

# Incremental encoders

## Blind hollow shaft or cone shaft

### 300...5000 pulses per revolution

## HOG 11



HOG 11

Technical data - electrical ratings	
Voltage supply	9...30 VDC 5 VDC $\pm$ 5 %
Consumption w/o load	$\leq$ 100 mA
Pulses per revolution	300...5000
Phase shift	90° $\pm$ 20°
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq$ 120 kHz $\leq$ 300 kHz (on request)
Output signals	K1, K2, K0 + inverted Error output (only EMS)
Output stages	HTL-P (power linedriver) TTL/RS422
Shaft insulation	2.8 kV
Transmission length	$\leq$ 350 m at 100 kHz (HTL-P) $\leq$ 550 m at 100 kHz (TTL)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approvals	CE, UL approval / E256710

### Features

- Offshore and salt water firm, high protection IP 67
- TTL output driver for cable length up to 550 m
- Very high resistance to shock and vibrations
- Hybrid bearing for extended lifetime
- Shaft insulation up to 2.8 kV
- Big terminal box, turn by 180° or axial terminal cover

### Optional

- Function control with EMS
- Redundant sensing with two terminal boxes
- With heating up to -50°C, with earthing brushes

### Technical data - mechanical design

Size (flange)	$\varnothing$ 105 mm
Shaft type	$\varnothing$ 12...20 mm (blind hollow shaft) $\varnothing$ 17 mm (cone shaft 1:10)
Admitted shaft load	$\leq$ 450 N axial $\leq$ 600 N radial
Protection DIN EN 60529	IP 67
Operating speed	$\leq$ 6000 rpm (mechanical)
Operating torque typ.	6 Ncm
Rotor moment of inertia	340 gcm <sup>2</sup>
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses per revolution) -50...+100 °C (optional)
Resistance	IEC 60068-2-6 Vibration 20 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 6 ms
Explosion protection	II 3 G Ex nA IIC T4 Gc (gas) II 3 D Ex tc IIIC T135°C Dc (dust)
Connection	Terminal box Terminal cover 2x terminal box (with option M)
Weight approx.	1.6 kg, 1.8 kg (with option M)

Subject to modification in technic and design. Errors and omissions excepted.

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#### Part number

#### Incremental encoder

HOG11   **DN**   **SR**

Connection  
 KLK Terminal box, radial  
 KLK-AX Terminal cover, axial (not for option M redundant)

Shaft diameter  
 12H7 Blind hollow shaft  $\varnothing$ 12 mm  
 16H7 Blind hollow shaft  $\varnothing$ 16 mm  
 20H7 Blind hollow shaft  $\varnothing$ 20 mm  
 17K Cone shaft  $\varnothing$ 17 mm (1:10)

Voltage supply / signals  
 I 9...30 VDC / output circuit HTL with inverted signals  
 TTL 5 VDC / output circuit TTL with inverted signals  
 R 9...30 VDC / output circuit TTL with inverted signals

Pulse number - see table

Output signals  
 DN K1, K2, K0

Redundant sensing  
 Without redundant sensing  
 M With redundant sensing

EMS - Enhanced Monitoring System  
 Without EMS  
 .2 With EMS

#### Pulse number

300	1000	2048	4096
500	1024	2500	5000
512	1200	3072	

Other pulse numbers on request.

#### Accessories

##### Connectors and cables

HEK 8 Sensor cable for encoders

##### Mounting accessories

DMS 6 Torque arm size M6

11077197 Mounting kit for torque arm size M6 and earthing strap

11077087 Mounting and dismounting set

##### Diagnostic accessories

HENQ 1100 Analyzer for encoders

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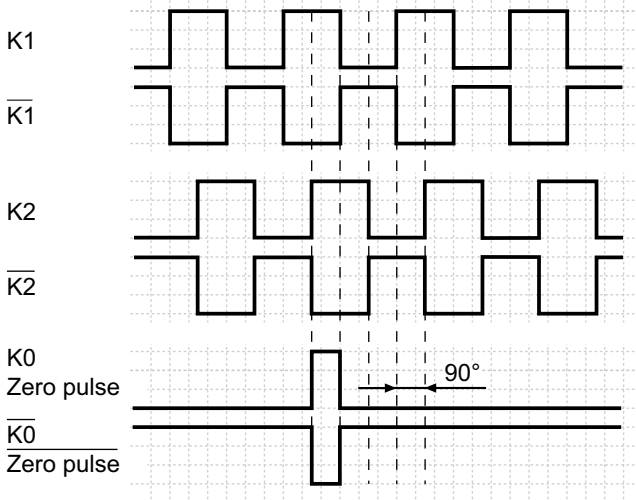
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### Output signals

