

## HOG 10

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

### Overview

- TTL output driver for cable length up to 550 m
- HTL output driver for cable length up to 350 m
- Very high resistance to shock and vibrations
- Hybrid bearing for extended service life
- Large terminal box, turn by 180° or axial terminal cover



**HUBNER**  
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### Technical data

#### Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ±5 %
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°
Sensing method	Optical
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
Shaft insulation	Suitable up to 2.8 kV
Transmission length	≤350 m at 100 kHz (HTL-P) ≤550 m at 100 kHz (TTL)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL approval / E217823

#### Technical data - mechanical design

Size (flange)	ø105 mm
Shaft type	ø12...20 mm (blind hollow shaft) ø17 mm (cone shaft 1:10)

#### Technical data - mechanical design

Admitted shaft load	≤450 N axial ≤600 N radial
Protection EN 60529	IP 66
Operating speed	≤6000 rpm (mechanical)
Operating torque typ.	6 Ncm
Rotor moment of inertia	340 gcm <sup>2</sup>
Material	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses) -50...+100 °C (optional)
Resistance	IEC 60068-2-6 Vibration 20 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Explosion protection	II 3 G Ex ec IIC T4 Gc (gas) II 3 D Ex tc IIIC T135°C Dc (dust) (only with option ATEX)
Connection	Terminal box Terminal cover 2x terminal box (with option M)
Weight approx.	1.6 kg 1.8 kg (with option M)

### Optional

- Function control with EMS
- Redundant sensing with two terminal boxes
- With heating up to -50°C
- With earthing brushes
- Sealing system for tropical environments

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## Terminal assignment

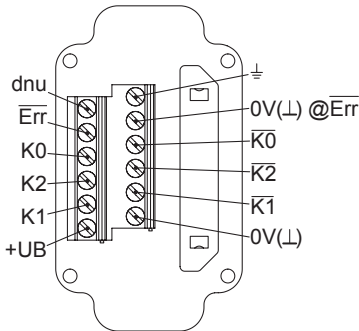
### View A (see dimension)

Connecting terminal terminal box, radial



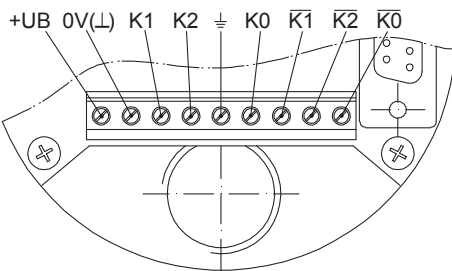
### Option EMS: View A (see dimension)

Connecting terminal terminal box, radial



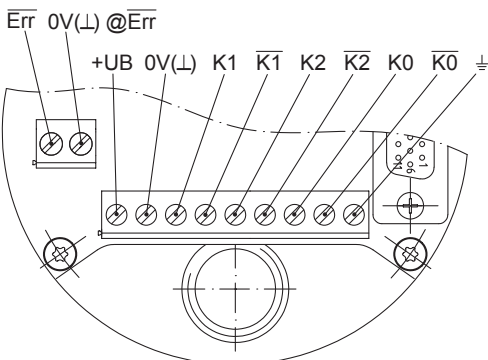
### View B (see dimension)

Connecting terminal terminal cover, axial



### Option EMS: View B (see dimension)

Connecting terminal terminal cover, axial



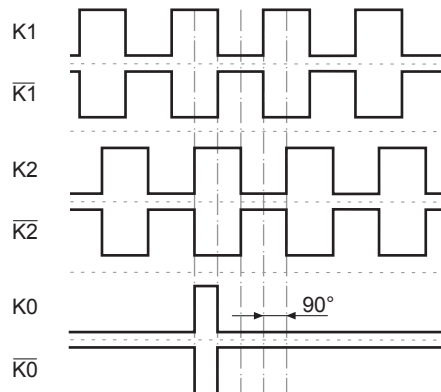
## Terminal significance

+UB	Voltage supply
0V (⊥)	Ground
⊥	Earth ground (housing)
K1	Output signal channel 1
K1̄	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
K2̄	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
K0̄	Zero pulse inverted
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

