

Combination

Twin encoder with two electrically separated systems

Blind hollow shaft or cone shaft

300...5000 pulses per revolution

HOG 11 G



HOG 11 G

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°
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90°
Output frequency	\leq 120 kHz \leq 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
Shaft insulation	Suitable up to 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

- Twin encoder featuring two separate systems
- 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 service life
- Large terminal boxes, turn by 180°

Optional

- Function control with EMS
(Enhanced Monitoring System)
- Redundant sensing with two terminal boxes for each system

Technical data - mechanical design

Size (flange)	\varnothing 105 mm
Shaft type	\varnothing 16...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 ²
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses per revolution)
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 CX (C5-M) according to ISO 12944-2
Explosion protection	II 3 G Ex nA IIC T4 Gc (gas) II 3 D Ex tc IIIC T135°C Dc (dust)
Connection	2x terminal box 4x terminal box (with option M)
Weight approx.	2.9 kg, 3.3 kg (with option M)

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Part number

HOG11 | | G | | | DN | | | | | / | DN | | | | | SR | |

<p>Shaft diameter</p> <p>16H7 Blind hollow shaft \varnothing16 mm 20H7 Blind hollow shaft \varnothing20 mm 17K Cone shaft \varnothing17 mm (1:10)</p> <p>Voltage supply / signals</p> <p>I 9...30 VDC / output stage HTL with inverted signals TTL 5 VDC / output stage TTL with inverted signals R 9...30 VDC / output stage TTL with inverted signals</p> <p>Pulse number - see table</p> <p>Output signals</p> <p>DN K1, K2, K0</p> <p>Voltage supply / signals</p> <p>I 9...30 VDC / output stage HTL with inverted signals TTL 5 VDC / output stage TTL with inverted signals R 9...30 VDC / output stage TTL with inverted signals</p> <p>Pulse number - see table</p> <p>Output signals</p> <p>DN K1, K2, K0</p> <p>Redundant sensing</p> <p>Without redundant sensing M With redundant sensing</p> <p>EMS - Enhanced Monitoring System</p> <p>Without EMS .2 With EMS</p>	<p>Shaft diameter</p> <p>16H7 Blind hollow shaft \varnothing16 mm 20H7 Blind hollow shaft \varnothing20 mm 17K Cone shaft \varnothing17 mm (1:10)</p> <p>Voltage supply / signals</p> <p>I 9...30 VDC / output stage HTL with inverted signals TTL 5 VDC / output stage TTL with inverted signals R 9...30 VDC / output stage TTL with inverted signals</p> <p>Pulse number - see table</p> <p>Output signals</p> <p>DN K1, K2, K0</p> <p>Voltage supply / signals</p> <p>I 9...30 VDC / output stage HTL with inverted signals TTL 5 VDC / output stage TTL with inverted signals R 9...30 VDC / output stage TTL with inverted signals</p> <p>Pulse number - see table</p> <p>Output signals</p> <p>DN K1, K2, K0</p> <p>Redundant sensing</p> <p>Without redundant sensing M With redundant sensing</p> <p>EMS - Enhanced Monitoring System</p> <p>Without EMS .2 With EMS</p>
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Pulse number

300	1000	2048	4096
500	1024	2500	5000
512	1200	3072	

Other pulse numbers on request.

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Twin encoder with two electrically separated systems

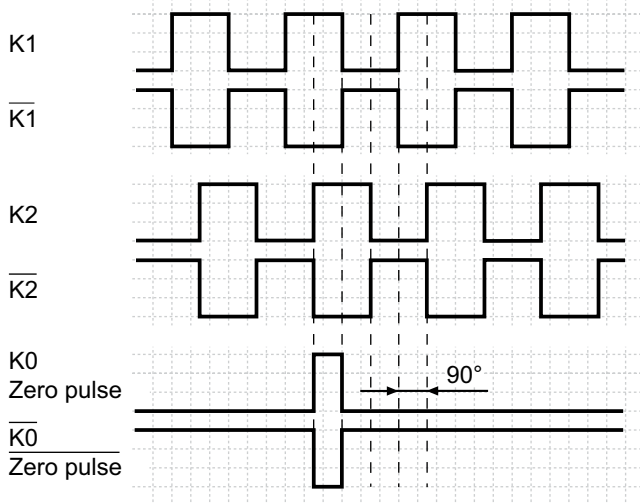
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Output signals

