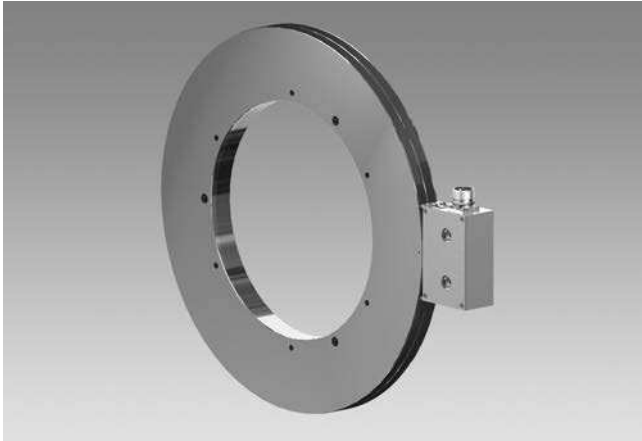


# Encoders without bearings - incremental

Magnetic sensing, through hollow shaft max.  $\varnothing 340$  mm

256...16384 pulses or 256 sinewave cycles per turn

## MHGE 400 - HDmag



MHGE 400 - Version for axial screw mounting

### Technical data - electrical ratings

Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approvals	CE, Option: DNV approval

### Technical data - electrical ratings (square-wave)

Voltage supply	4.75...30 VDC
Consumption w/o load	$\leq 70$ mA
Pulses per revolution	256...16384
Phase shift	$90^\circ \pm 10^\circ$
Scan ratio	40...60 %
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Magnetic
Output frequency	$\leq 300$ kHz
Output signals	A+, B+, R+, A-, B-, R-
Output stages	HTL TTL/RS422

### Technical data - electrical ratings (SinCos)

Voltage supply	5 VDC
Consumption w/o load	$\leq 70$ mA
Sinewave cycles per turn	256
Phase shift	$90^\circ \pm 5^\circ$
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Magnetic
Output signals	A+, B+, R+, A-, B-, R-
Output stages	SinCos 1 Vpp
Difference of SinCos amplitude	$\leq 20$ mV
Harmonics typ.	-40 dB
DC offset	$\leq 20$ mV

### Features

- Sinewave or square-wave signals
- Robust and wearless
- High protection through fully encapsulated electronics
- Large tolerances: axial  $\pm 3$  mm, radial max. 2.2 mm
- Very compact dimensions
- Simple mounting, easy adaptation

### Optional

- DNV approval on request
- Redundant sensing head on request
- Increased operating speed through triple-bandage

### Technical data - mechanical design

Sensor head	Standard signal processing
Size (flange)	$\varnothing 405.4$ mm
Axial tolerance	$\pm 3$ mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Shaft type	$\varnothing 70...340$ mm (through hollow shaft)
Protection DIN EN 60529	IP 67 (head), IP 68 (wheel)
Operating temperature	$-40...+100$ °C
Operating speed	$\leq 2000$ rpm
Resistance	IEC 60068-2-6 Vibration 30 g, 55-2000 Hz IEC 60068-2-27 Shock 300 g, 2 ms
Accuracy of magnetic measure	$\pm 75$ "
Connection	Flange connector M23, 12-pin

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MHGE 400 - HDmag

## Part number

MHGE 400 

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Pulse number/sinewave cycles - see table

Voltage supply / signals

- S 5 VDC / SinCos
- R 4,75...30 VDC / square-wave (TTL)
- T 5 VDC  $\pm$ 5 % / square-wave (TTL)
- H 10...30 VDC / square-wave (HTL)
- U 5...30 VDC / square-wave (5 VDC = TTL / 10...30 VDC = HTL universal)

Mounting type / hollow shaft ( $\varnothing$  mm)

Screw mounting

G140, G160, G170, G180, G190, G210, G230, G250, G300, G310, G340

Clamping set mounting

Z70, Z75, Z80, Z85, Z90, Z95, Z100, Z110, Z120, Z130, Z140, Z150, Z160, Z170, Z200

Shrink fit mounting

H160, H180, H190, H210, H230, H250, H270, H300, H310, H340

Bandaging

- B Encoder wheel standard bandage
- T Encoder wheel with triple-bandage

## Pulse number/sinewave cycles

256	1024	4096	16384
512	2048	8192	

Sinewave cycles only 256 at SinCos output.