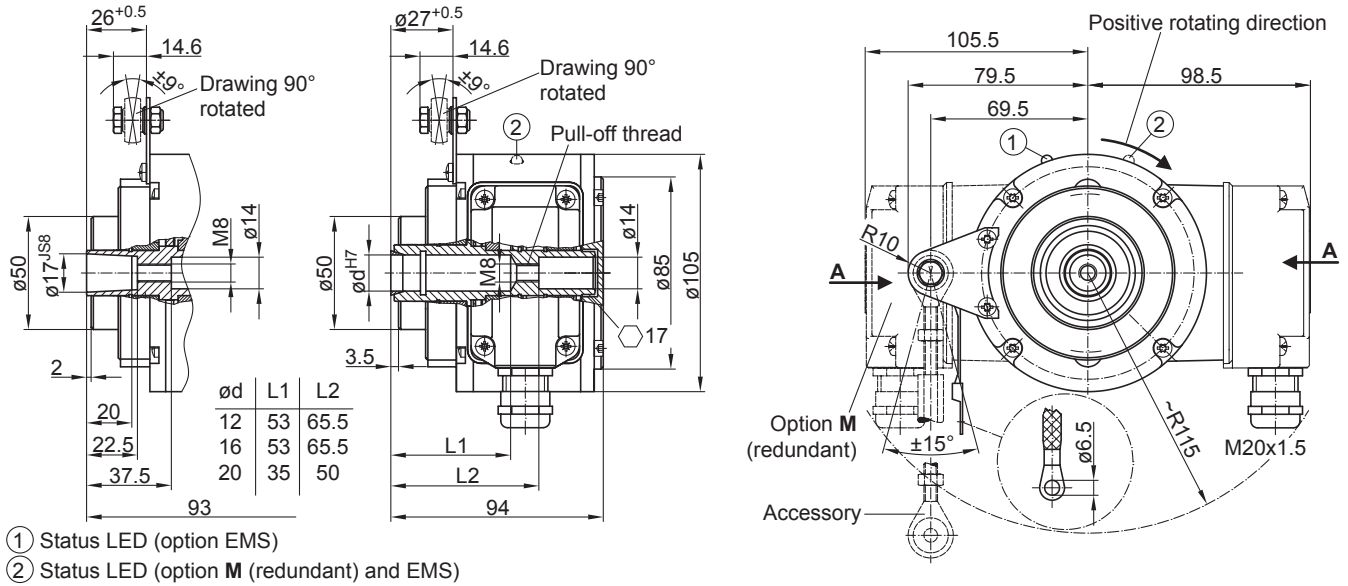
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output transistors (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection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

