

Incremental encoders

Redundant sensing, isolated blind hollow shaft $\varnothing 12...16$ mm, cone shaft $\varnothing 17$ mm

500...5000 pulses per revolution

HOG 86 M



HOG 86.2 M T

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ± 5 %
Consumption w/o load	≤ 100 mA
Pulses per revolution	500...5000
Phase shift	$90^\circ \pm 20^\circ$
Scan ratio	45...55 % (40...60 % > 3072 pulses per revolution)
Reference signal	Zero pulse, width 90°
Operating principle	Redundant sensing
Sensing method	Optical
Output frequency	≤ 120 kHz ≤ 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	≤ 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

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
- Terminal boxes, turn by 180°
- Redundant sensing
- Hybrid bearing for extended lifetime

Optional

- Function control (EMS)

Technical data - mechanical design

Size (flange)	$\varnothing 99$ mm
Shaft type	$\varnothing 12...16$ mm (blind hollow shaft) $\varnothing 17$ 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 gcm ²
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (> 3072 pulses per revolution)
Resistance	IEC 60068-2-6 Vibration 15 g, 10-2000 Hz IEC 60068-2-27 Shock 250 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist Complies to ISO 12944-5:1998 Protective paint systems (C4)
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
Weight approx.	1.4 kg

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

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Part number

HOG86

	M	T	H		DN			
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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 $\varnothing 12$ mm, fit H7
- 9 Blind hollow shaft $\varnothing 12$ mm, fit F6
- 6 Blind hollow shaft $\varnothing 16$ mm, fit H7
- 8 Blind hollow shaft $\varnothing 16$ mm, fit G7
- 7 Cone shaft $\varnothing 17$ mm (1:10)

Insulation

H Hybrid bearing

Connection

T 2x terminal boxes, radial

EMS - Enhanced Monitoring System

Without EMS

.2 With EMS

Pulse number

500	1000	1250	2500	4096
512	1024	2048	3072	5000

Accessories

Connectors and cables

HEK 8 Sensor cable for encoders

Mounting accessories

11077087	Mounting and dismounting set
11071906	Mounting kit earthing strap
DMS 6	Torque arm size M6
11071850	Support plate mounting kit R63 for torque arm size M6
11082676	Support plate mounting kit R69 for torque arm size M6
11072076	Screw mounting kit for torque arm size M6
11071904	Mounting kit for torque arm size M6

Diagnostic accessories

HENQ 1100 Analyzer for encoders

Incremental encoders

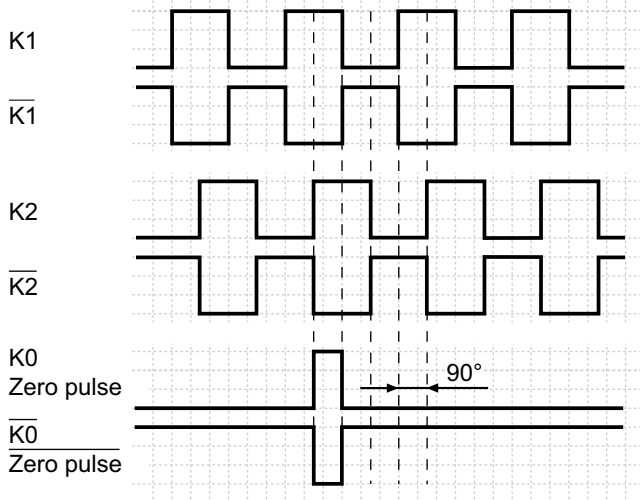
Redundant sensing, isolated blind hollow shaft $\varnothing 12...16$ mm, cone shaft $\varnothing 17$ mm

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Output signals

At positive rotating direction



Option EMS: LED status / Error output

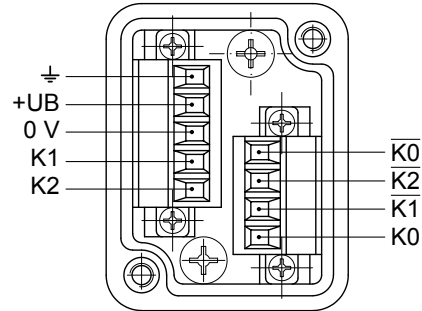
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output driver (Error output = LOW)
Flash light green	Encoder o.k., rotating (Error output = HIGH)
Green	Encoder o.k., stopped (Error output = HIGH)
No light	No output voltage connection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