## Accessories

### Connectors and cables

HEK 8      Sensor cable for encoders

# Encoders without bearings - incremental

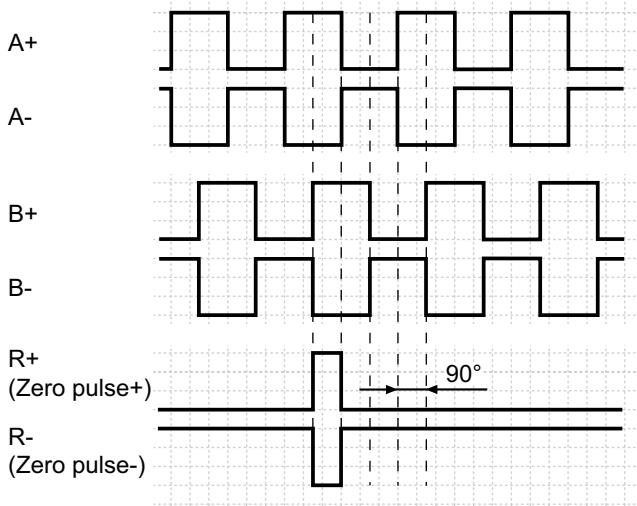
Magnetic sensing, through hollow shaft max.  $\varnothing 340$  mm

256...16384 pulses or 256 sinewave cycles per turn

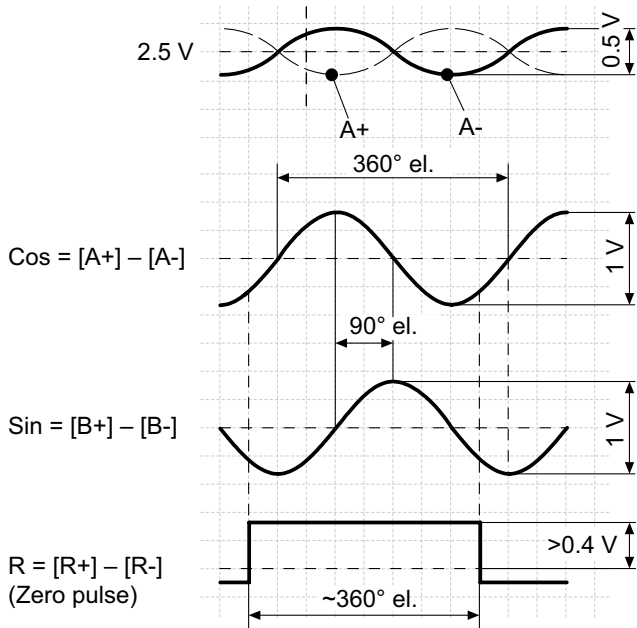
## MHGE 400 - HDmag

### Output signals

Version with square-wave signals HTL oder TTL at positive rotating direction



Version with SinCos signals at positive rotating direction

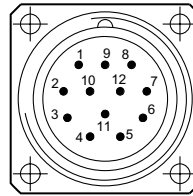


### Terminal assignment

#### View A

Flange connector M23, 12-pin, male contacts, CCW

Pin	Assignment
1	B-
2	Do not use
3	R+ (Zero pulse)
4	R- (Zero pulse inv.)
5	A+
6	A-
7	Do not use
8	B+
9	Do not use
10	⊥
11	Do not use
12	+UB



# Encoders without bearings - incremental

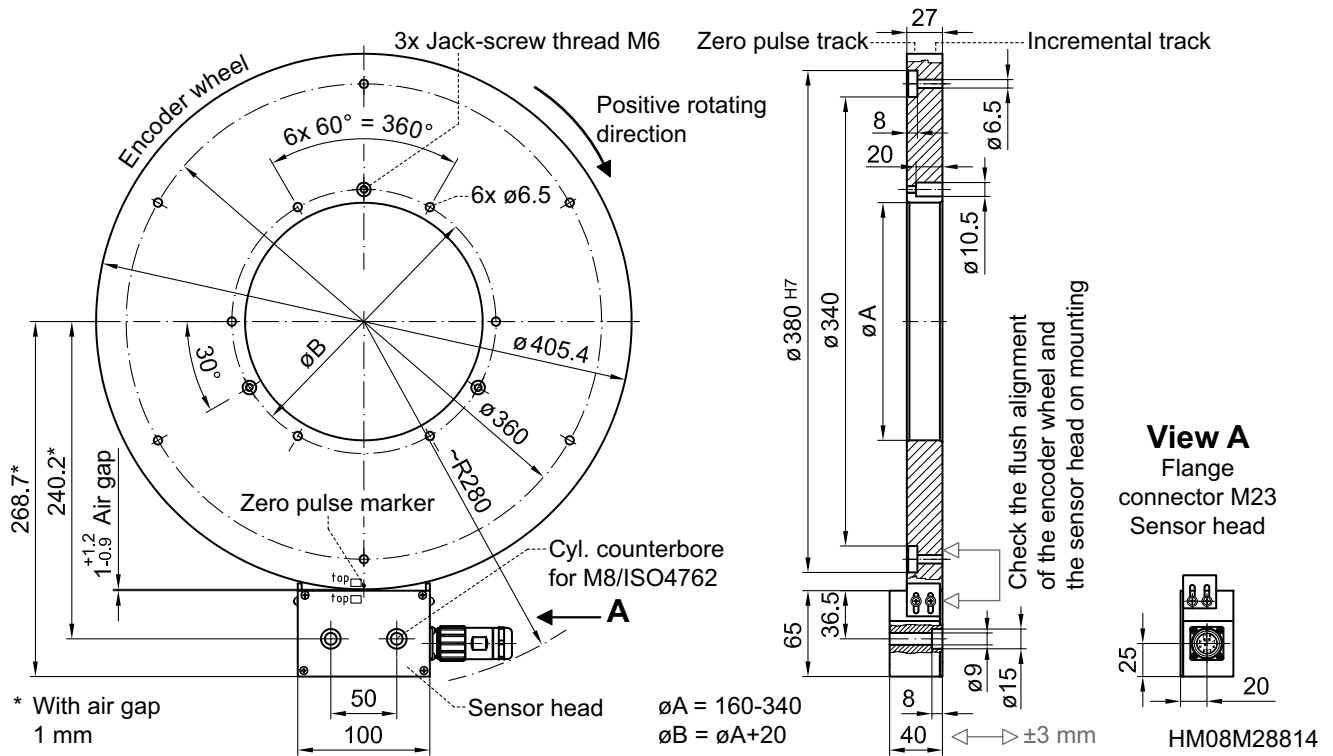
Magnetic sensing, through hollow shaft max.  $\varnothing 340$  mm

