

MHGE 200

Magnetic sensing / Through hollow shaft max. $\varnothing 180$ mm
128...8192 pulses or 128 sinewave cycles per turn

Overview

- Robust and wearless
- High protection through fully encapsulated electronics
- Large tolerances: axial ± 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	≤ 70 mA
Pulses per revolution	128 ... 8192
Phase shift	$90^\circ \pm 10^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Magnetic
Output frequency	≤ 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	≤ 70 mA
Sinewave cycles per revolution	128
Phase shift	$90^\circ \pm 5^\circ$
Reference signal	Zero pulse, width 90°
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	≤ 20 mV
Harmonics typ.	-40 dB
DC offset	≤ 20 mV

Technical data - mechanical design

Sensor head	Standard signal processing
Size (flange)	$\varnothing 201.7$ mm
Shaft type	$\varnothing 50...180$ mm (through hollow shaft)
Axial tolerance	± 3 mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Protection EN 60529	IP 67 (head) IP 68 (wheel)
Operating speed	≤ 4000 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	$\pm 150''$
Connection	Flange connector M23, 12-pin Terminal box

Optional

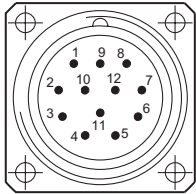
- DNV approval on request
- Redundant sensing head on request
- Increased operating speed through triple-bandage
- Offshore version

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Terminal assignment

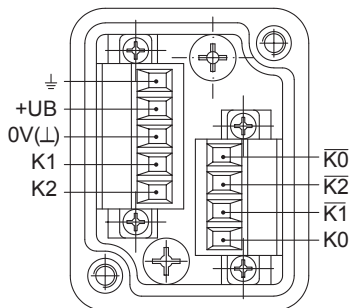
View A (see dimension)
Assignment flange connector



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



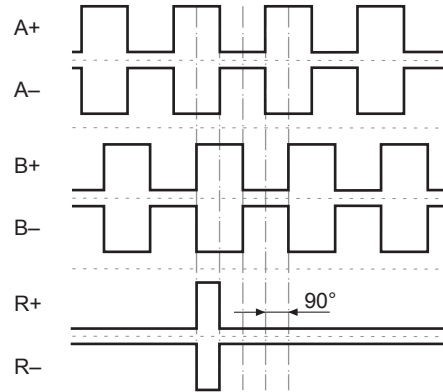
Terminal significance

+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

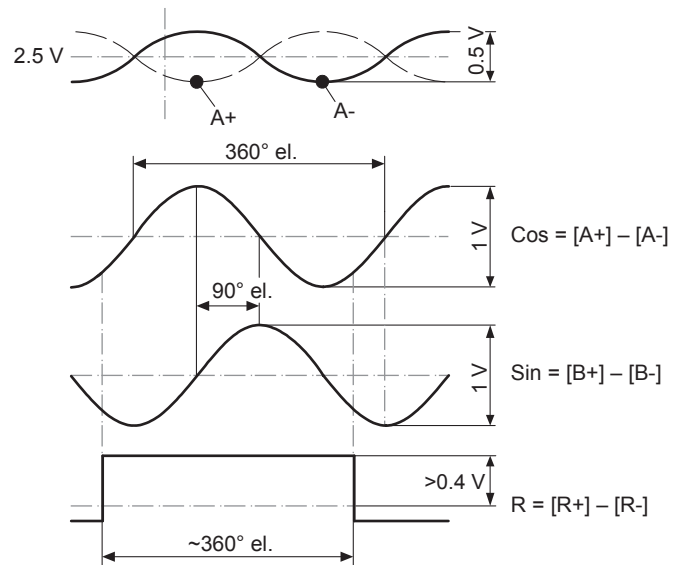
HTL/TTL

At positive rotating direction (see dimension)

