

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 \pm 3 mm, radial max. 2.2 mm
- Very compact dimensions
- Simple mounting, easy adaptation
- Magnetic rotor included in delivery



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	128 ... 8192
Phase shift	$90^\circ \pm 10^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90°
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	128
Phase shift	$90^\circ \pm 5^\circ$
Reference signal	Zero pulse, width 90°
Sensing method	Magnetic

Optional

- Redundant sensing head on request
- Increased operating speed through triple-bandage
- Variants with DNV approval for offshore use on request

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

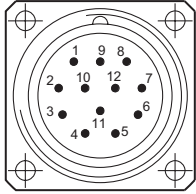
Sensor head	Standard signal processing
Size (flange)	\varnothing 201.7 mm
Shaft type	\varnothing 50...180 mm (through hollow shaft)
Axial tolerance	\pm 3 mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Protection EN 60529	IP 67
Operating speed	\leq 4000 rpm
Material	Housing sensing head: aluminium alloy Wheel: stainless steel 1.4104 (option DNV: 1.4313)
Operating temperature	-40...+100 °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

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Terminal assignment

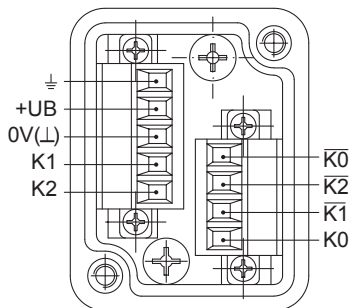
View A (see dimension)
Assignment flange connector



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



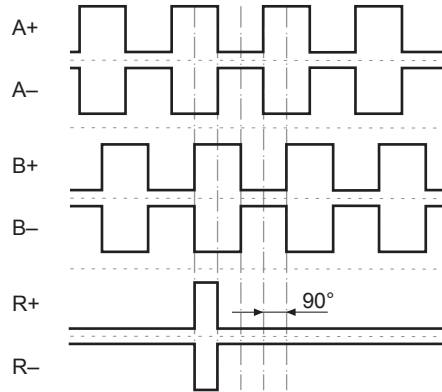
Terminal significance

+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

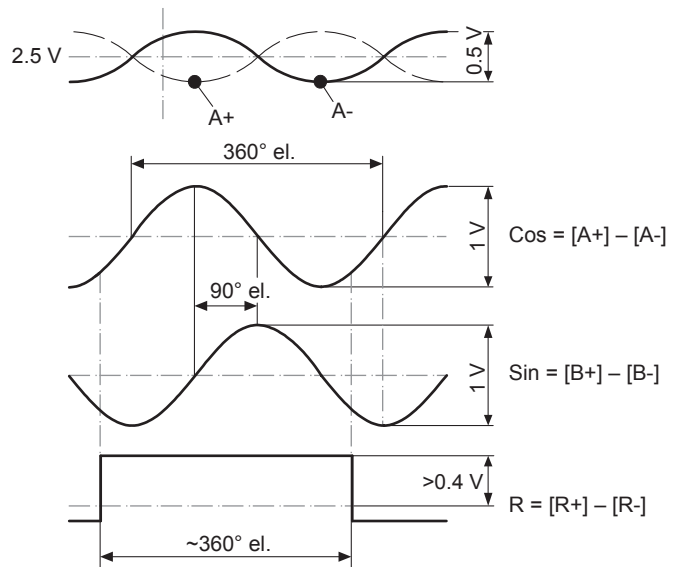
HTL/TTL

At positive rotating direction (see dimension)