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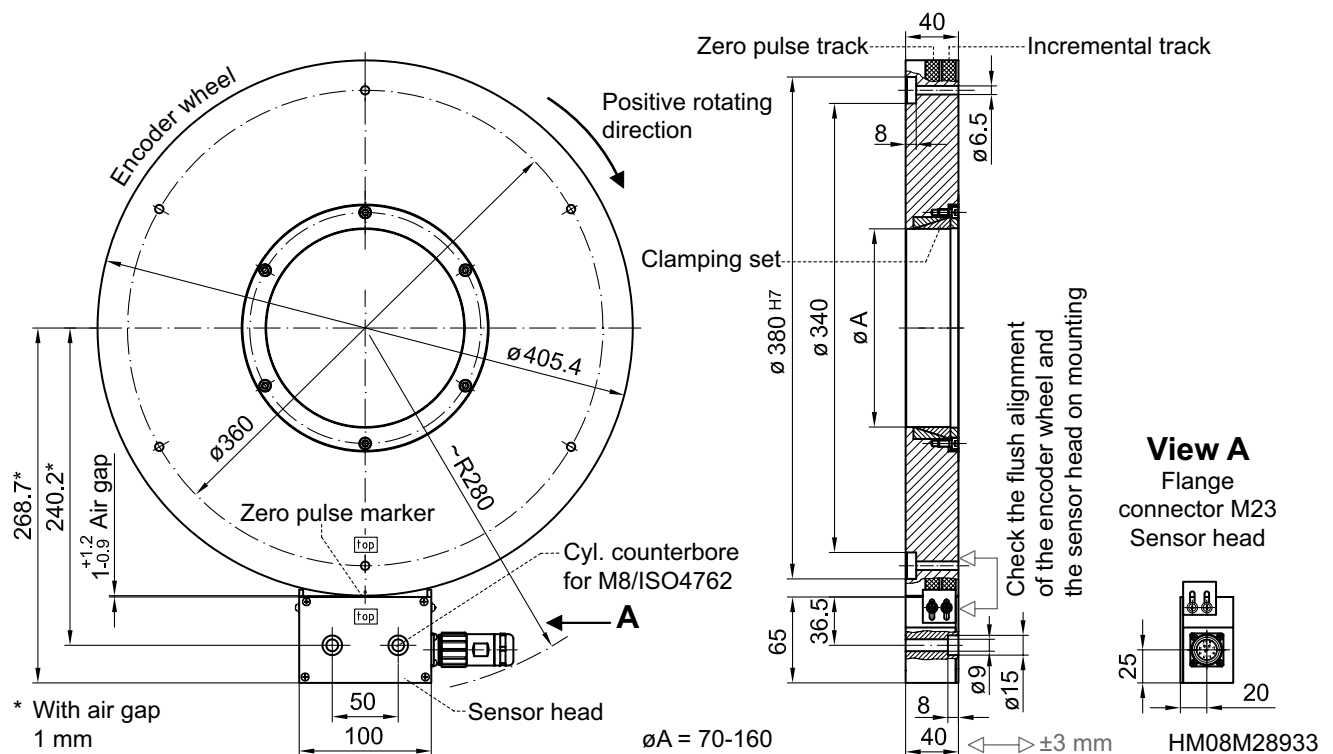
MHGE 400 - HDmag

## Dimensions

### Version for axial screw mounting



### Version for clamping set mounting





# Encoders without bearings - incremental

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**MHGE 400 - *HDmag***

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