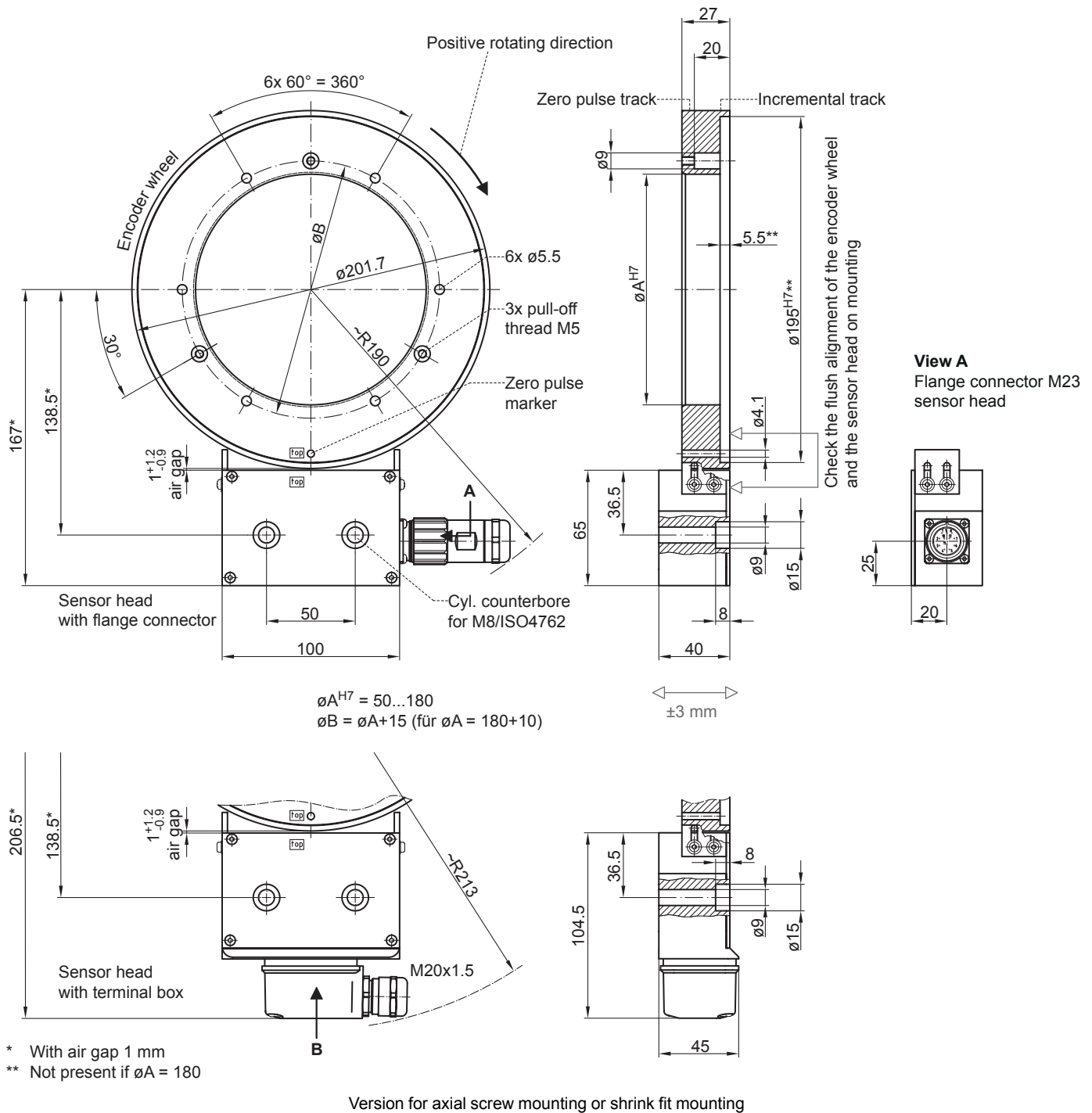


SinCos

