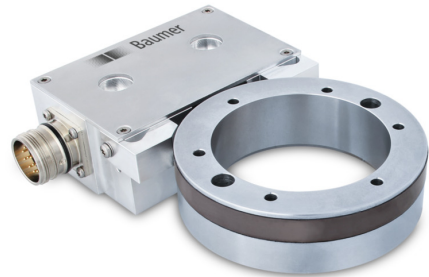


## MHGE 100

Magnetic sensing / Through hollow shaft max.  $\varnothing 80$  mm  
64...4096 pulses or 64 sinewave cycles per turn

### Overview

- 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



### Technical data

#### Technical data - electrical ratings

Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL approval / E217823 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	$90^\circ \pm 10^\circ$
Duty cycle	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 revolution	64
Phase shift	$90^\circ \pm 5^\circ$
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Magnetic

#### Technical data - electrical ratings (SinCos)

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

#### Technical data - mechanical design

Sensor head	Standard signal processing
Size (flange)	$\varnothing 99,9$ mm
Shaft type	$\varnothing 16...80$ mm (through hollow shaft)
Axial tolerance	$\pm 3$ mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Protection EN 60529	IP 67 (head) IP 68 (wheel)
Operating speed	$\leq 8000$ rpm
Material	Housing sensing head: aluminium alloy Wheel: stainless steel (1.4104, option DNV: 1.4313)
Operating temperature	$-40...+100^\circ\text{C}$
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 Terminal box

### Optional

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

## MHGE 100

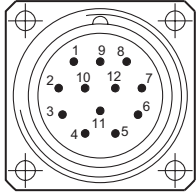
Magnetic sensing / Through hollow shaft max.  $\varnothing 80$  mm

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### Terminal assignment

#### View A (see dimension)

Assignment flange connector

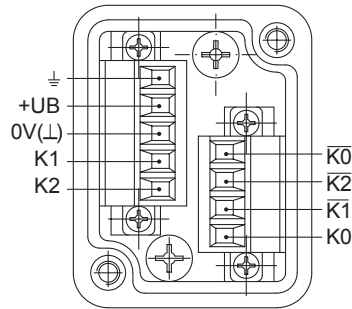


Flange connector M23,  
male, 12-pin,  
counter-clockwise (CCW)

Pin	Assignment
1	B-
2	dnu
3	R+
4	R-
5	A+
6	A-
7	dnu
8	B+
9	dnu
10	0V ( $\perp$ )
11	dnu
12	+UB

#### View B (see dimension)

Connecting terminal terminal box



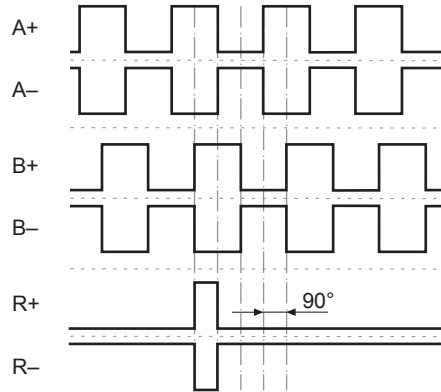
### Terminal significance

+UB	Voltage supply
0V ( $\perp$ )	Ground
$\perp$	Earth ground (housing)
A+, K1	Output signal channel 1
A-, $\overline{K1}$	Output signal channel 1 inverted
B+, K2	Output signal channel 2 (offset by 90° to channel 1)
B-, $\overline{K2}$	Output signal channel 2 inverted
R+, K0	Zero pulse (reference signal)
R-, $\overline{K0}$	Zero pulse inverted
dnu	Do not use

### Output signals

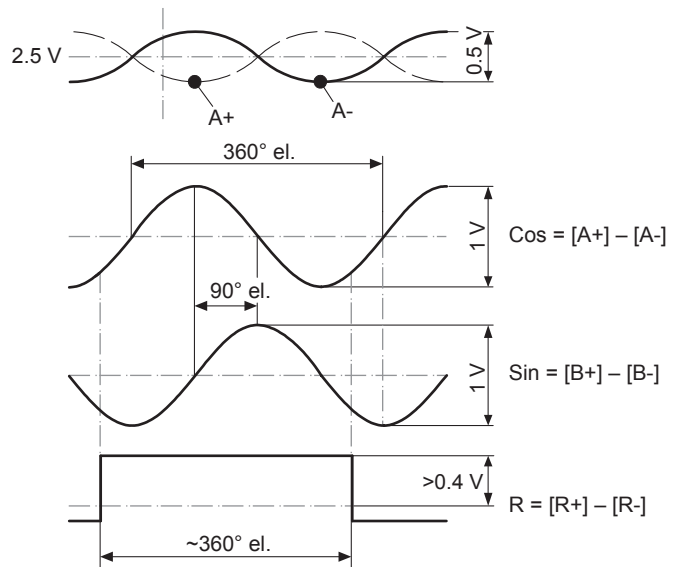
#### HTL/TTL

At positive rotating direction (see dimension)



