Baumer
Passion for Sensors

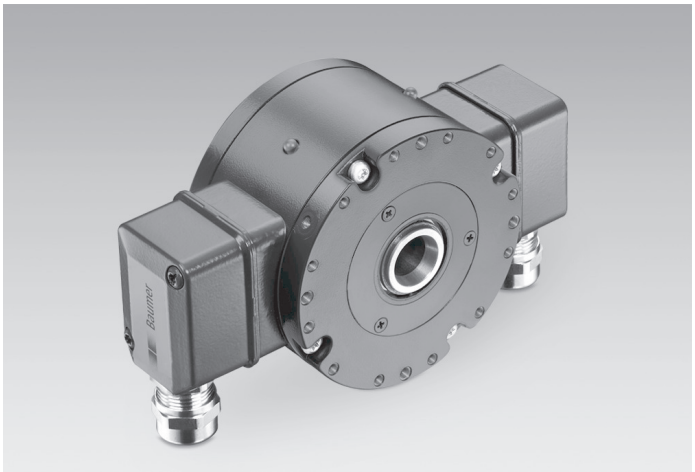
Incremental encoders

HOG 86 M

Redundant sensing, isolated blind hollow shaft ø12...16 mm, cone shaft ø17 mm
500...5000 pulses per revolution

Overview

- Robust, compact housing
- Two bearings with large distance, one at each end
- High shaft load up to 450 N
- Shaft insulation up to 2.8 kV
- Highest operating speed 10000 rpm
- Terminal boxes, turn by 180°
- Redundant sensing



HTL TTL® HÜBNER BERLIN A Baumer Brand

Technical data

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 ° ±20°
Duty cycle	45…55 % 40…60 % (>3072 pulses)
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 (option 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
Approval	CE UL/CSA

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
Material	Housing: aluminium Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses)
Resistance	IEC 60068-2-6 Vibration 20 g, 10...2000 Hz IEC 60068-2-27 Shock 250 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 IIIC T135°C Dc (dust)
Connection	2x terminal box
Weight approx.	1,4 kg

Optional

- Function control with EMS (Enhanced Monitoring System)

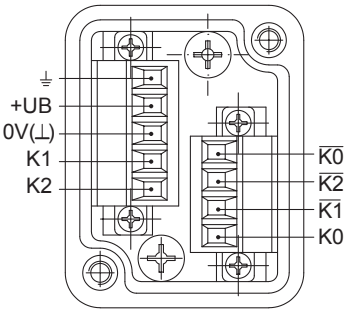
2020-03-11 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.

HOG 86 M

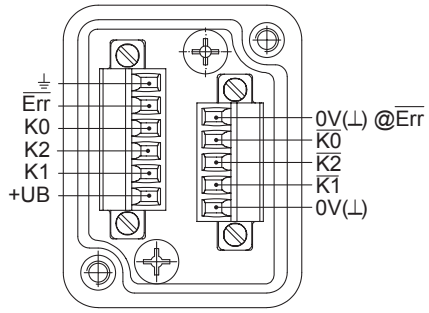
Redundant sensing, isolated blind hollow shaft ø12...16 mm, cone shaft ø17 mm
500...5000 pulses per revolution

Terminal assignment

View A *(see dimension)*
Connecting terminal terminal box



Option EMS: View A *(see dimension)*
Connecting terminal terminal box

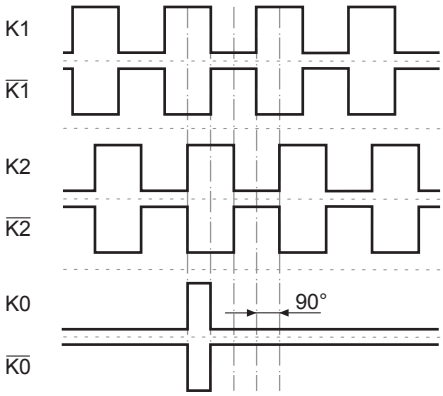


Terminal significance

+UB	Voltage supply
0V (⊥)	Ground
⏚	Earth ground (housing)
K1	Output signal channel 1
$\overline{K1}$	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
$\overline{K0}$	Zero pulse inverted
$\overline{Err}$	Error output (option EMS)
dnu	Do not use

Output signals

HTL/TTL
At positive rotating direction *(see dimension)*



Option EMS (Enhanced Monitoring System): Status LED / error output

Flash light red*	Error of signal sequenze, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output transistors (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)