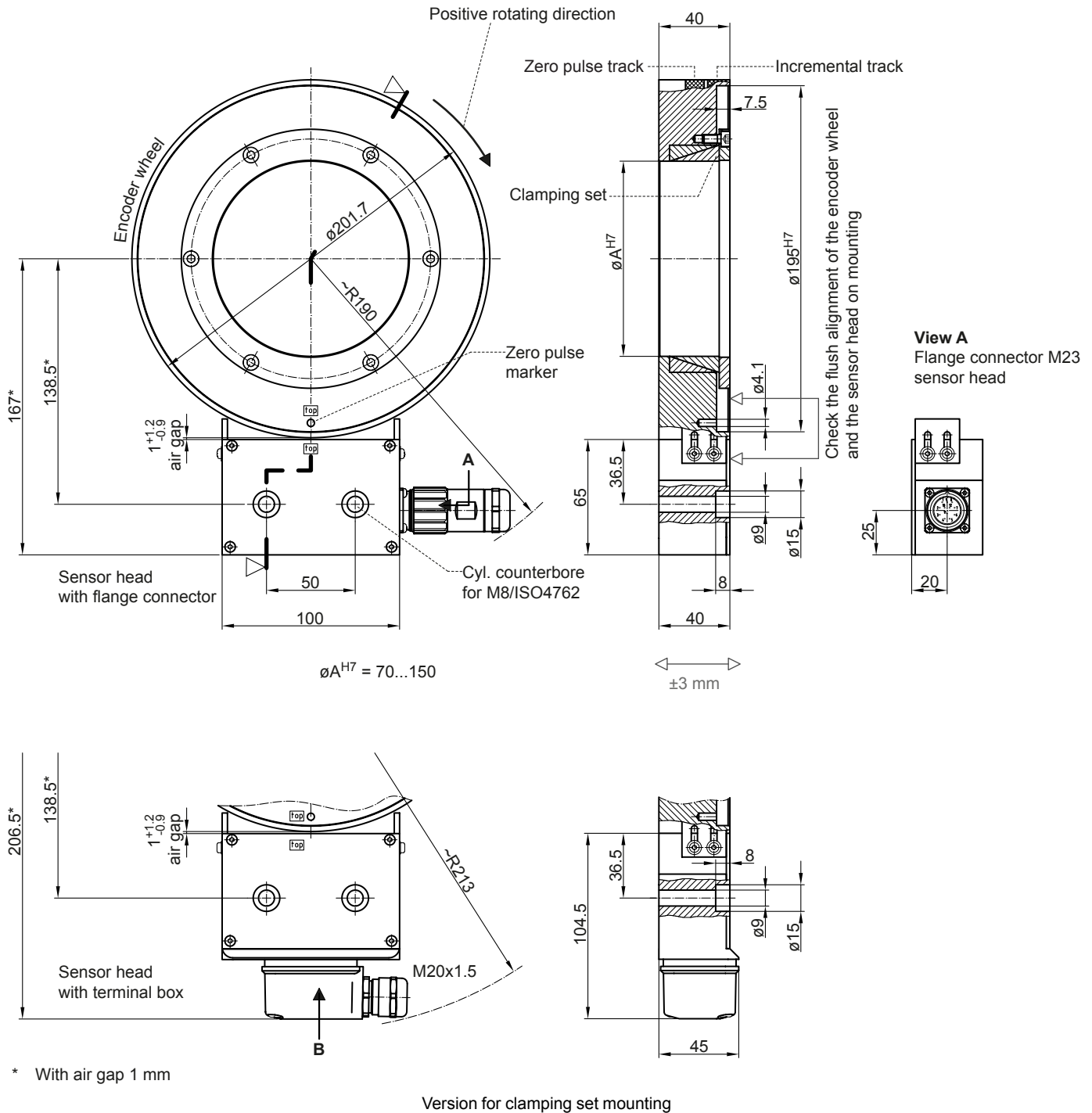
At positive rotating direction (see dimension)



