

HOG 9 G

Twin encoder with two electrically separated systems

Blind hollow shaft or cone shaft 300...5000 pulses per revolution

Overview

- Twin encoder featuring two separate systems
- TTL output driver for cable length up to 550 m
- Hybrid bearing for extended service life



Technical data

Technical data - electrical ratings

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

Technical data - mechanical design

Size (flange)	ø97 mm
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Technical data - mechanical design

Shaft type	ø16 mm (blind hollow shaft) ø17 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	2x flange connector M23, 12-pin
Weight approx.	1.1 kg

Optional

- Function control with EMS (Enhanced Monitoring System)

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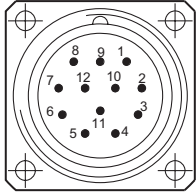
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Terminal assignment

View A (see dimension)

Assignment flange connector

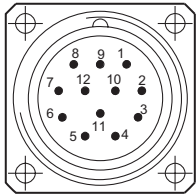


Flange connector M23, male, 12-pin, clockwise (CW)

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

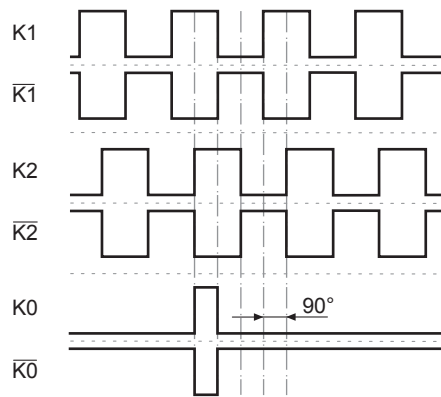
Terminal significance

+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)

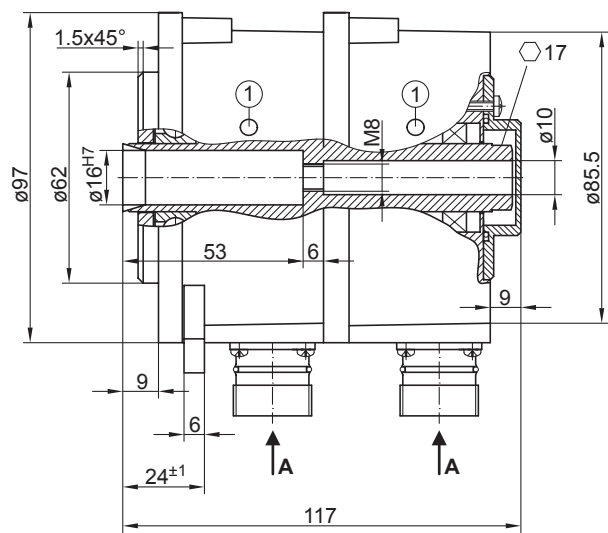
* Only at rotating device

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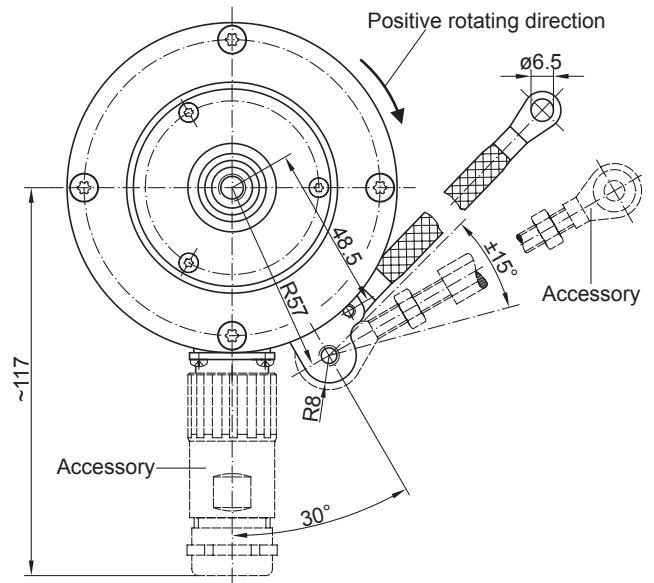
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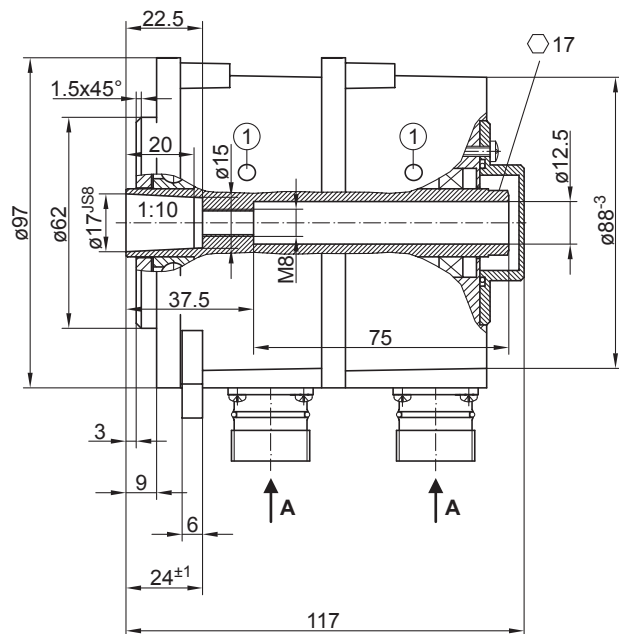
Dimensions



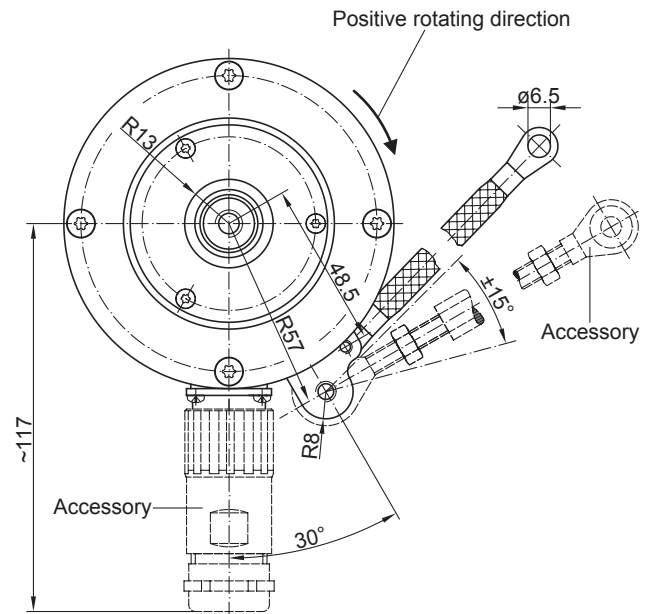
① Status LED (option EMS)



Blind hollow shaft



① Status LED (option EMS)



Cone shaft

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Ordering reference

	HOG9	##	G	DN	####	###	/	DN	####	###	#####
Product											
Incremental encoder	HOG9										
EMS - Enhanced Monitoring System											
Without EMS											
With EMS		.2									
Redundant encoder											
With redundant encoder			G								
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					
Output signals (G)											
K1, K2, K0								DN			
Pulse number (G)⁽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 (G)											
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 \varnothing 16 mm											16H7
Cone shaft \varnothing 17 mm (1:10)											17K

(1) Other pulse numbers on request

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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