SinCos

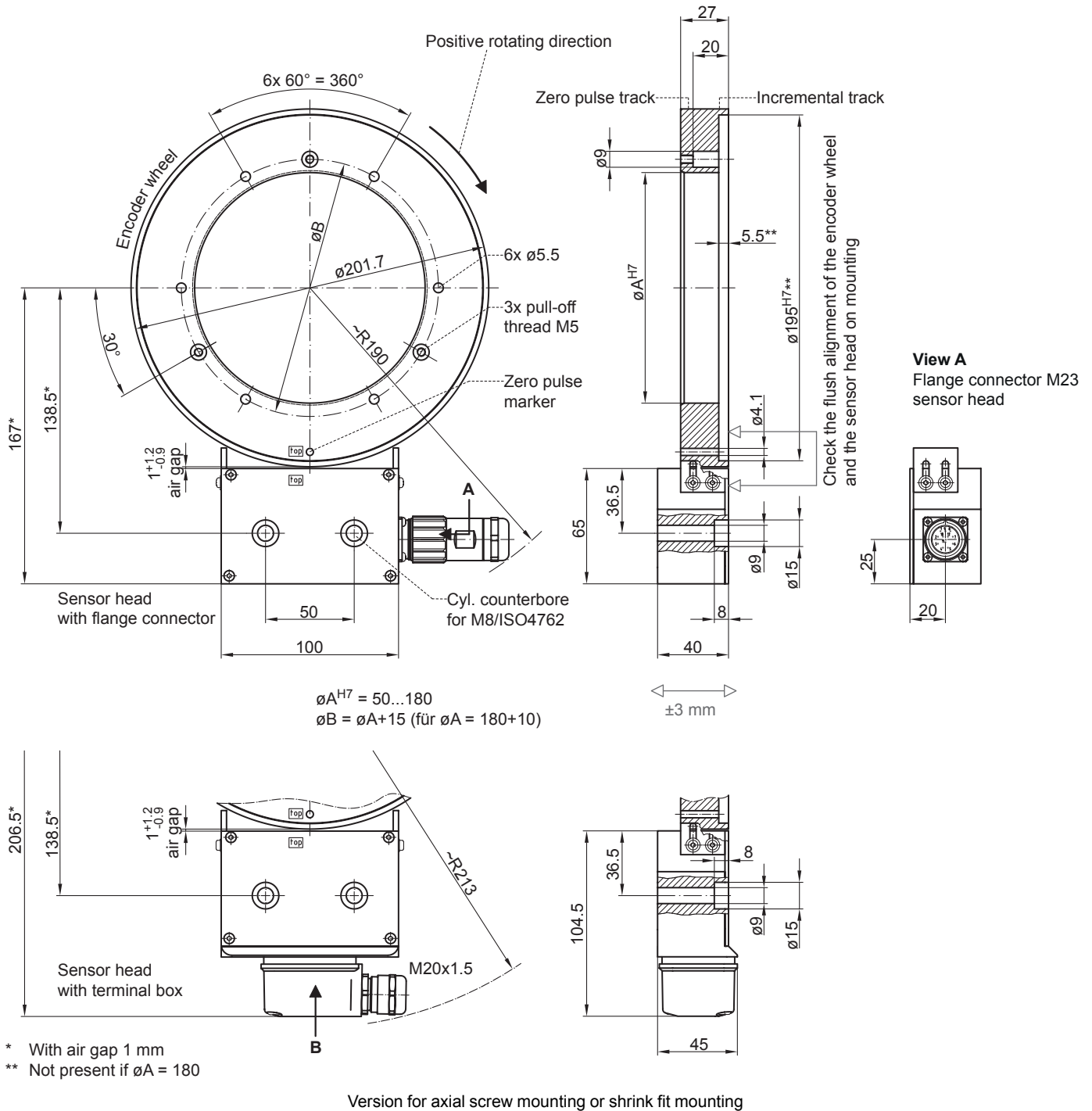
At positive rotating direction (see dimension)



