

# Encoders without bearings - incremental

Magnetic sensing, through hollow shaft max.  $\varnothing 80$  mm

64...4096 pulses or 64 sinewave cycles per turn

## MHGE 100 - HDmag



MHGE 100 - 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	64...4096
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	64
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)	$\varnothing 99,9$ mm
Axial tolerance	$\pm 3$ mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Shaft type	$\varnothing 16...80$ mm (through hollow shaft)
Protection DIN EN 60529	IP 67 (head), IP 68 (wheel)
Operating temperature	$-40...+100$ °C
Operating speed	$\leq 8000$ 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	$\pm 300$ "
Connection	Flange connector M23, 12-pin

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## Part number

MHGE 100 

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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

G38, G45, G50, G55, G60, G65, G70, G75, G80

Clamping set mounting

Z16, Z20, Z22, Z25, Z28, Z32, Z35, Z38, Z40, Z42, Z45, Z48, Z50, Z55, Z60, Z63, Z65

Shrink fit mounting

H38, H45, H50, H55, H60, H65, H70, H75, H80

Clamping ring mounting

K25, K30, K32, K38, K40, K45, K48, K50, K55, K56, K60, K65, K70, K75

Bandaging

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

## Pulse number/sinewave cycles

64	256	1024	4096
128	512	2048	

Sinewave cycles only 64 at SinCos output.

## Accessories

### Connectors and cables

HEK 8	Sensor cable for encoders
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# Encoders without bearings - incremental

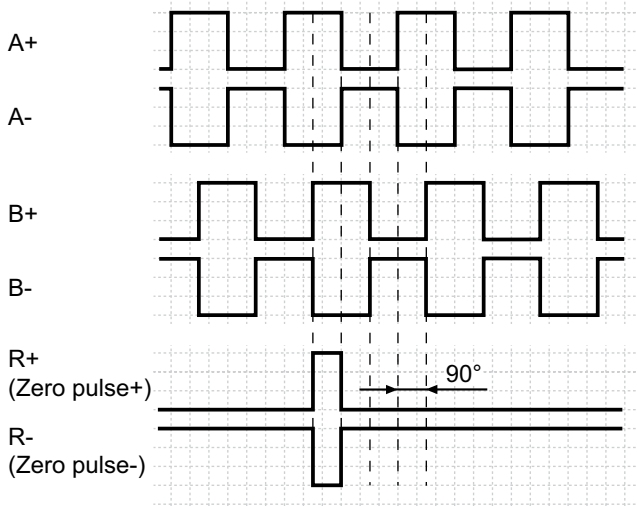
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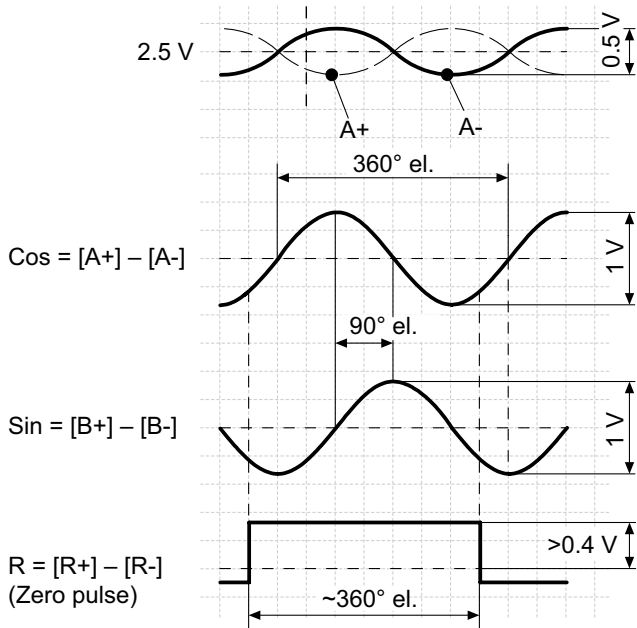
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### Output signals

