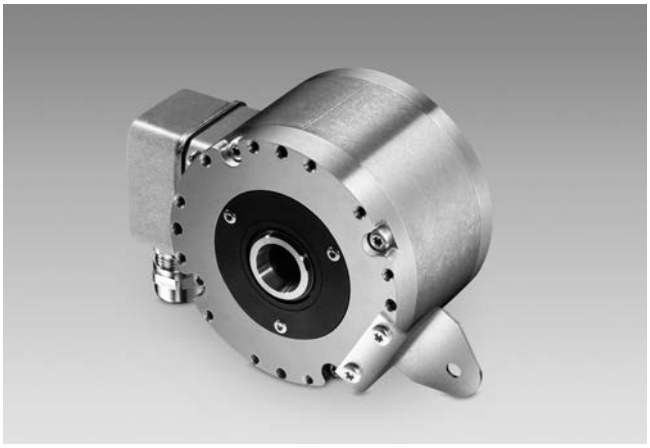
Incremental encoders

Insulated blind hollow shaft ø12...16 mm, cone shaft ø17 mm

500...2500 pulses per revolution

HOG 86E



HOG 86E T

Features

- **Robust, compact housing**
- **Two bearings with large distance, one at each end**
- **High shaft load up to 450 N**
- **Shock resistant up to 250 g**
- **Shaft insulation up to 2.8 kV**
- **Highest operating speed 10000 rpm**
- **TTL output driver for cable length up to 550 m**
- **Terminal box, turn by 180°**

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ±5 %
Consumption w/o load	≤100 mA
Pulses per revolution	500...2500
Phase shift	90° ±20°
Duty cycle	45...55 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤170 kHz ≤300 kHz (on request)
Output signals	K1, K2, K0 + inverted
Output stages	HTL-P (power linedriver) TTL/RS422
Shaft insulation	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
Approvals	CE, UL/ CSA approval / E256710

Technical data - mechanical design

Size (flange)	ø99 mm
Shaft type	ø12...16 mm (blind hollow shaft) ø17 mm (cone shaft 1:10)
Admitted shaft load	≤350 N axial ≤450 N radial
Motor shaft tolerance	±0.2 mm radial
Protection DIN EN 60529	IP 66
Operating speed	≤10000 rpm (mechanical)
Operating torque	≤6 Ncm
Rotor moment of inertia	160 gcm²
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-40...+100 °C
Resistance	IEC 60068-2-6 Vibration 15 g, 10-2000 Hz IEC 60068-2-27 Shock 250 g, 6 ms
Corrosion protection	Option: 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 IIIC T135°C Dc (dust)
Connection	Terminal box Flange connector M23, 12-pin
Weight approx.	1.3 kg

HOG 86E

Part number

Incremental encoder

HOG86E		P			DN						

Corrosion protection
- Without
- C4 Suitable for ambient conditions C4 according to ISO 12944-2

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

Pulse number - see table

Output signals
- DN K1, K2, K0 + inverted

Shaft diameter
- 2 Blind hollow shaft ø12 mm, fit H7
- 6 Blind hollow shaft ø16 mm, fit H7
- 7 Cone shaft ø17 mm (1:10)
- 8 Blind hollow shaft ø16 mm, fit G7
- 9 Blind hollow shaft ø12 mm, fit F6

Insulation
- P PA insulated

Connection
- T 1x terminal box, radial
- F 1x flange connector M23, radial

Pulse number

500	1000	1250	2500
512	1024	2048	

Other pulse numbers on request.

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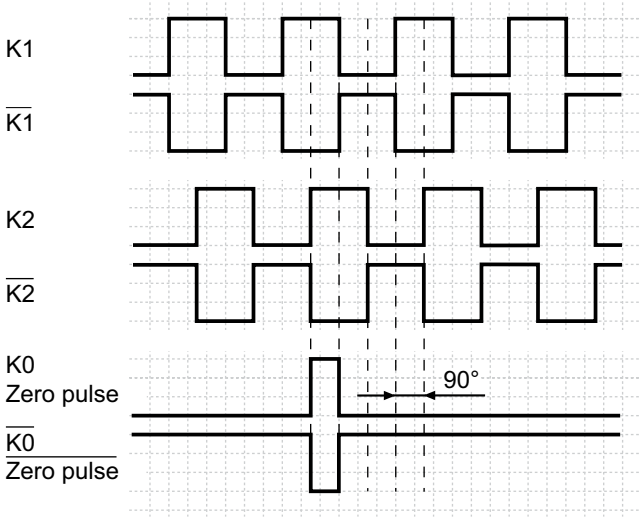
Output signals

At positive rotating direction

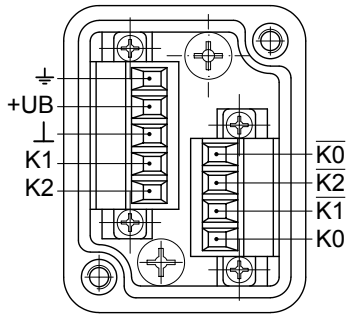


Terminal significance

+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

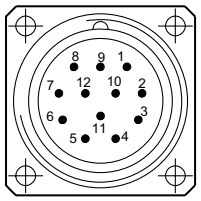
Terminal assignment

HOG 86E T - View A
Connecting terminal terminal box



HOG 86E F - View B
Flange connector M23, 12-pin, male, 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	⊥
11	dnu
12	+UB



Accessories	
Connectors and cables	
HEK 8	Sensor cable for encoders
11068577	Mating connector M23, solder version, 12-pin, CCW
Mounting accessories	
11071906	Mounting kit earthing strap
11077087	Mounting and dismounting 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)
11071904	Mounting kit for torque arm size M6
Diagnostic accessories	
11075858	Analyzer for encoders HENQ 1100

