

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 ± 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	≤ 70 mA
Pulses per revolution	64 ... 4096
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	64
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	≤ 20 mV
Harmonics typ.	-40 dB
DC offset	≤ 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	± 3 mm (wheel/head)
Radial tolerance	0.1...2.2 mm (wheel/head)
Protection EN 60529	IP 67
Operating speed	≤ 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

MHGE 100

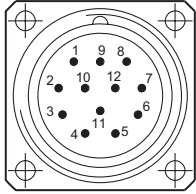
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Terminal assignment

View A (see dimension)

Assignment flange connector

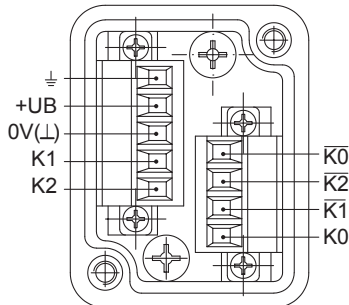


Flange connector M23, male, 12-pin, counter-clockwise (CCW)

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



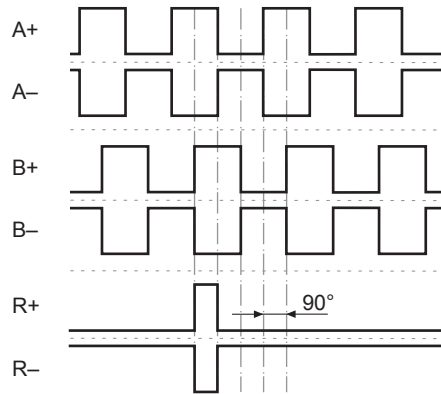
Terminal significance

+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

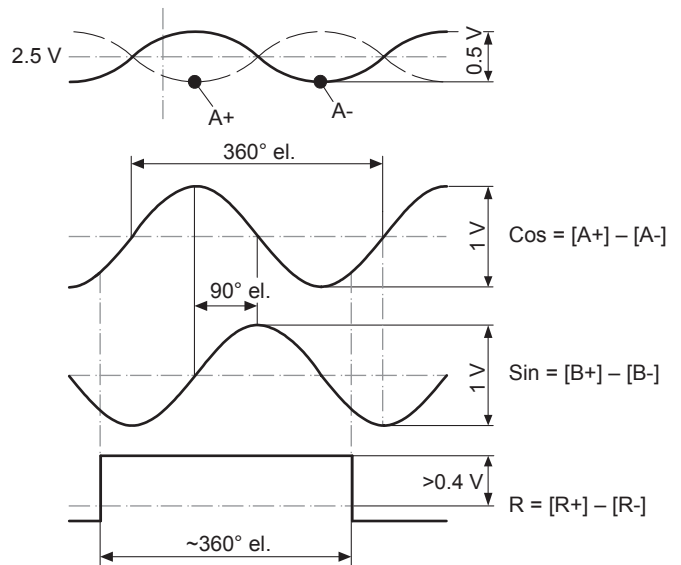
HTL/TTL

At positive rotating direction (see dimension)



SinCos

At positive rotating direction (see dimension)

