

Incremental encoders

Through hollow shaft $\varnothing 38...75$ mm

250...5000 pulses per revolution

HOG 163



HOG 163

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ± 5 % 9...26 VDC
Consumption w/o load	≤ 100 mA
Pulses per revolution	250...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
Output signals	K1, K2, K0 + inverted
Output stages	HTL TTL/RS422
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approvals	CE, UL approval / E256710

Features

- Insulated constitution
- Optical sensing method
- Robust light-metal housing
- Output stage HTL or TTL
- Output stage TTL with regulator UB 9...26 VDC
- Special protection against corrosion
- Large terminal box, turn by 180°

Optional

- Redundant sensing with two terminal boxes
- Heating for applications up to -50°C (no explosion protection)

Technical data - mechanical design

Size (flange)	$\varnothing 158$ mm
Shaft type	$\varnothing 38...75$ mm (through hollow shaft)
Admitted shaft load	≤ 350 N axial, ≤ 500 N radial
Protection DIN EN 60529	IP 56
Operating speed	≤ 6000 rpm (mechanical)
Operating torque typ.	17 Ncm
Rotor moment of inertia	28.5 kgcm ² ($\varnothing 50$)
Materials	Housing: aluminium alloy Shaft: stainless steel
Operating temperature	$-40...+85^\circ\text{C}$
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 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 nA IIC T4 Gc (gas) II 3 D Ex tc IIIB T135°C Dc (dust)
Connection	Terminal box 2x terminal box (with option M)
Weight approx.	5.4 kg ($\varnothing 48$), 3.5 kg ($\varnothing 75$), 3.9 kg ($\varnothing 75$ with option M)

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

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Part number

Incremental encoder

HOG163 **DN**

Shaft diameter

38H7	Through hollow shaft $\varnothing 38$ mm
50H7	Through hollow shaft $\varnothing 50$ mm
55H7	Through hollow shaft $\varnothing 55$ mm
56H7	Through hollow shaft $\varnothing 56$ mm
60H7	Through hollow shaft $\varnothing 60$ mm
65H7	Through hollow shaft $\varnothing 65$ mm
70H7	Through hollow shaft $\varnothing 70$ mm
75H7	Through hollow shaft $\varnothing 75$ mm

Voltage supply / signals

I	9...30 VDC / output stage HTL with inverted signals
TTL	5 VDC / output stage TTL with inverted signals
R	9...26 VDC / output stage TTL with inverted signals

Pulse number - see table

Output signals

DN K1, K2, K0

Redundant sensing

- Without redundant sensing
- M With redundant sensing

Pulse number

250	1000	1200	4096
500	1024	2048	5000
512	1080	2500	

Other pulse numbers on request.

Incremental encoders

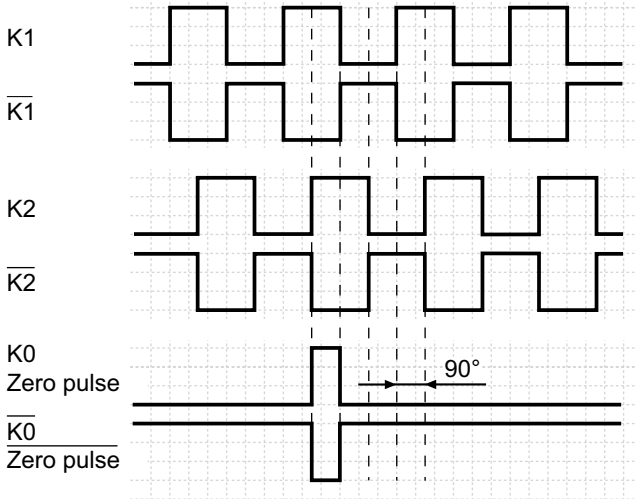
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Output signals

At positive rotating direction

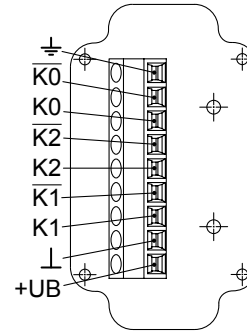


Terminal significance

+UB	Voltage supply (for the device)
⊥; ↓; GND; 0 V	Ground (for the signals)
⊕; ↗	Earth ground (housing)
K1; A; A+	Output signal channel 1
$\overline{K1}$; \overline{A} ; A-	Output signal channel 1 inverted
K2; B; B+	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$; \overline{B} ; B-	Output signal channel 2 (offset by 90° to channel 1) inverted
K0; C; R; R+	Zero pulse (reference signal)
$\overline{K0}$; \overline{C} ; \overline{R} ; R-	Zero pulse (reference signal) inverted
dnu	Do not use

Terminal assignment

View A - Connecting terminal terminal box



Accessories

Connectors and cables

HEK 8 Sensor cable for encoders

Mounting accessories

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)
11077197	Mounting kit for torque arm size M6 and earthing strap