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



Version with SinCos signals at positive rotating direction

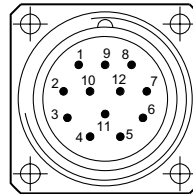


### Terminal assignment

#### 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



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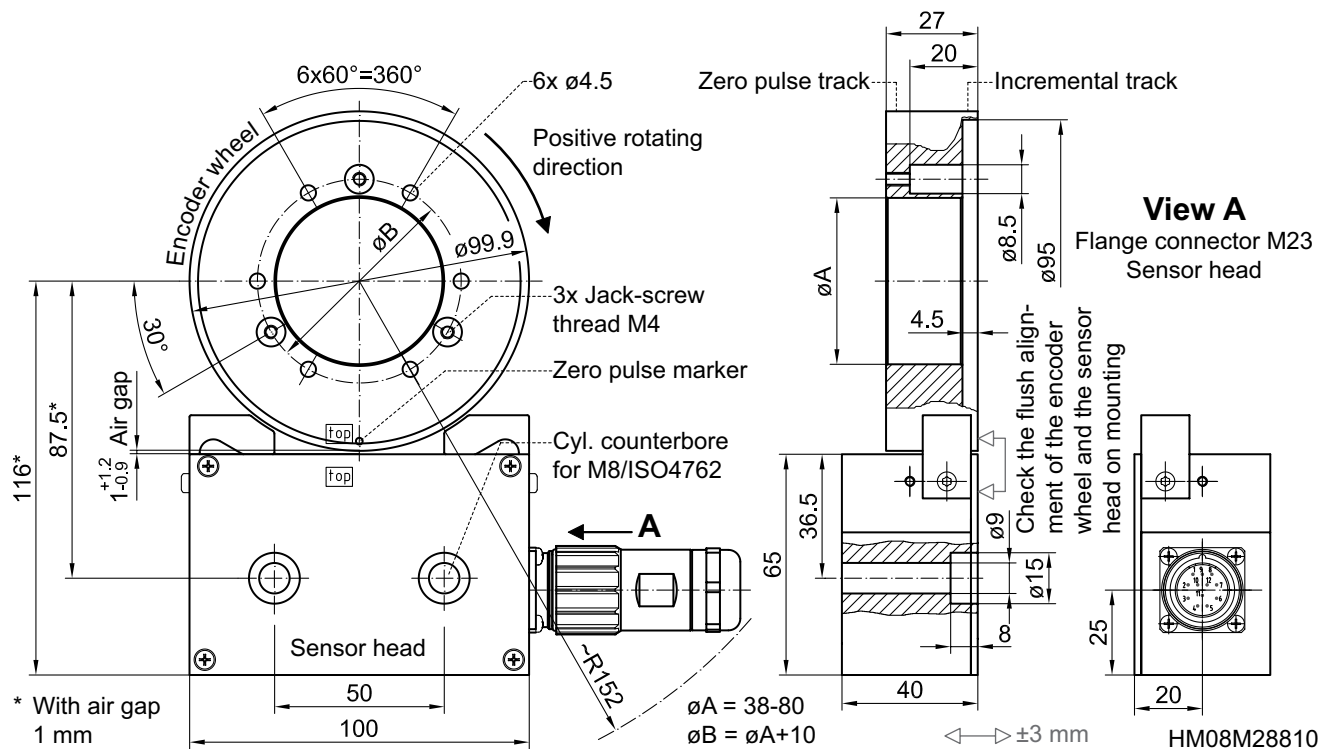
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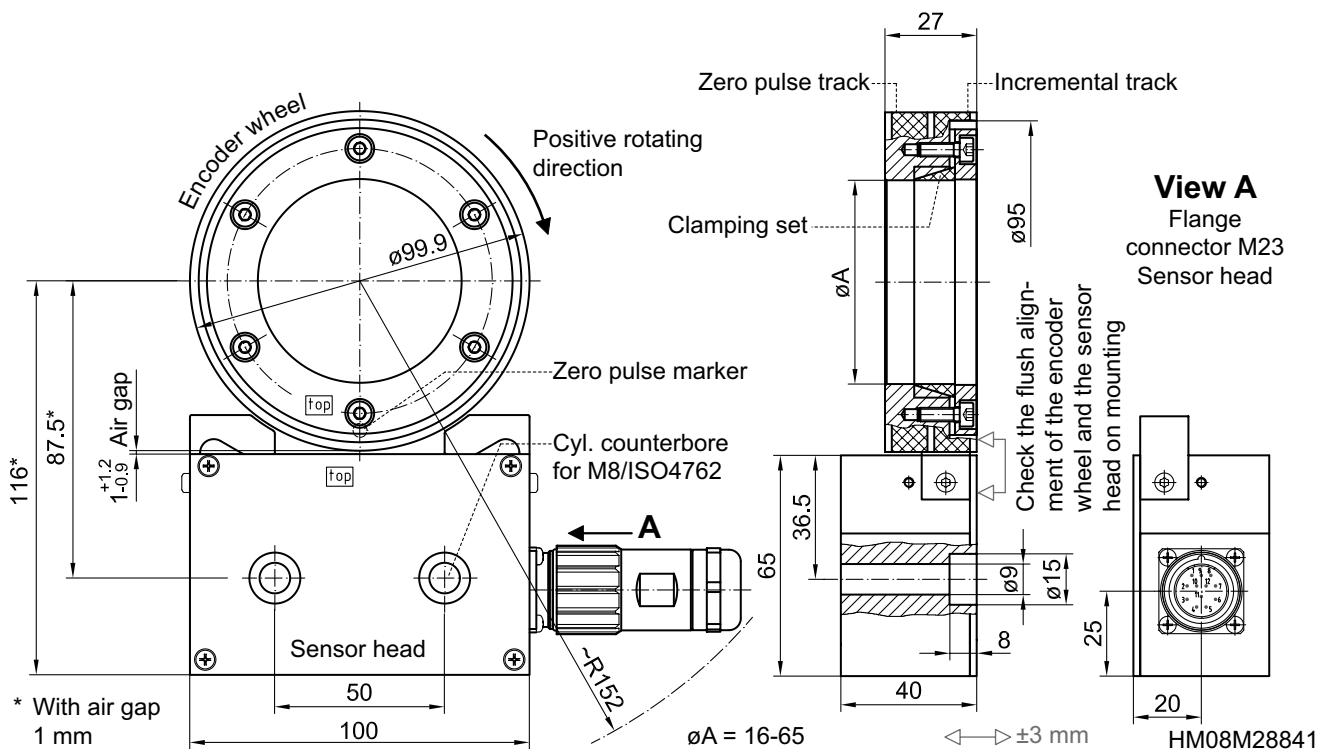
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## Dimensions

