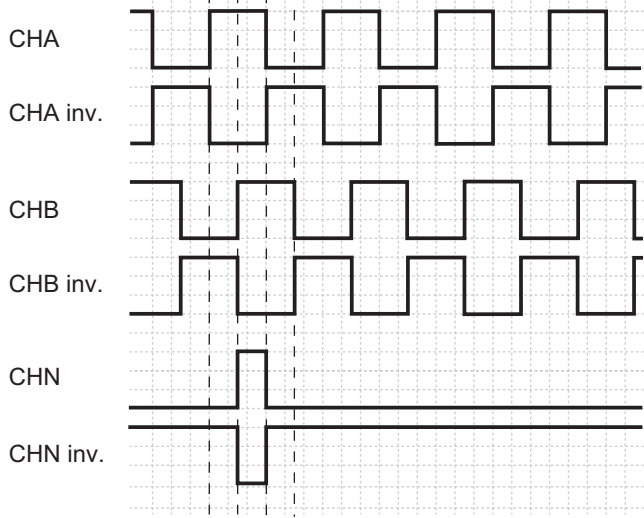
MDFK 10

Output signals

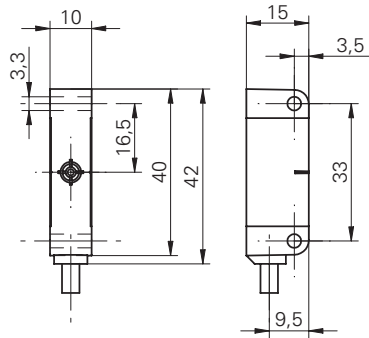
Push-pull



RS422



Dimensions



Terminal assignment

Push-pull A 90° B, N (3-channel)

cable color		signals
brown	BN	+Vs
white	WH	0 V
green	GN	CHA
yellow	YE	CHB
pink	PK	CHN
cable data PUR 5 x 0.14 mm ² , shielded		

RS422 A 90° B, N + inv. (3-channel)

cable color		signals
brown	BN	+Vs
green	GN	CHA
red	RD	CHA inv.
yellow	YE	CHB
blue	BU	CHB inv.
pink	PK	CHN
gray	GY	CHN inv.
white	WH	0 V
cable data PUR 8 x 0.14 mm ² , shielded		

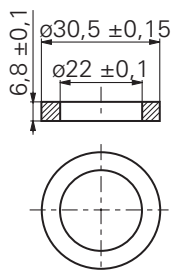
Encoders without bearing

Combination of sensor / magnet rotor

Resolution max. 4096 ppr

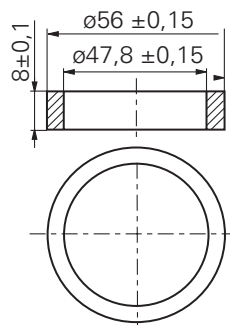
MDFK 10

Ring magnets



max. speed 20'000 rpm

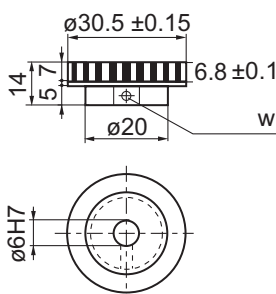
MRAP X32/031X022	magnetring 32 pole
MRAP X36/031X022	magnetring 36 pole



max. speed 10'000 rpm

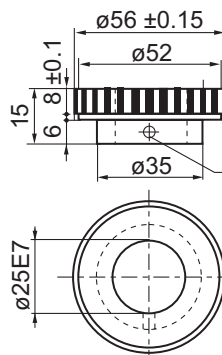
MRAP X50/056X048	magnetring 50 pole
MRAP X64/056X048	magnetring 64 pole

Magnet rotors without reference magnet



max. speed 20'000 rpm

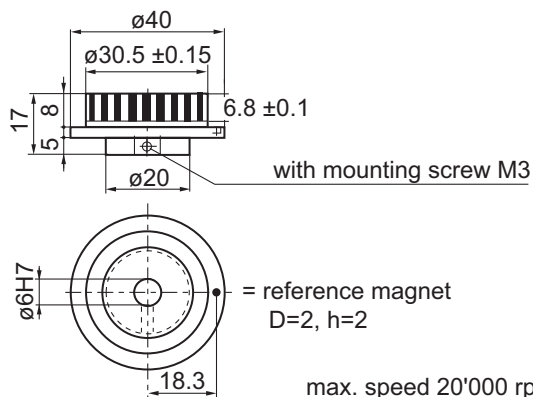
MSAP X32/031X006	magnetrotor 32 pole w/o ref.
MSAP X36/031X006	magnetrotor 36 pole w/o ref.



max. speed. 10'000 rpm

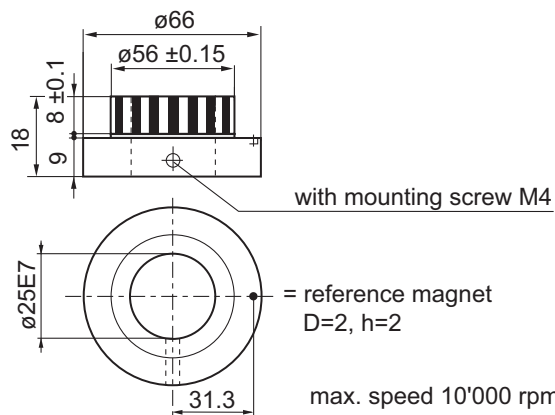
MSAP X50/056X025	magnetrotor 50 pole w/o ref.
MSAP X64/056X025	magnetrotor 64 pole w/o ref.

Magnet rotors with reference magnet



max. speed 20'000 rpm

MSAP Z32/040X006	magnetrotor 32 pole with ref.
MSAP Z36/040X006	magnetrotor 36 pole with ref.



max. speed 10'000 rpm

MSAP Z50/066X025	magnetrotor 50 pole with ref.
MSAP Z64/066X025	magnetrotor 64 pole with ref.