At positive rotating direction



### Option EMS: LED status / Error output

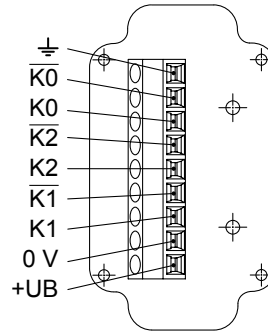
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output driver (Error output = LOW)
Flash light green	Encoder o.k., rotating (Error output = HIGH)
Green	Encoder o.k., stopped (Error output = HIGH)
No light	No output voltage connection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

\* Only at rotating encoder

### Terminal assignment

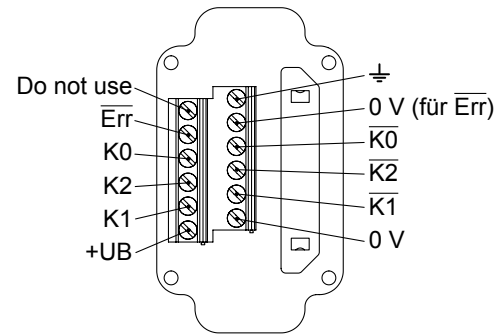
#### View A

Connecting terminal in radial terminal box



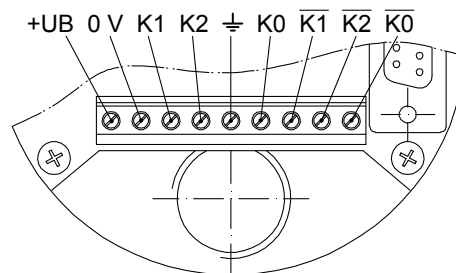
#### Option EMS: View A

Connecting terminal in radial terminal box