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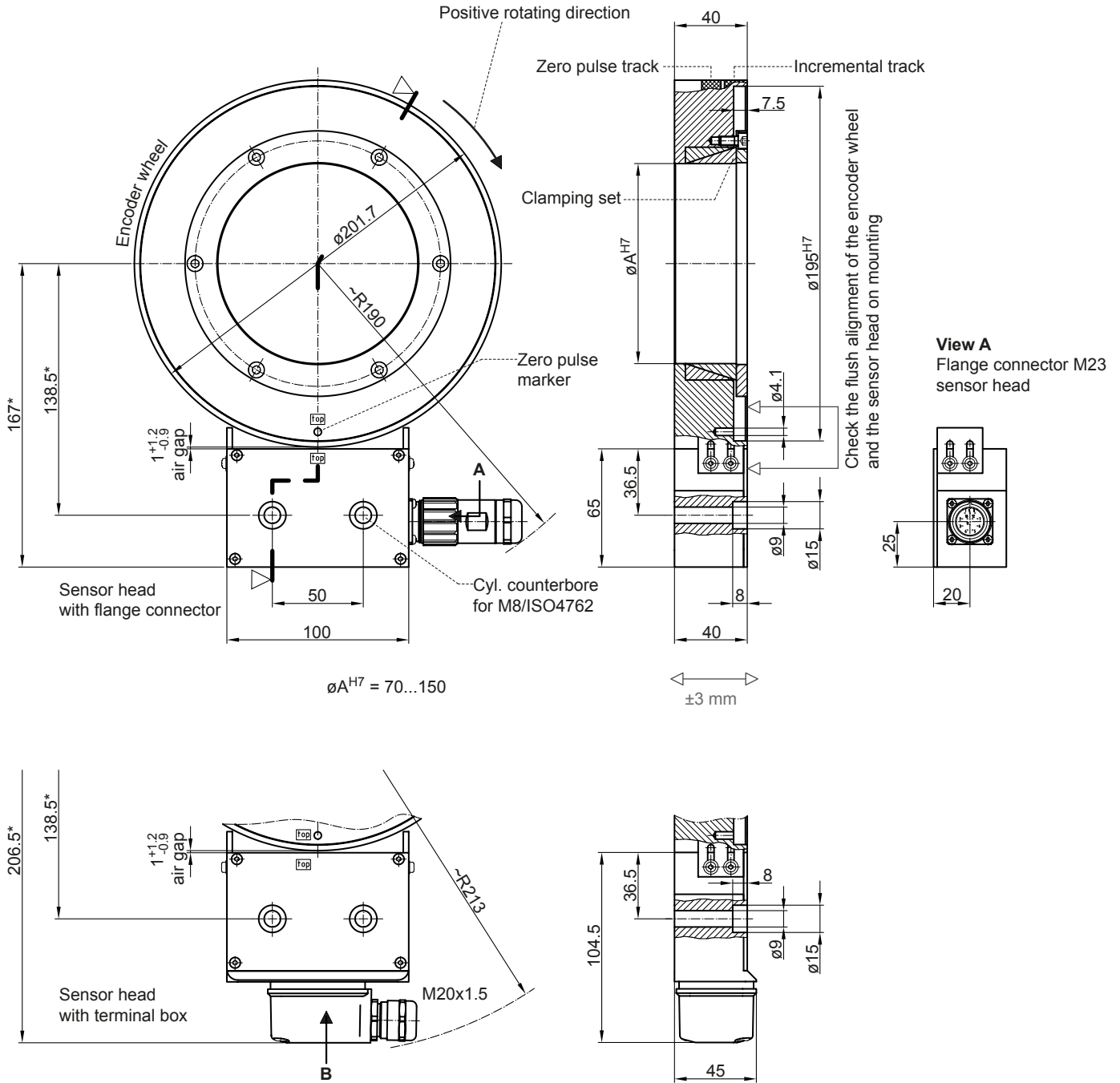
Dimensions