Dimensions



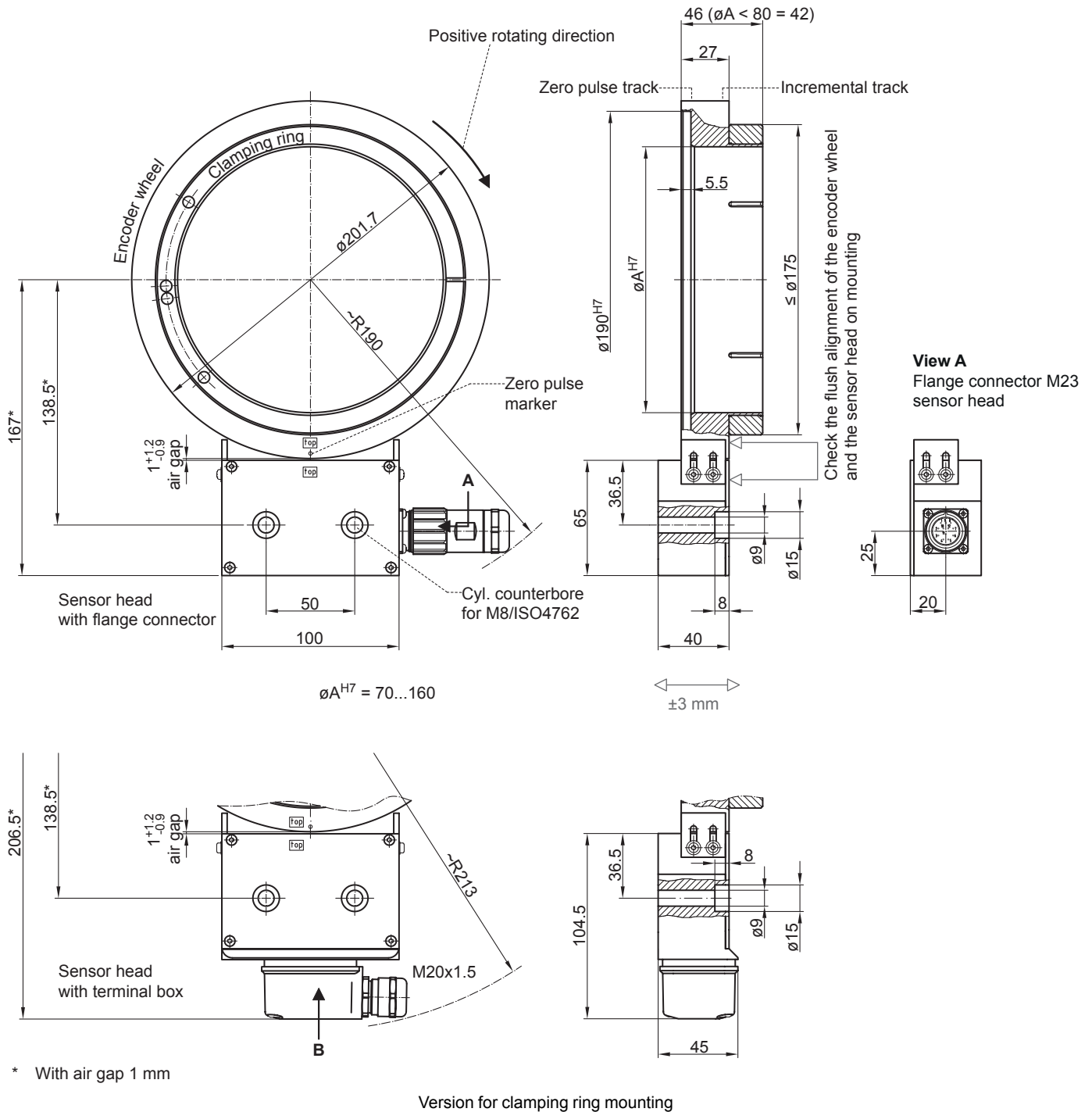
Dimensions



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Dimensions



MHGE 200

Magnetic sensing / Through hollow shaft max. ø180 mm
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Ordering reference