Diagnostic accessories

11075858 Analyzer for encoders HENQ 1100

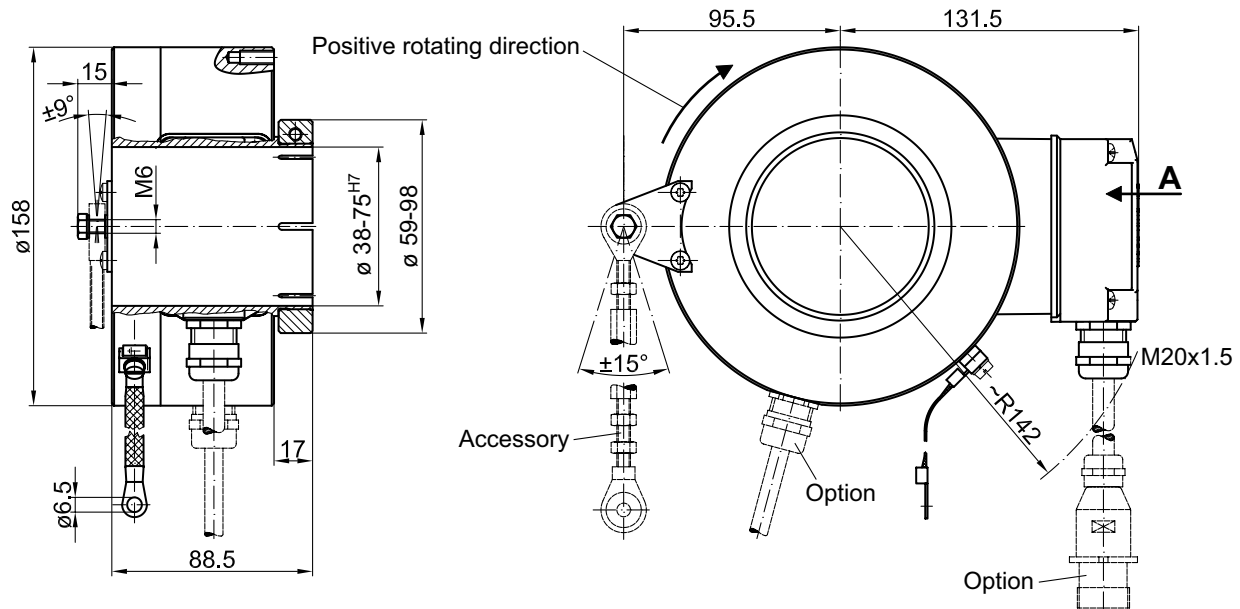
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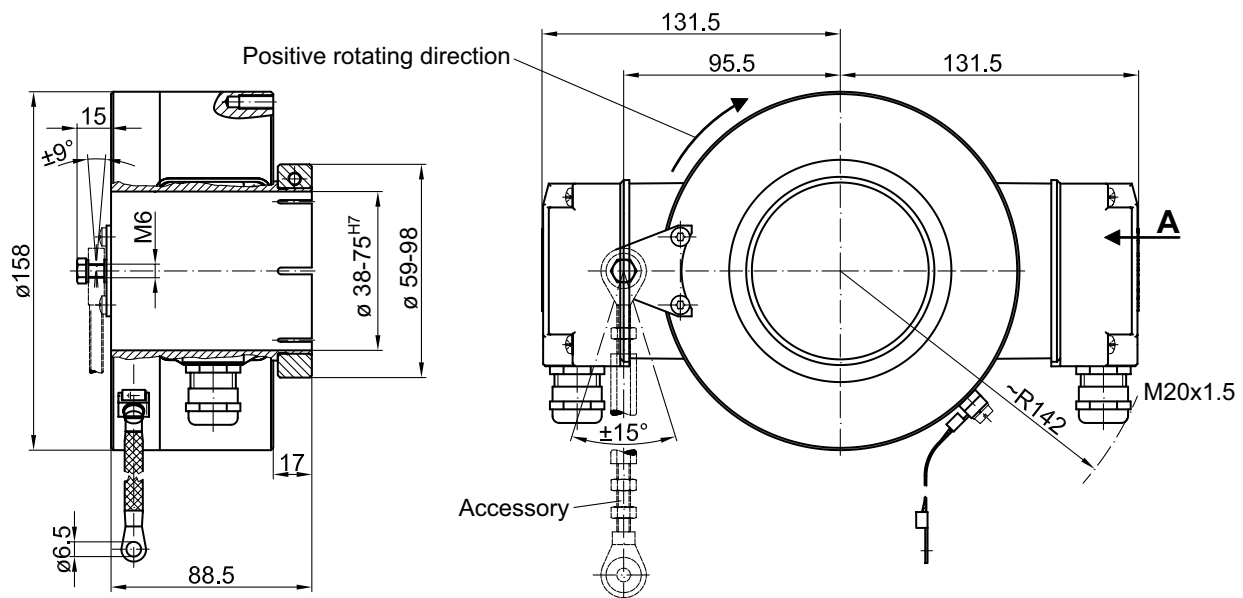
HOG 163

Dimensions

Version with single sensing



Version with redundant sensing



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