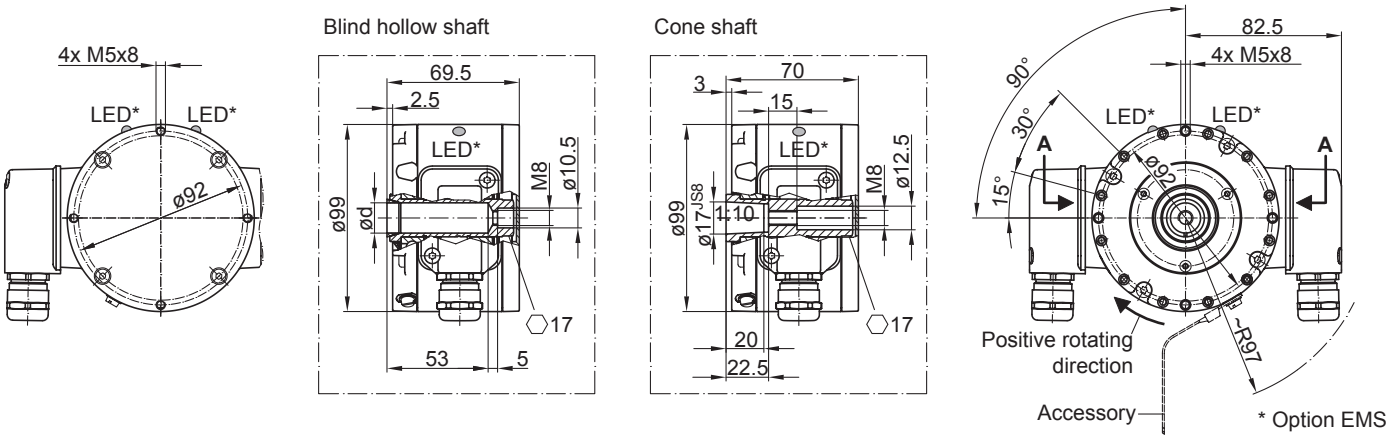
* Only at rotating device

2020-03-11 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.

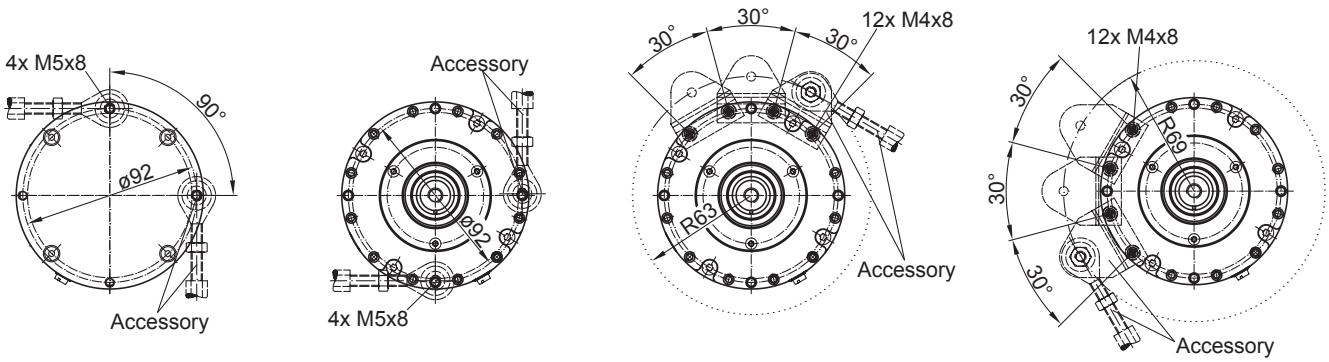
HOG 86 M

Redundant sensing, isolated blind hollow shaft ø12...16 mm, cone shaft ø17 mm
500...5000 pulses per revolution

Dimensions



HOG 86 M T



Mounting possibilities

2020-03-11 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.

HOG 86 M

Redundant sensing, isolated blind hollow shaft ø12...16 mm, cone shaft ø17 mm
500...5000 pulses per revolution

Ordering reference

	HOG86	##	M	T	H	#	DN	####	###
Product									
Incremental encoder	HOG86								
EMS - Enhanced Monitoring System									
Without EMS									
With EMS		.2							
Redundant sensing									
With redundant sensing			M						
Connection									
2x terminal boxes, radial				T					
Insulation									
Hybrid bearing					H				
Shaft diameter									
Blind hollow shaft ø12 mm, fit H7						2			
Blind hollow shaft ø12 mm, fit F6						9			
Blind hollow shaft ø16 mm, fit H7						6			
Blind hollow shaft ø16 mm, fit G7						8			
Cone shaft ø17 mm (1:10)						7			
Output signals									
K1, K2, K0 + inverted							DN		
Pulse number(1)									
500								500	
512								512	
1000								1000	
1024								1024	
1250								1250	
2048								2048	
2500								2500	
3072								3072	
4096								4096	
5000								5000	
Voltage supply / output stage									
9...30 VDC / output stage HTL with inverted signals									I
5 VDC / output stage TTL with inverted signals									T
9...30 VDC / output stage TTL with inverted signals									R

(1) Other pulse numbers on request.

2020-03-11 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.

HOG 86 M

Redundant sensing, isolated blind hollow shaft ø12...16 mm, cone shaft ø17 mm
500...5000 pulses per revolution

Accessories

Mounting accessories

11071906	Mounting kit earthing strap
11077087	Mounting and dismounting set
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
11043628	Torque arm M6, length 67...70 mm
11004078	Torque arm M6, length 120...130 mm (≥71 mm)
11002915	Torque arm M6, length 425...460 mm (≥131 mm)
11054917	Torque arm M6 insulated, length 67...70 mm
11072795	Torque arm M6 insulated, length 120...130 mm (≥71 mm)
11082677	Torque arm M6 insulated, length 425...460 mm (≥131 mm)
11071904	Mounting kit for torque arm size M6

Connectors and cables

	Sensor cable for encoders HEK 8

Diagnostic accessories

11075858	Analyzer for encoders HENQ 1100
11075880	Analyzer for encoders HENQ 1100 B

2020-03-11 The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change.