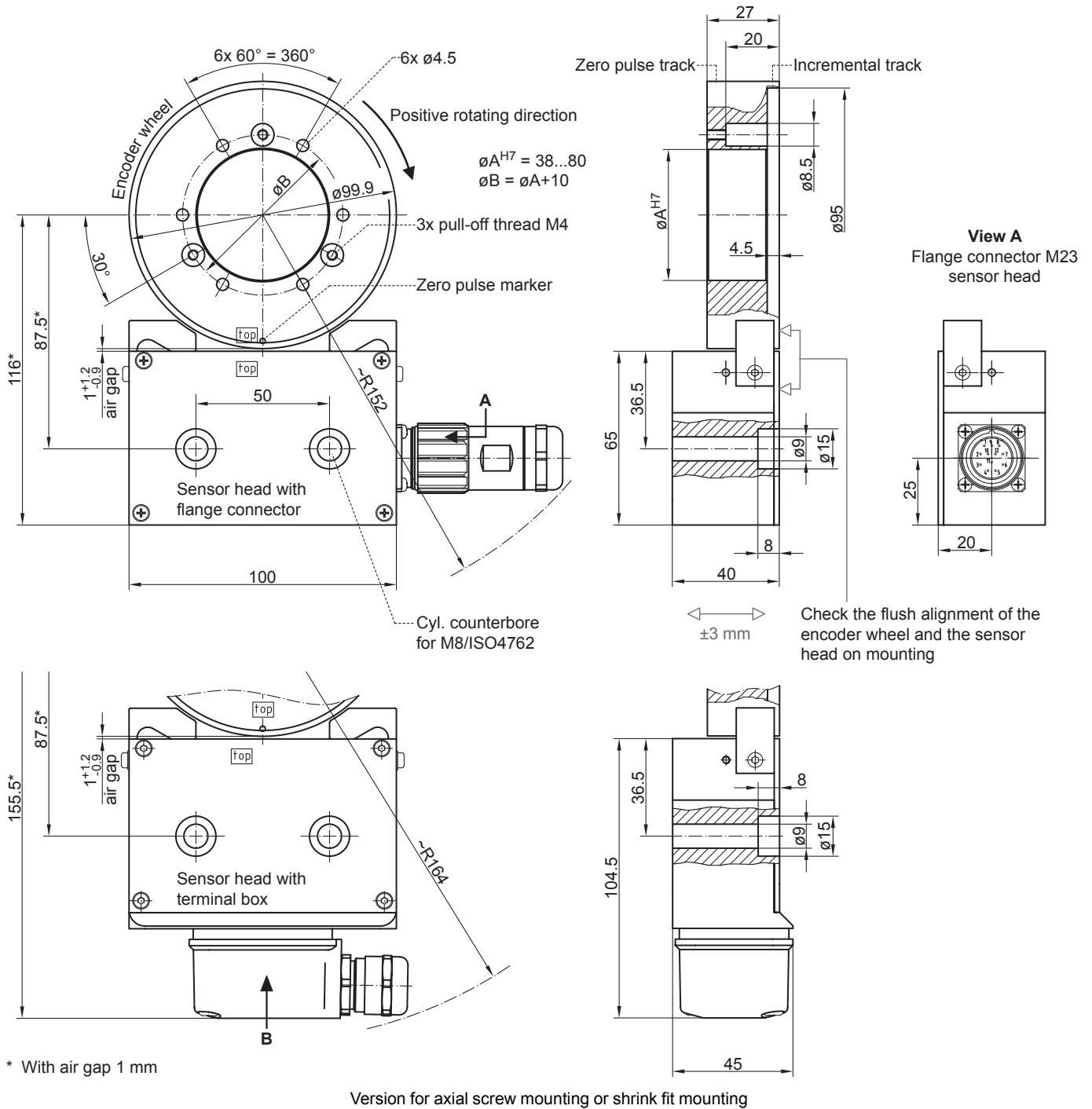


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