

HOG 9

Blind hollow shaft or cone shaft

300...5000 pulses per revolution

Overview

- Optical sensing method
- Output stage HTL with power linedriver
- TTL output driver for cable length up to 550 m
- Operating temperature up to +100 °C
- Hybrid bearing for extended service life



HUBNER
BERLIN
A Baumer Brand

Technical data

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC $\pm 5\%$
Consumption w/o load	≤ 100 mA
Pulses per revolution	300 ... 5000
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 120 kHz ≤ 300 kHz (on request)
Output signals	K1, K2, K0 + inverted
Output stages	HTL-P (power linedriver) TTL/RS422
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL approval / E217823

Technical data - mechanical design

Size (flange)	$\varnothing 97$ mm
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Technical data - mechanical design

Shaft type	$\varnothing 12...16$ mm (blind hollow shaft) $\varnothing 17$ mm (cone shaft 1:10)
Admitted shaft load	≤ 400 N axial ≤ 500 N radial
Protection EN 60529	IP 56
Operating speed	≤ 10000 rpm (mechanical)
Operating torque typ.	6 Ncm
Rotor moment of inertia	160 gcm ²
Material	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-30...+100 °C -25...+100 °C (>3072 pulses)
Resistance	IEC 60068-2-6 Vibration 17 g, 10-2000 Hz IEC 60068-2-27 Shock 275 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Connection	Flange connector M23, 12-pin
Weight approx.	700 g

Optional

- Function control with EMS (Enhanced Monitoring System)

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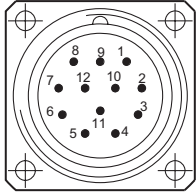
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Terminal assignment

View A (see dimension)

Assignment flange connector

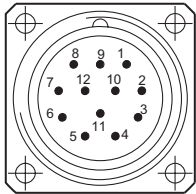


Flange connector M23,
male, 12-pin,
clockwise (CW)

Pin	Assignment
1	$\overline{K2}$
2	dnu
3	K0
4	$\overline{K0}$
5	K1
6	$\overline{K1}$
7	dnu
8	K2
9	dnu
10	0V ($\perp$)
11	dnu
12	+UB

Option EMS: View A (see dimension)

Assignment flange connector



Flange connector M23,
male, 12-pin,
clockwise (CW)

Pin	Assignment
1	$\overline{K2}$
2	dnu
3	K0
4	$\overline{K0}$
5	K1
6	$\overline{K1}$
7	$\overline{Err}$
8	K2
9	0V ($\perp$) @ $\overline{Err}$
10	0V ($\perp$)
11	dnu
12	+UB

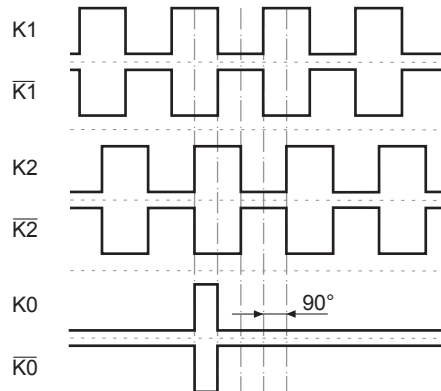
Terminal significance

+UB	Voltage supply
0V ($\perp$)	Ground
K1	Output signal channel 1
$\overline{K1}$	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
$\overline{K0}$	Zero pulse inverted
$\overline{Err}$	Error output (option EMS)
dnu	Do not use

Output signals

HTL/TTL

At positive rotating direction (see dimension)



Option EMS: Status LED / error output

Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output transistors (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection or wrong connection (Error output = LOW)