	MHGE200	#	5	####	###	N	#####	#
Product								
Encoder without bearings - incremental	MHGE200							
Bandaging								
Encoder wheel standard bandage		B						
Encoder wheel with triple-bandage		T						
Pole width								
1 pole = 5 mm			5					
Mounting type / hollow shaft (ø mm)								
Screw or shrink fit mounting / ø50 mm				G50				
Screw or shrink fit mounting / ø75 mm				G75				
Screw or shrink fit mounting / ø80 mm				G80				
Screw or shrink fit mounting / ø85 mm				G85				
Screw or shrink fit mounting / ø90 mm				G90				
Screw or shrink fit mounting / ø95 mm				G95				
Screw or shrink fit mounting / ø100 mm				G100				
Screw or shrink fit mounting / ø110 mm				G110				
Screw or shrink fit mounting / ø115 mm				G115				
Screw or shrink fit mounting / ø120 mm				G120				
Screw or shrink fit mounting / ø130 mm				G130				
Screw or shrink fit mounting / ø150 mm				G150				
Screw or shrink fit mounting / ø160 mm				G160				
Screw or shrink fit mounting / ø170 mm				G170				
Screw or shrink fit mounting / ø180 mm				G180				
Clamping set mounting / ø70 mm				Z70				
Clamping set mounting / ø75 mm				Z75				
Clamping set mounting / ø80 mm				Z80				
Clamping set mounting / ø85 mm				Z85				
Clamping set mounting / ø90 mm				Z90				
Clamping set mounting / ø95 mm				Z95				
Clamping set mounting / ø100 mm				Z100				
Clamping set mounting / ø110 mm				Z110				
Clamping set mounting / ø120 mm				Z120				
Clamping set mounting / ø130 mm				Z130				
Clamping set mounting / ø140 mm				Z140				
Clamping set mounting / ø150 mm				Z150				
Clamping set mounting stainless / ø70 mm				Y70				
Clamping set mounting stainless / ø75 mm				Y75				
Clamping set mounting stainless / ø80 mm				Y80				
Clamping set mounting stainless / ø85 mm				Y85				
Clamping set mounting stainless / ø90 mm				Y90				
Clamping set mounting stainless / ø95 mm				Y95				
Clamping set mounting stainless / ø100 mm				Y100				
Clamping set mounting stainless / ø110 mm				Y110				
Clamping set mounting stainless / ø120 mm				Y120				
Clamping set mounting stainless / ø130 mm				Y130				
Clamping set mounting stainless / ø140 mm				Y140				
Clamping set mounting stainless / ø150 mm				Y150				
Clamping ring mounting / ø70 mm				K70				
Clamping ring mounting / ø75 mm				K75				
Clamping ring mounting / ø80 mm				K80				
Clamping ring mounting / ø85 mm				K85				
Clamping ring mounting / ø90 mm				K90				
Clamping ring mounting / ø95 mm				K95				

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MHGE200 # 5 #### ### N ##### #

Clamping ring mounting / ø100 mm
 Clamping ring mounting / ø105 mm
 Clamping ring mounting / ø110 mm
 Clamping ring mounting / ø115 mm
 Clamping ring mounting / ø120 mm
 Clamping ring mounting / ø130 mm
 Clamping ring mounting / ø140 mm
 Clamping ring mounting / ø150 mm
 Clamping ring mounting / ø160 mm

K100
 K105
 K110
 K115
 K120
 K130
 K140
 K150
 K160

Voltage supply / output stage

5 VDC / SinCos
 4.75...30 VDC / TTL
 5 VDC ±5 % / TTL
 10...30 VDC / HTL
 5...30 VDC / 5 VDC = TTL, 10...30 VDC = HTL universal

S
 R
 T
 H
 U

Zero pulse

With zero pulse

N

Pulse number/sinewave cycles

128	128
256 ⁽¹⁾	256
512 ⁽¹⁾	512
1024 ⁽¹⁾	1024
2048 ⁽¹⁾	2048
4096 ⁽¹⁾	4096
8192 ⁽¹⁾	8192

Connection

1x terminal box with cable gland M20, radial
 1x flange connector M23, tangential 12-pin, male, CCW

B
 C

(1) No SinCos output possible