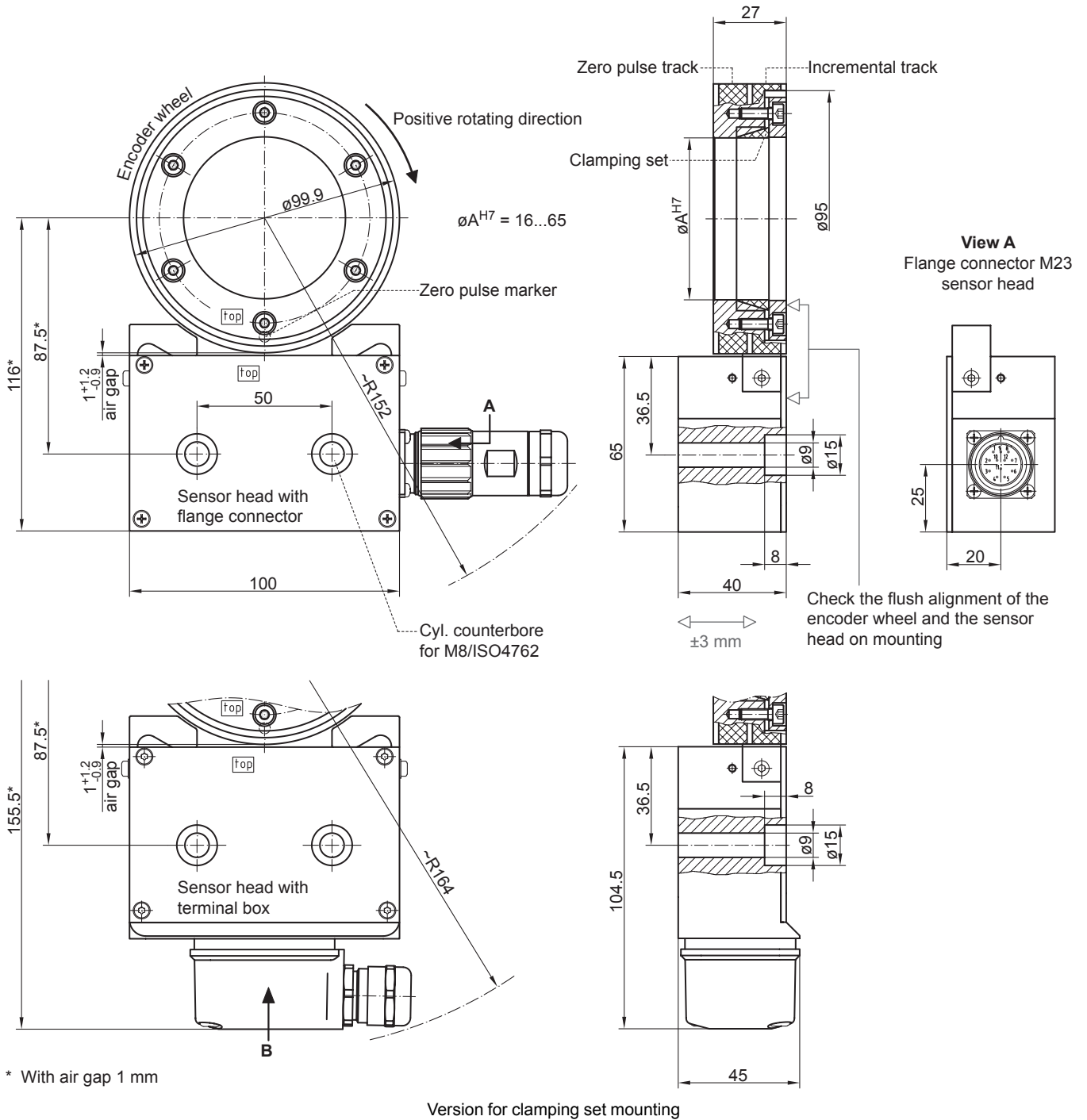
Dimensions