#### SinCos

At positive rotating direction (see dimension)

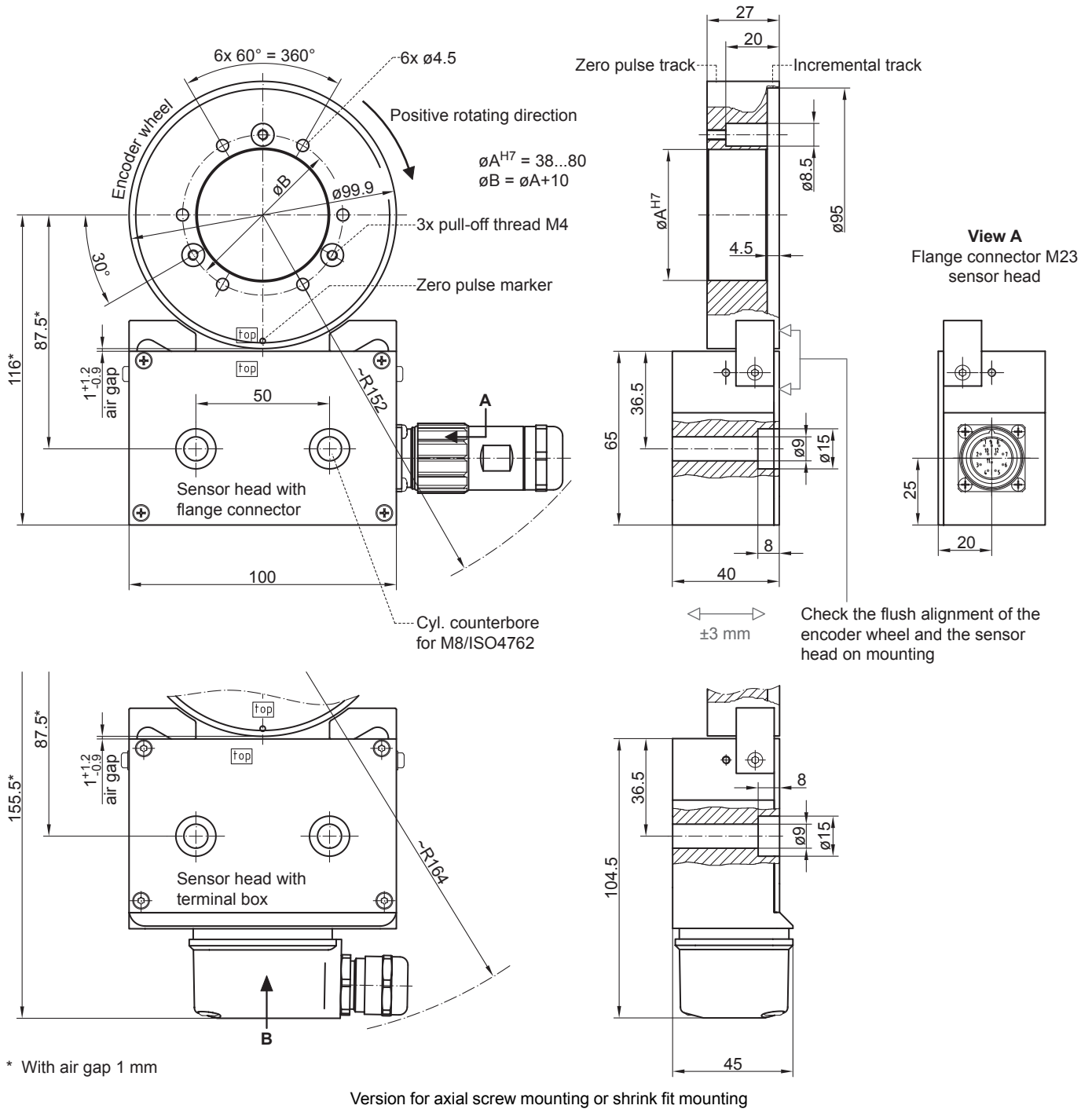


## MHGE 100

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### Dimensions

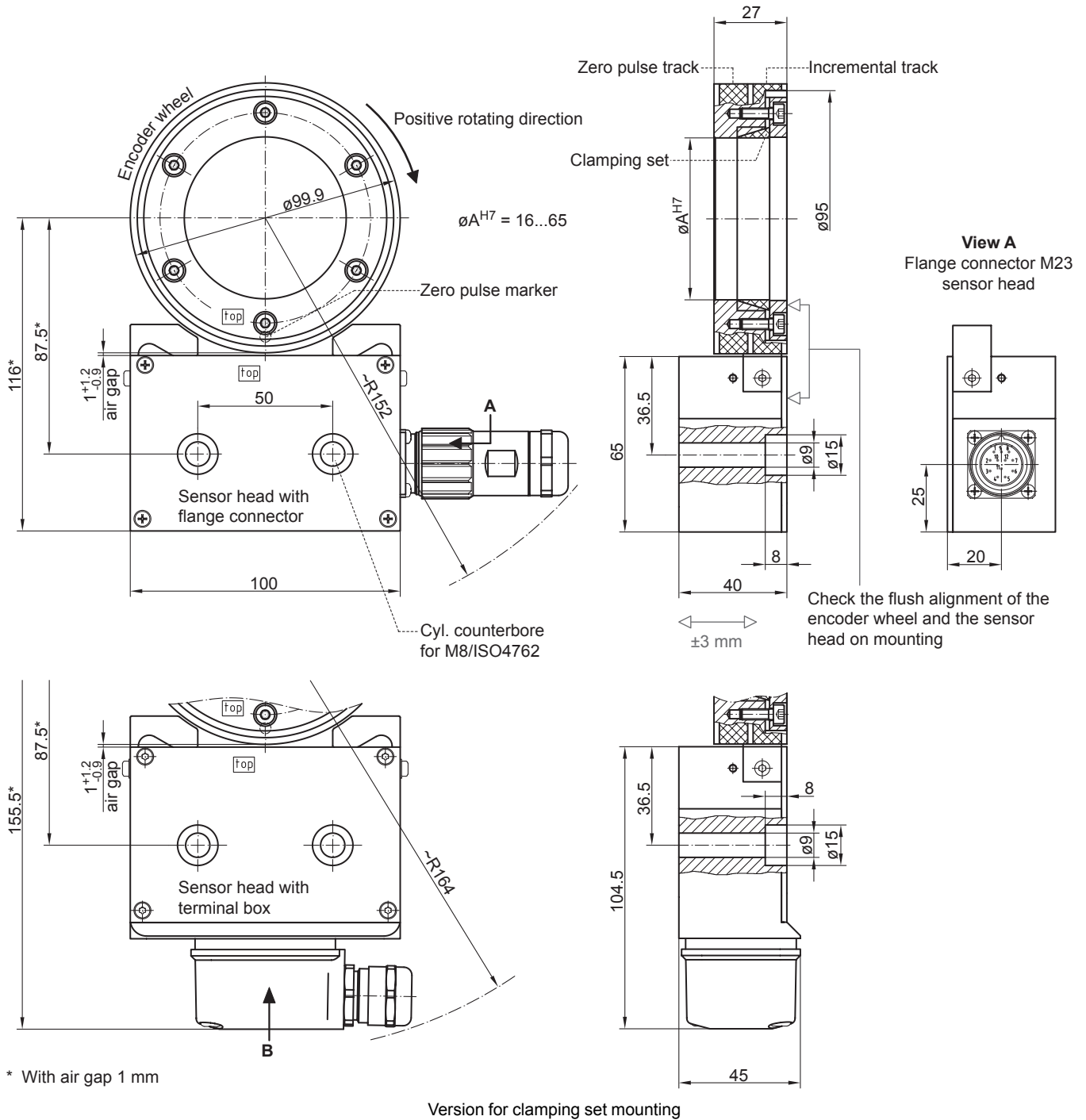