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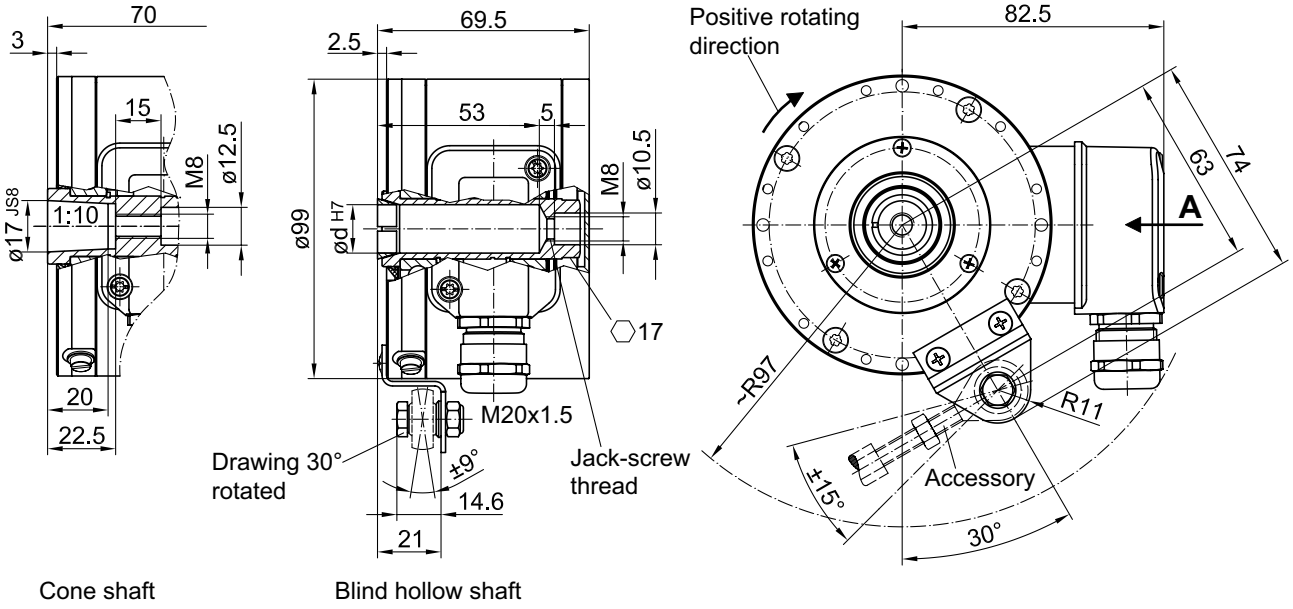
HOG 86E

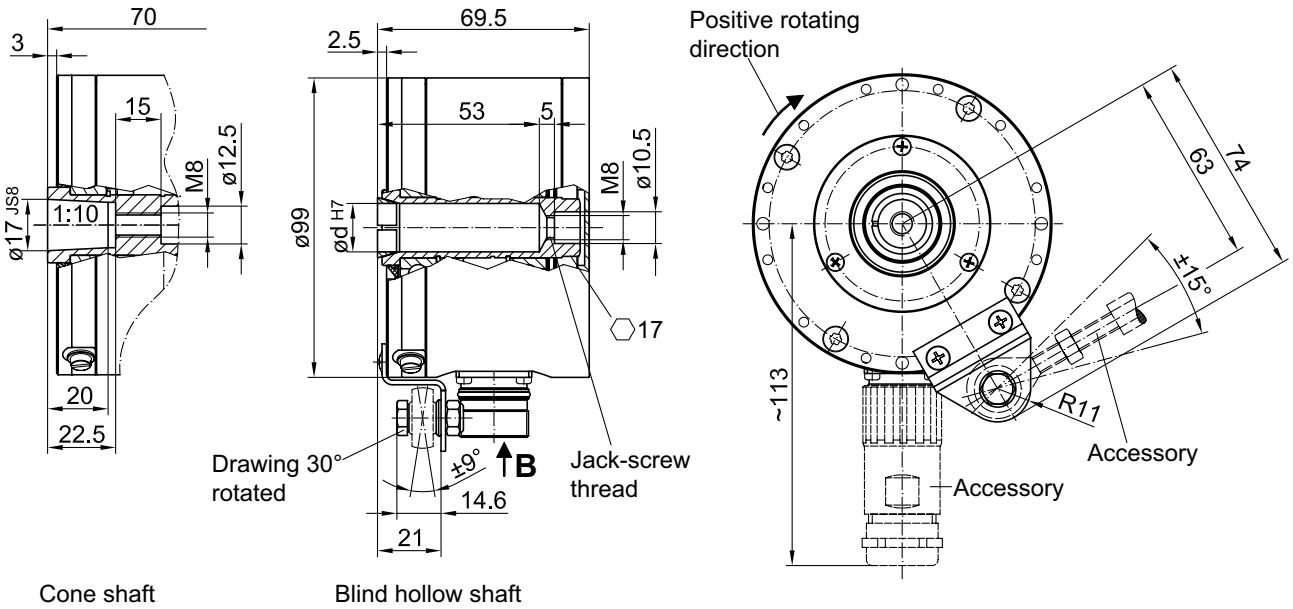
Dimensions

HOG 86E T - Version with radial terminal box



Cone shaft Blind hollow shaft

HOG 86E F - Version with radial flange connector M23



Cone shaft Blind hollow shaft