### Version for axial screw mounting



### Version for clamping set mounting



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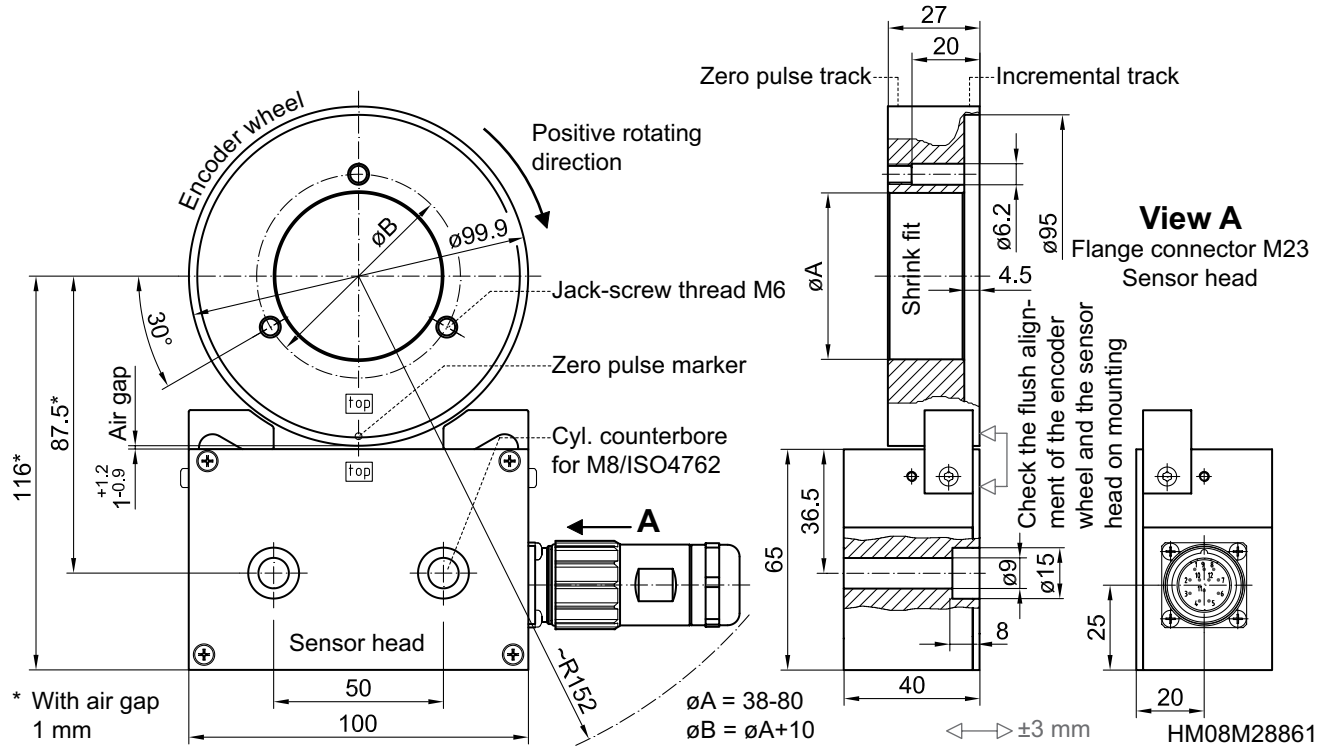
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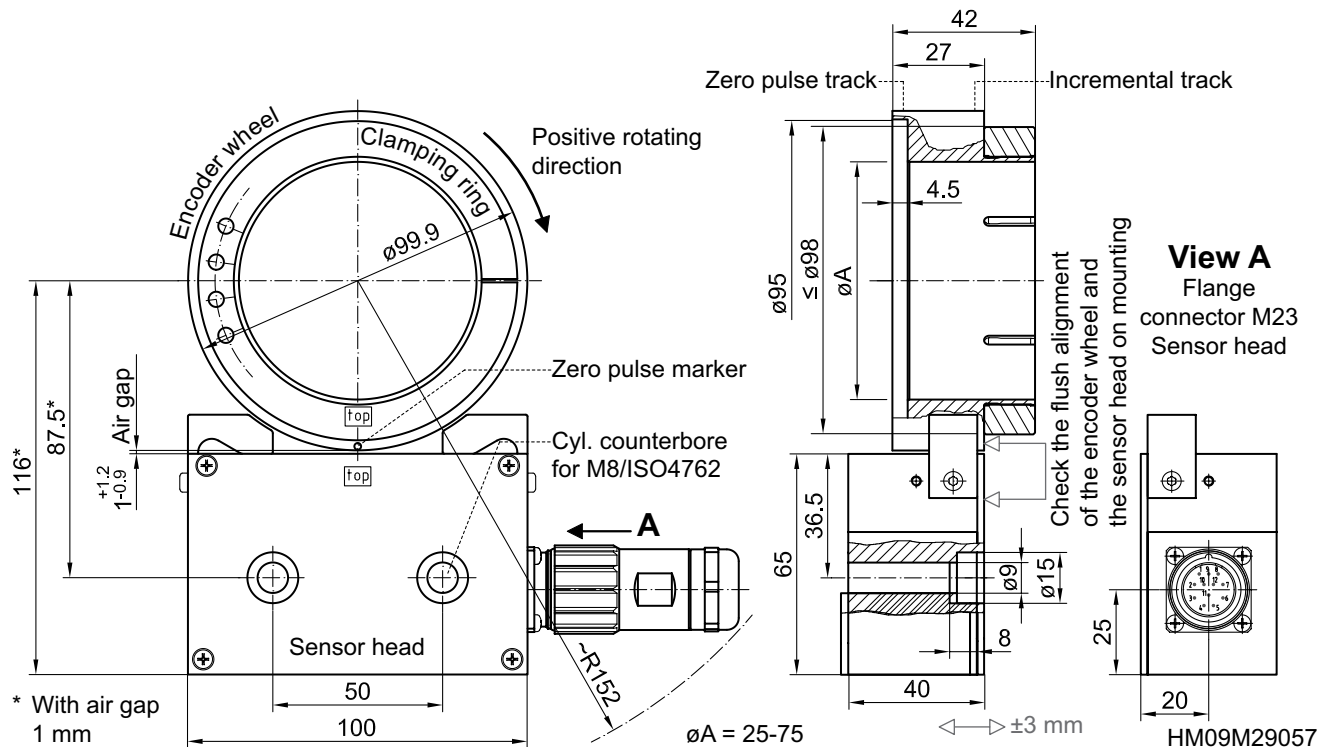
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### Dimensions

#### Version for shrink fit mounting



#### Version for clamping ring mounting



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