## MHGE 100

Magnetic sensing / Through hollow shaft max.  $\varnothing 80$  mm

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

### Dimensions

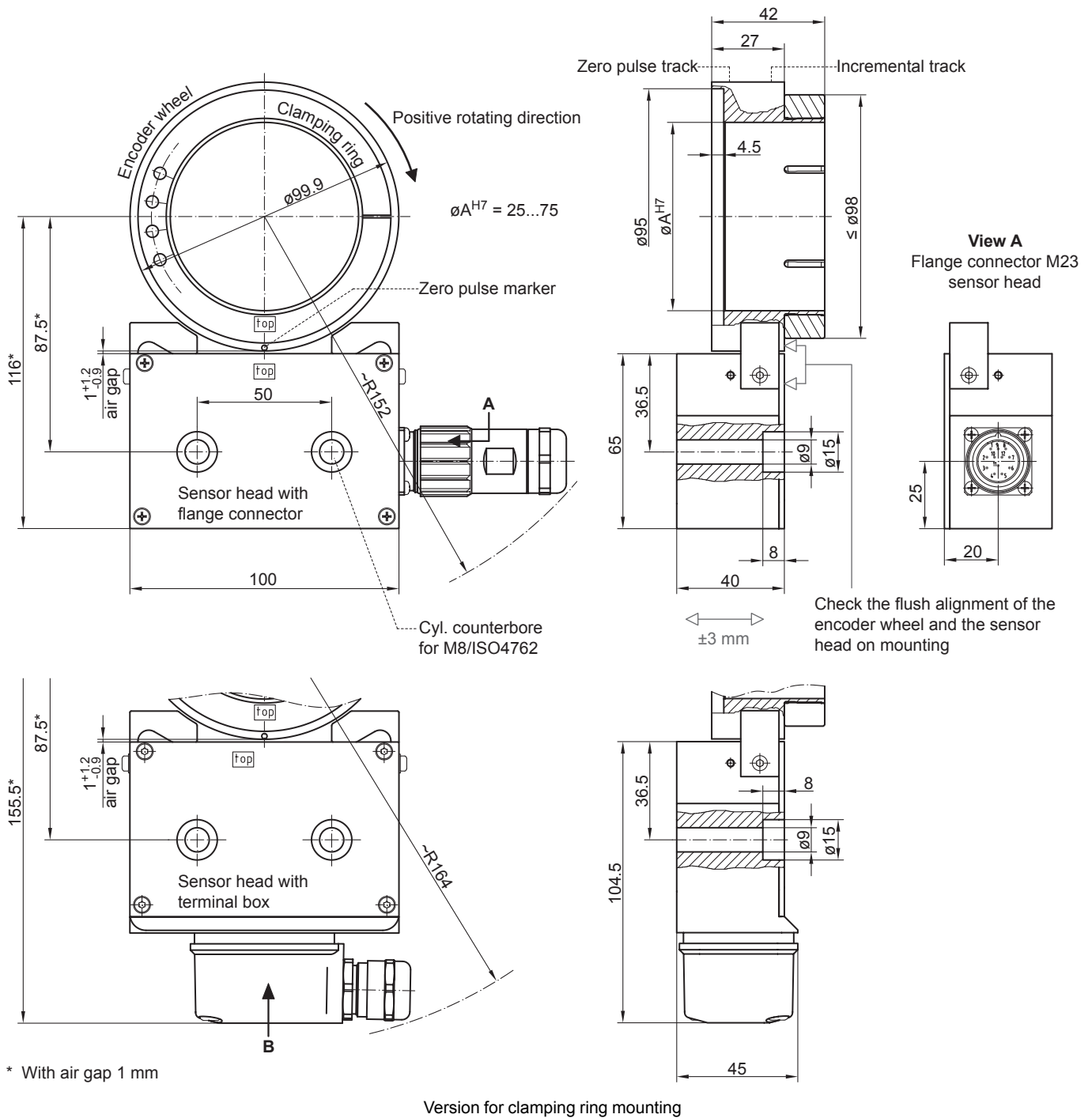


## MHGE 100

Magnetic sensing / Through hollow shaft max.  $\varnothing 80$  mm

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

### Dimensions



\* With air gap 1 mm

## MHGE 100

Magnetic sensing / Through hollow shaft max. ø80 mm  
 64...4096 pulses or 64 sinewave cycles per turn