At positive rotating direction



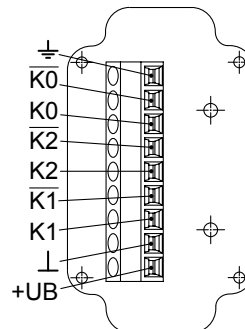
Terminal significance

+UB	Voltage supply (for the device)
⊥; ⚡; GND; 0 V	Ground (for the signals)
⊕; ⚡	Earth ground (housing)
K1; A; A+	Output signal channel 1
K1̄; Ā; A-	Output signal channel 1 inverted
K2; B; B+	Output signal channel 2 (offset by 90° to channel 1)
K2̄; B̄; B-	Output signal channel 2 (offset by 90° to channel 1) inverted
K0; C; R; R+	Zero pulse (reference signal)
K0̄; C̄; R̄; R-	Zero pulse (reference signal) inverted
Err̄; Err-	Error output (option EMS)
dnu	Do not use

Terminal assignment

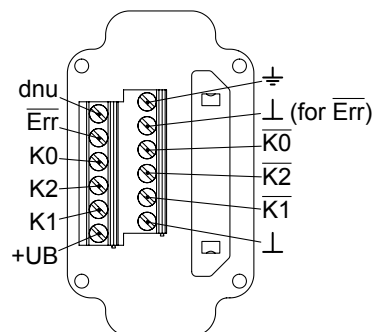
View A

Connecting terminal terminal box



Option EMS: View A

Connecting terminal terminal box



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	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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Accessories

Connectors and cables

HEK 8	Sensor cable for encoders
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Mounting accessories

11077197	Mounting kit for torque arm size M6 and earthing strap
11077087	Mounting and dismantling set
11043628	Torque arm M6, length 67-70 mm
11004078	Torque arm M6, length 120-130 mm (shortenable ≥ 71 mm)
11002915	Torque arm M6, length 425-460 mm (shortenable ≥ 131 mm)
11054917	Torque arm M6 insulated, length 67-70 mm
11072795	Torque arm M6 insulated, length 120-130 mm (shortenable ≥ 71 mm)
11082677	Torque arm M6 insulated, length 425-460 mm (shortenable ≥ 131 mm)

Diagnostic accessories

11075858	Analyzer for encoders HENQ 1100
11075880	Analyzer for encoders HENQ 1100 with a power pack

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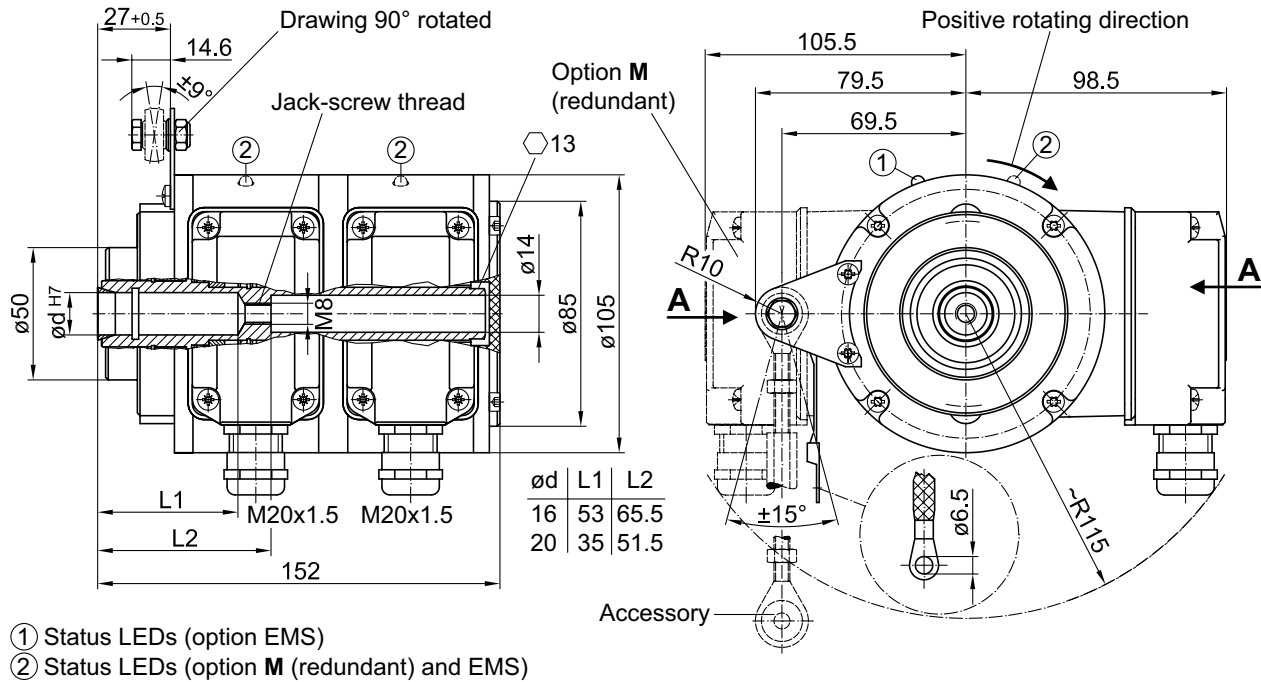
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Dimensions

Blind hollow shaft



Cone shaft