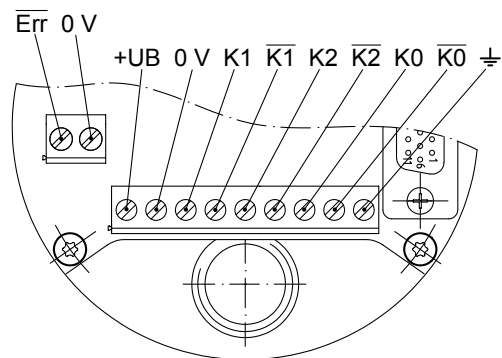
#### View B

Connecting terminal in axial terminal cover



#### Option EMS: View B

Connecting terminal in axial terminal cover



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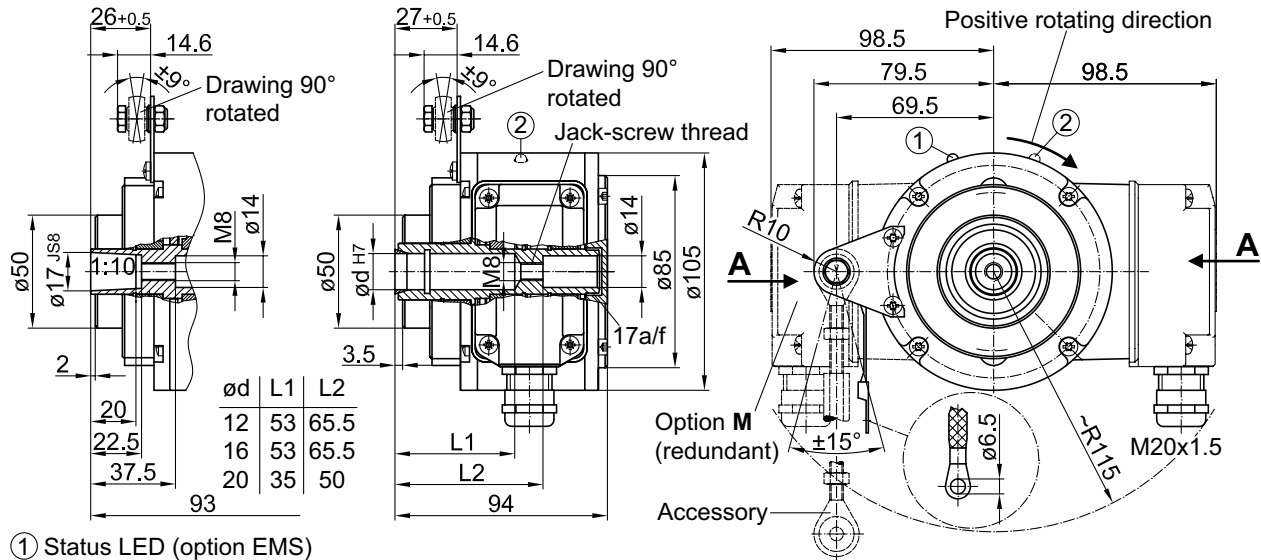
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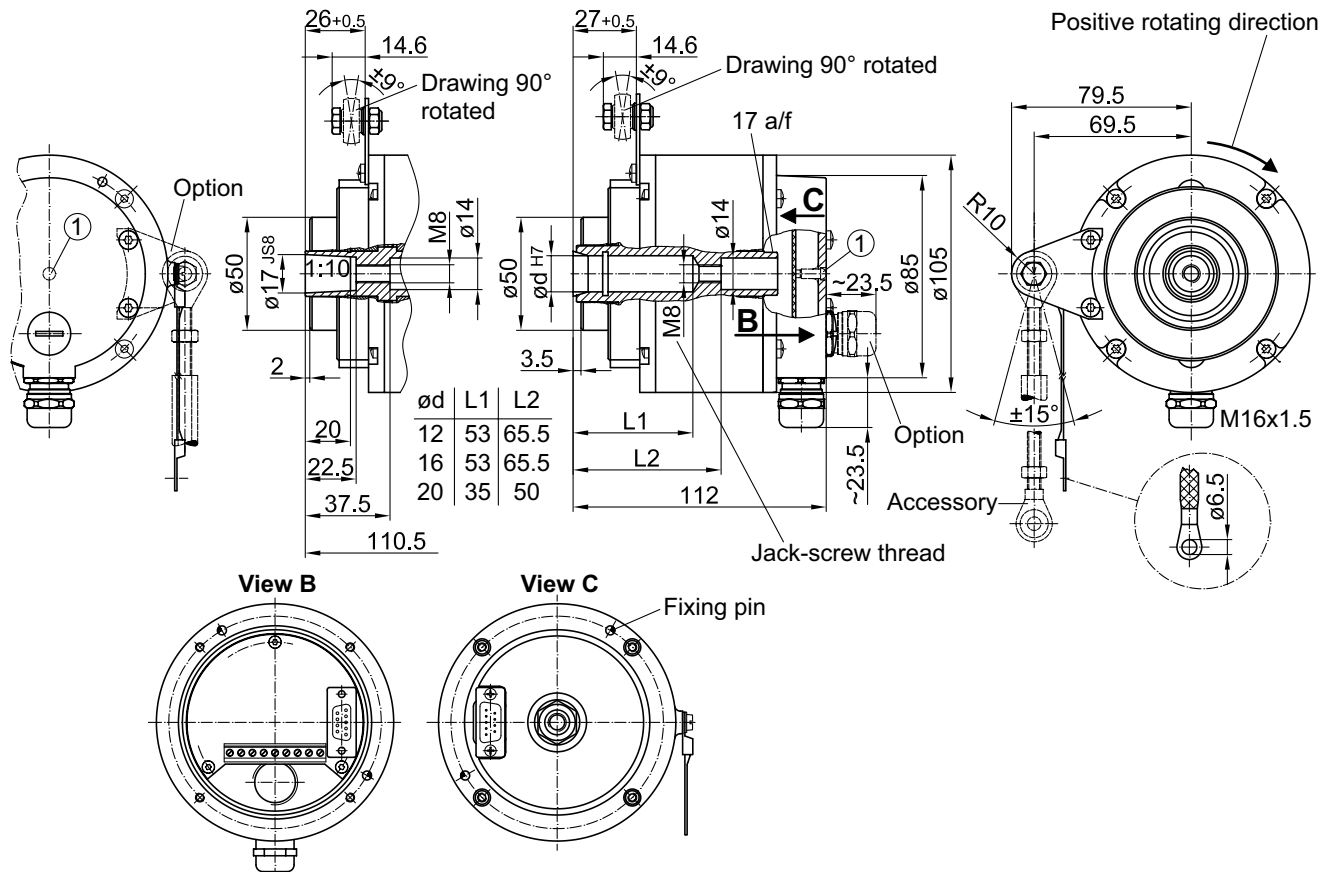
## Dimensions

### HOG 11 (HOG 11.2, HOG 11 M, HOG 11.2 M) - Version with radial terminal box



- ① Status LED (option EMS)
- ② Status LED (option M (redundant) and EMS)

### HOG 11 (HOG 11.2) - Version with axial terminal cover



- ① Status LED (Option EMS)

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