\* Only at rotating device

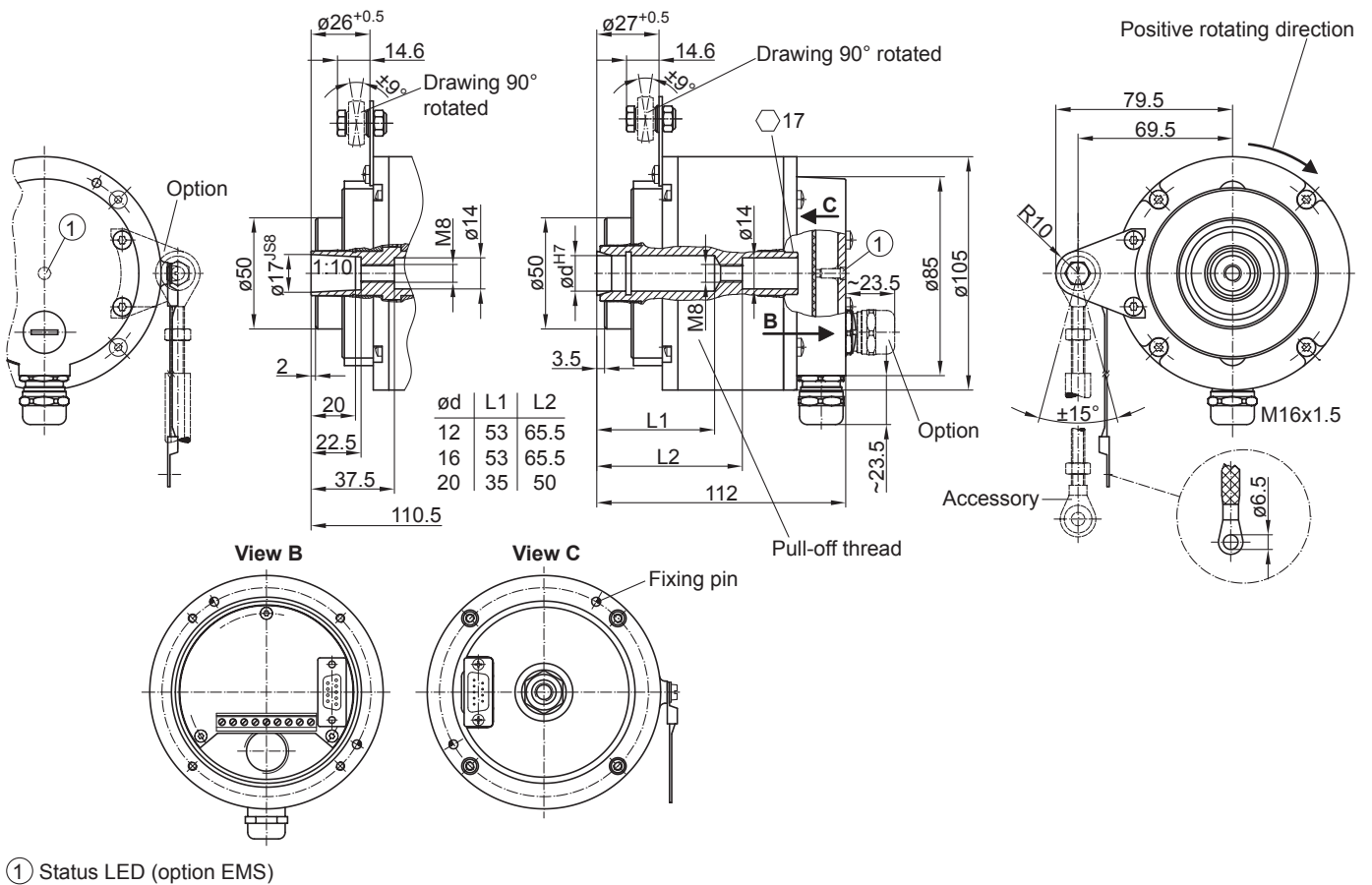
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## Dimensions



Version with radial terminal box



Version with axial terminal cover

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**Ordering reference**

	HOG10	##	#	DN	####	###	##	#####	#####
<b>Product</b>									
Incremental encoder	HOG10								
<b>EMS - Enhanced Monitoring System</b>									
Without EMS									
With EMS		.2							
<b>Redundant sensing</b>									
Without redundant sensing									
With redundant sensing			M						
<b>Output signals</b>									
K1, K2, K0				DN					
<b>Pulse number<sup>(1)</sup></b>									
300					300				
500					500				
512					512				
1000					1000				
1024					1024				
1200					1200				
2048					2048				
2500					2500				
3072					3072				
4096					4096				
5000					5000				
<b>Voltage supply / output stage</b>									
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		
<b>Sealing system</b>									
Dust protection								LR	
Damp protection								SR	
Tropical protection								TR	
<b>Shaft diameter</b>									
Blind hollow shaft ø12 mm									12H7
Blind hollow shaft ø16 mm									16H7
Blind hollow shaft ø20 mm									20H7
Cone shaft ø17 mm (1:10)									17K
<b>Connection</b>									
Terminal box, radial									KLK
Terminal cover, axial (not for option M redundant)									KLK-AX

(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 ( $\geq 71$ mm)
11002915	Torque arm M6, length 425...460 mm ( $\geq 131$ mm)
11054917	Torque arm M6 insulated, length 67...70 mm
11072795	Torque arm M6 insulated, length 120...130 mm ( $\geq 71$ mm)
11082677	Torque arm M6 insulated, length 425...460 mm ( $\geq 131$ mm)
11054918	Torque arm M6 stainless, length 67...70 mm
11072787	Torque arm M6 stainless, length 120...130 mm ( $\geq 71$ mm)
11072737	Torque arm M6 stainless, length 425...460 mm ( $\geq 131$ mm)
11077197	Mounting kit for torque arm size M6 and earthing strap
11077087	Mounting and dismounting set