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Dimensions



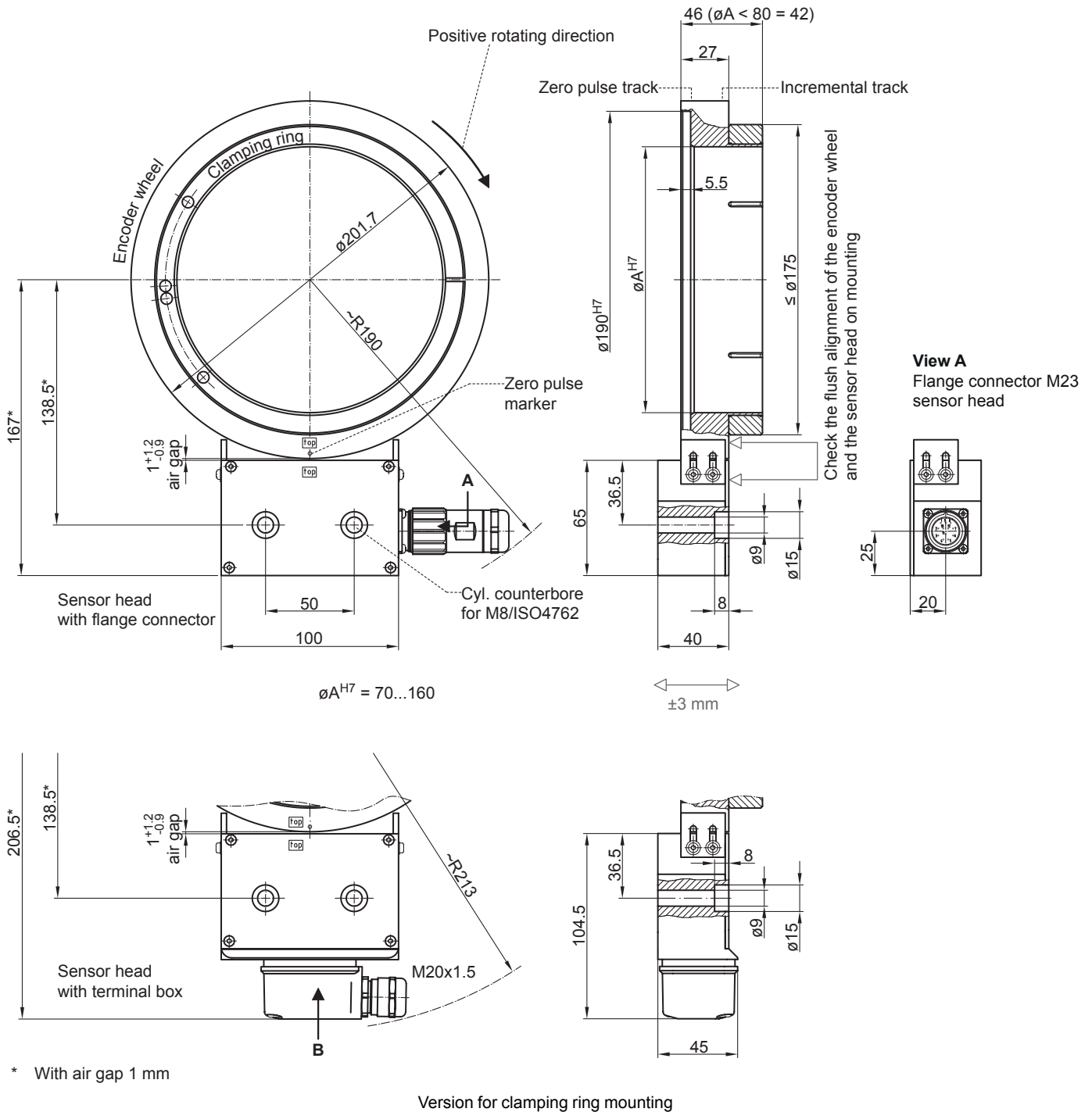
* With air gap 1 mm

Version for clamping set mounting

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Ordering reference

	MHGE200	#	5	####	###	N	#####	#
Product	MHGE200							
Encoder without bearings - incremental	MHGE200							
Bandaging								
Encoder wheel standard bandage								B
Encoder wheel with triple-bandage (optional)								T
Pole width								
1 pole = 5 mm								5
Mounting type / hollow shaft (\varnothing mm)⁽¹⁾								
Screw or shrink fit mounting / \varnothing 90 mm								G90
Screw or shrink fit mounting / \varnothing 110 mm								G110
Screw or shrink fit mounting / \varnothing 160 mm								G160
Screw or shrink fit mounting / \varnothing 180 mm								G180
Clamping set mounting / \varnothing 70 mm								Z70
Clamping set mounting / \varnothing 100 mm								Z100
Clamping set mounting / \varnothing 110 mm								Z110
Clamping set mounting / \varnothing 150 mm								Z150
Clamping ring mounting / \varnothing 70 mm								K70
Clamping ring mounting / \varnothing 80 mm								K80
Clamping ring mounting / \varnothing 95 mm								K95
Clamping ring mounting / \varnothing 110 mm								K110
Clamping ring mounting / \varnothing 130 mm								K130
Clamping ring mounting / \varnothing 150 mm								K150
Clamping ring mounting / \varnothing 160 mm								K160
Voltage supply / output stage⁽¹⁾								
5 VDC / SinCos								S
4.75...30 VDC / TTL								R
5...30 VDC / 5 VDC = TTL, 10...30 VDC = HTL universal								U
Zero pulse								
With zero pulse								N
Pulse number/sinewave cycles⁽¹⁾								
128 (SinCos output)								128
1024								1024
2048								2048
4096								4096
8192								8192
Connection								
1x terminal box with cable gland M20, radial								B
1x flange connector M23, tangential 12-pin, male, CCW								C

(1) Other versions on request