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Dimensions

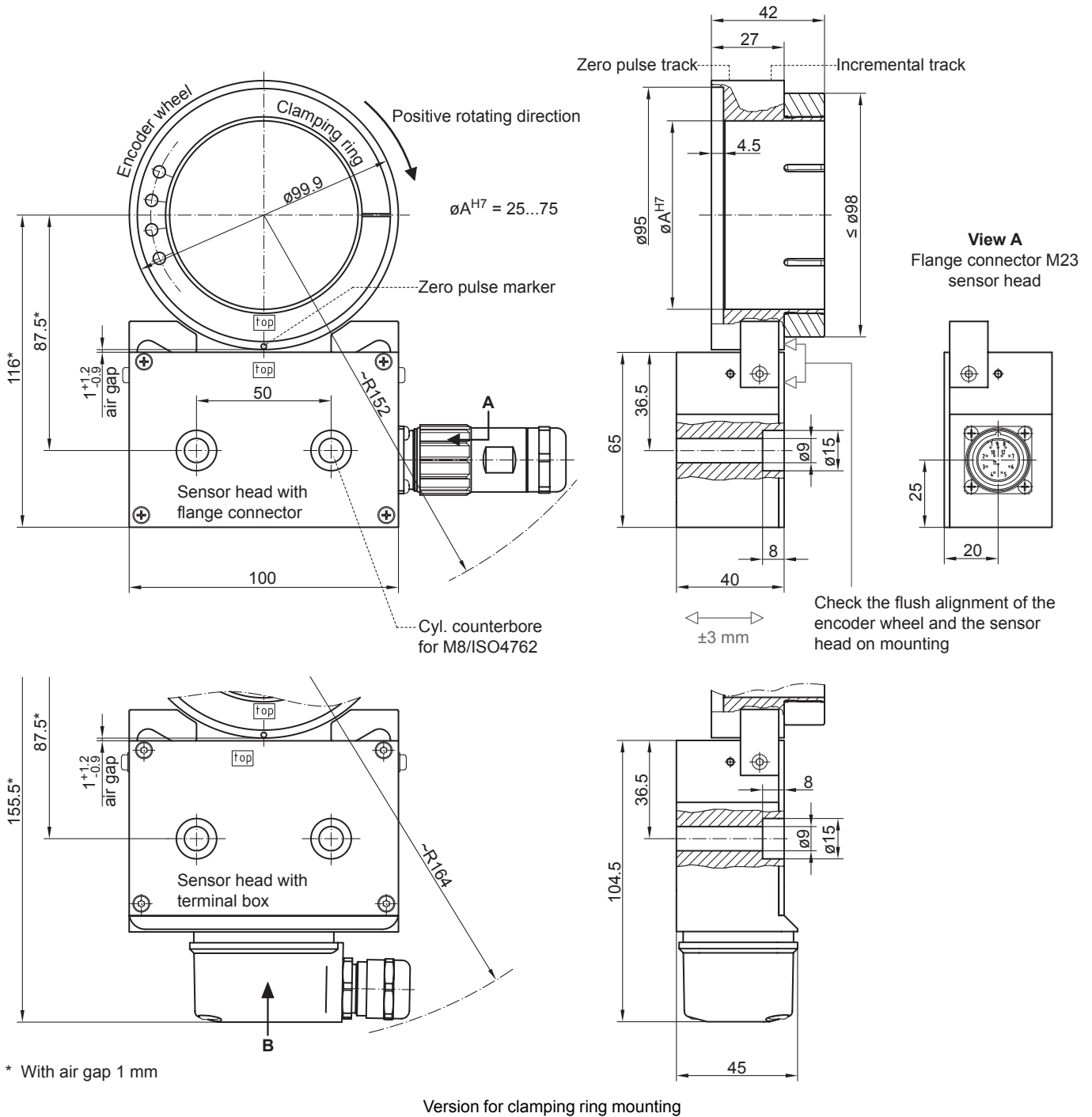


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Ordering reference

	MHGE100	#	5	####	###	N	#####	#
Product	MHGE100							
Encoder without bearings - incremental	MHGE100							
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 / $\varnothing 38$ mm								G38
Screw or shrink fit mounting / $\varnothing 60$ mm								G60
Screw or shrink fit mounting / $\varnothing 80$ mm								G80
Clamping set mounting / $\varnothing 20$ mm								Z20
Clamping set mounting / $\varnothing 75$ mm								Z75
Clamping ring mounting / $\varnothing 25$ mm								K25
Clamping ring mounting / $\varnothing 45$ mm								K45
Clamping ring mounting / $\varnothing 65$ mm								K65
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⁾								
64 (SinCos output)								64
1024								1024
2048								2048
4096								4096
Connection								
1x flange connector M23, tangential 12-pin, male, CCW								C
1x terminal box with cable gland M20, radial								B

(1) Other versions on request