### Ordering reference

	MHGE100	#	5	####	###	N	#####	#
<b>Product</b>								
Encoder without bearings - incremental	MHGE100							
<b>Bandaging</b>								
Encoder wheel standard bandage		B						
Encoder wheel with triple-bandage		T						
<b>Pole width</b>								
1 pole = 5 mm			5					
<b>Mounting type / hollow shaft (ø mm)</b>								
Screw or shrink fit mounting / ø38 mm				G38				
Screw or shrink fit mounting / ø45 mm				G45				
Screw or shrink fit mounting / ø50 mm				G50				
Screw or shrink fit mounting / ø55 mm				G55				
Screw or shrink fit mounting / ø60 mm				G60				
Screw or shrink fit mounting / ø65 mm				G65				
Screw or shrink fit mounting / ø70 mm				G70				
Screw or shrink fit mounting / ø75 mm				G75				
Screw or shrink fit mounting / ø80 mm				G80				
Clamping set mounting / ø16 mm				Z16				
Clamping set mounting / ø20 mm				Z20				
Clamping set mounting / ø22 mm				Z22				
Clamping set mounting / ø25 mm				Z25				
Clamping set mounting / ø28 mm				Z28				
Clamping set mounting / ø32 mm				Z32				
Clamping set mounting / ø35 mm				Z35				
Clamping set mounting / ø38 mm				Z38				
Clamping set mounting / ø40 mm				Z40				
Clamping set mounting / ø42 mm				Z42				
Clamping set mounting / ø45 mm				Z45				
Clamping set mounting / ø48 mm				Z48				
Clamping set mounting / ø50 mm				Z50				
Clamping set mounting / ø55 mm				Z55				
Clamping set mounting / ø60 mm				Z60				
Clamping set mounting / ø63 mm				Z63				
Clamping set mounting / ø65 mm				Z65				
Clamping set mounting stainless / ø16 mm				Y16				
Clamping set mounting stainless / ø20 mm				Y20				
Clamping set mounting stainless / ø22 mm				Y22				
Clamping set mounting stainless / ø25 mm				Y25				
Clamping set mounting stainless / ø28 mm				Y28				
Clamping set mounting stainless / ø32 mm				Y32				
Clamping set mounting stainless / ø35 mm				Y35				
Clamping set mounting stainless / ø38 mm				Y38				
Clamping set mounting stainless / ø40 mm				Y40				
Clamping set mounting stainless / ø42 mm				Y42				
Clamping set mounting stainless / ø45 mm				Y45				
Clamping set mounting stainless / ø48 mm				Y48				
Clamping set mounting stainless / ø50 mm				Y50				
Clamping set mounting stainless / ø55 mm				Y55				
Clamping set mounting stainless / ø60 mm				Y60				
Clamping set mounting stainless / ø63 mm				Y63				
Clamping set mounting stainless / ø65 mm				Y65				
Clamping ring mounting / ø25 mm				K25				
Clamping ring mounting / ø30 mm				K30				

## MHGE 100

Magnetic sensing / Through hollow shaft max. ø80 mm  
 64...4096 pulses or 64 sinewave cycles per turn

### Ordering reference

	MHGE100	#	5	####	###	N	#####	#
Clamping ring mounting / ø32 mm				K32				
Clamping ring mounting / ø38 mm				K38				
Clamping ring mounting / ø40 mm				K40				
Clamping ring mounting / ø45 mm				K45				
Clamping ring mounting / ø48 mm				K48				
Clamping ring mounting / ø50 mm				K50				
Clamping ring mounting / ø55 mm				K55				
Clamping ring mounting / ø56 mm				K56				
Clamping ring mounting / ø60 mm				K60				
Clamping ring mounting / ø65 mm				K65				
Clamping ring mounting / ø70 mm				K70				
Clamping ring mounting / ø75 mm				K75				
<b>Voltage supply / output stage</b>								
5 VDC / SinCos						S		
4.75...30 VDC / TTL						R		
5 VDC ±5 % / TTL						T		
10...30 VDC / HTL						H		
5...30 VDC / 5 VDC = TTL, 10...30 VDC = HTL universal						U		
<b>Zero pulse</b>								
With zero pulse							N	
<b>Pulse number/sinewave cycles</b>								
64								64
128 <sup>(1)</sup>								128
256 <sup>(1)</sup>								256
512 <sup>(1)</sup>								512
1024 <sup>(1)</sup>								1024
2048 <sup>(1)</sup>								2048
4096 <sup>(1)</sup>								4096
<b>Connection</b>								
1x flange connector M23, tangential 12-pin, male, CCW								C
1x terminal box with cable gland M20, radial								B

(1) No SinCos output possible