* Only at rotating encoder

Terminal assignment

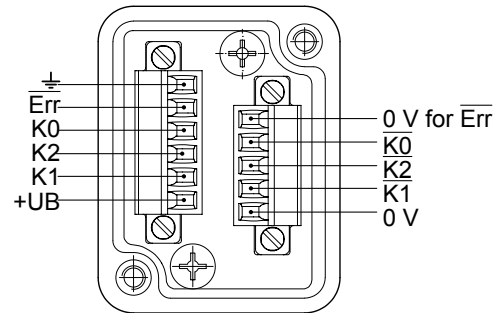
HOG 86 M T - View A

Connecting terminal in terminal box



HOG 86.2 M T - View A

Connecting terminal in terminal box



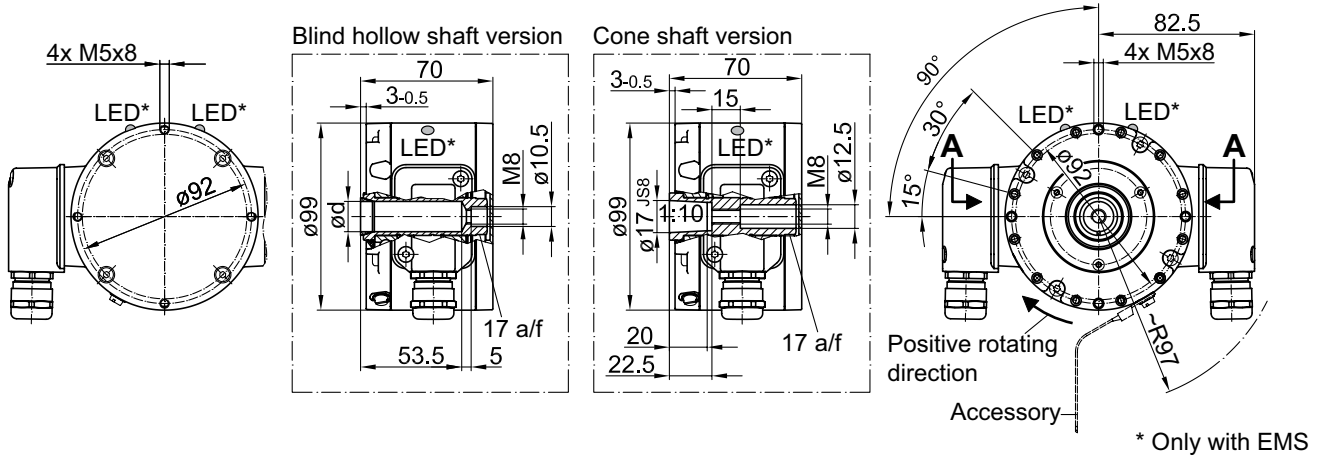
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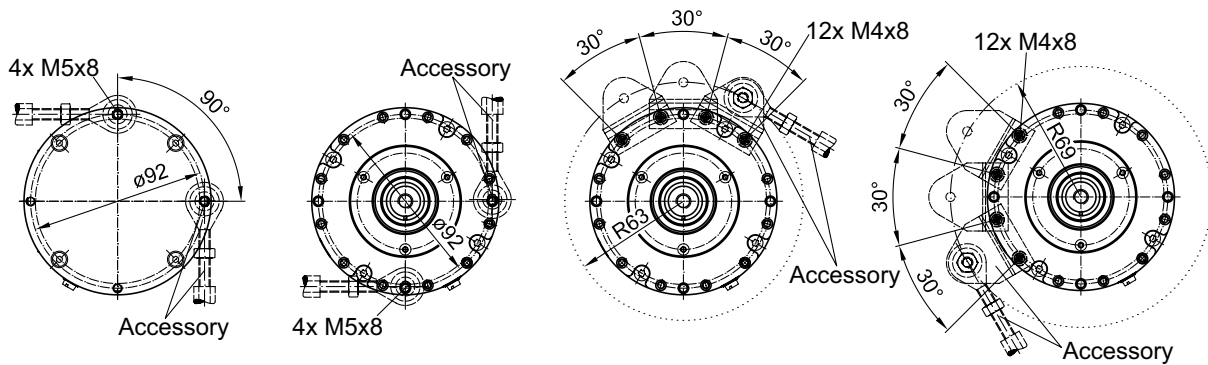
HOG 86 M

Dimensions

HOG 86 M T - Version with radial terminal boxes



HOG 86 M - Mounting possibilities



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