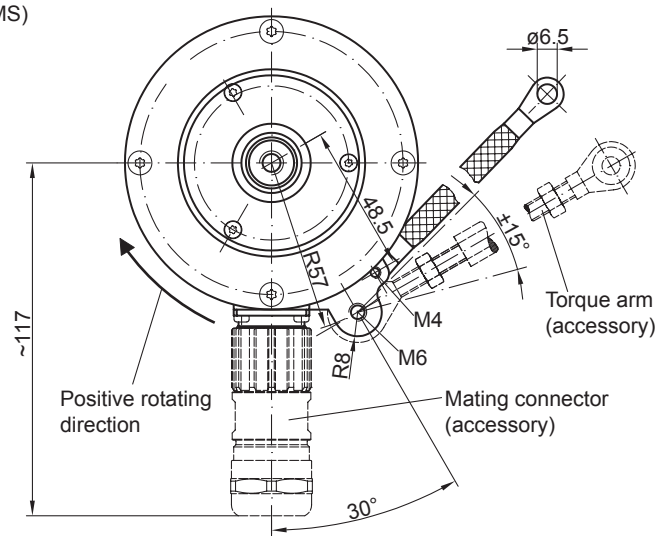
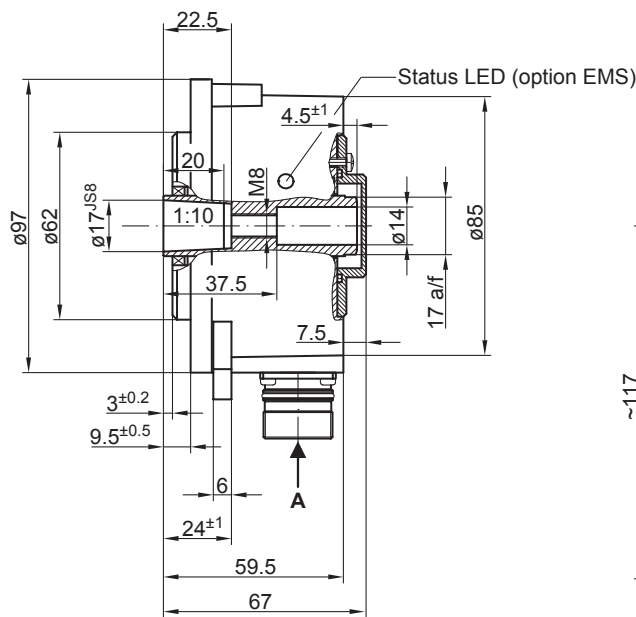
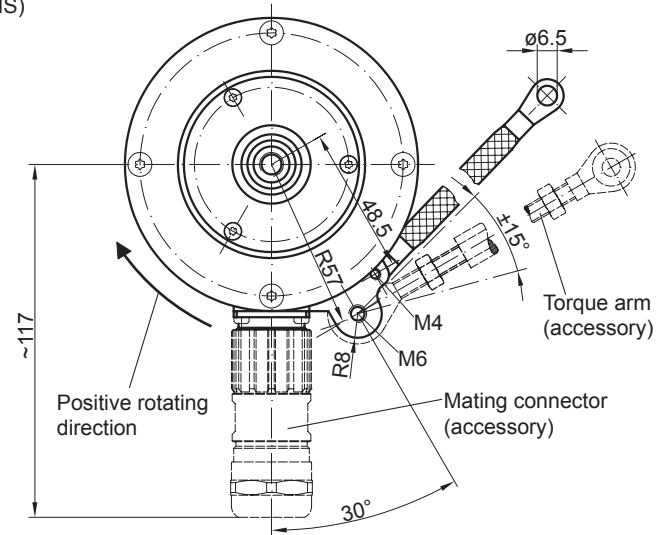
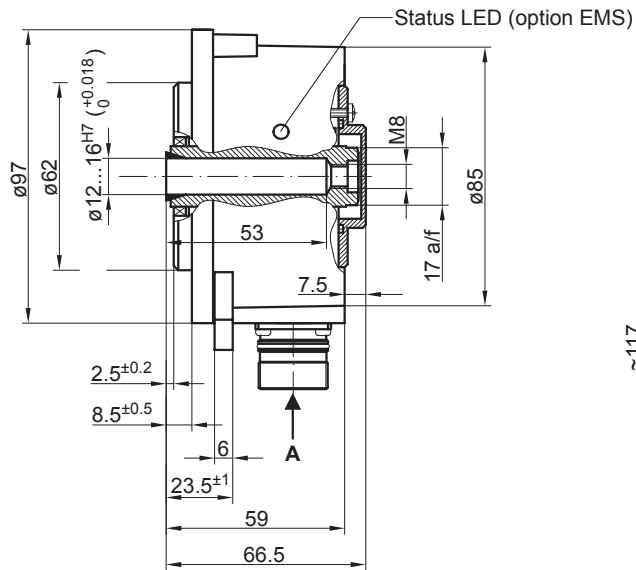
* Only at rotating device

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Dimensions



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Ordering reference

	HOG9	##	DN	####	###	#####
Product						
Incremental encoder	HOG9					
EMS - Enhanced Monitoring System						
Without EMS						
With EMS		.2				
Output signals						
K1, K2, K0			DN			
Pulse number⁽¹⁾						
300				300		
500				500		
512				512		
1000				1000		
1024				1024		
1200				1200		
2048				2048		
2500				2500		
3072				3072		
4096				4096		
5000				5000		
Voltage supply / output stage						
9...30 VDC / output stage HTL with inverted signals					I	
5 VDC / output stage TTL with inverted signals					TTL	
9...30 VDC / output stage TTL with inverted signals					R	
Shaft diameter						
Blind hollow shaft ø12 mm						12H7
Blind hollow shaft ø15 mm						15H7
Blind hollow shaft ø16 mm						16H7
Cone shaft ø17 mm (1:10)						17K

(1) Other pulse numbers on request

Accessories

Mounting accessories

11043628	Torque arm M6, length 67...70 mm
11004078	Torque arm M6, length 120...130 mm (≥71 mm)
11002915	Torque arm M6, length 425...460 mm (≥131 mm)
11054917	Torque arm M6 insulated, length 67...70 mm
11072795	Torque arm M6 insulated, length 120...130 mm (≥71 mm)
11082677	Torque arm M6 insulated, length 425...460 mm (≥131 mm)
11077197	Mounting kit for torque arm size M6 and earthing strap
11081744	Mounting and dismounting kit for blind hollow shaft
11084868	Mounting and dismounting kit for cone shaft