

HOG 9 G

Twin encoder with two electrically separated systems

Blind hollow shaft or cone shaft 300...5000 pulses per revolution

Overview

- Twin encoder featuring two separate systems
- TTL output driver for cable length up to 550 m
- Hybrid bearing for extended service life



HUBNER
BERLIN
A Baumer Brand

Technical data

Technical data - electrical ratings

| | |
|-----------------------|--|
| Voltage supply | 5 VDC ±5 % 9...30 VDC |
| Consumption w/o load | ≤100 mA |
| Pulses per revolution | 300 ... 5000 |
| Phase shift | 90 ° ±20° |
| Duty cycle | 40...60 % |
| Reference signal | Zero pulse, width 90° |
| 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 |
| Sensing method | Optical |
| Interference immunity | EN 61000-6-2 |
| Emitted interference | EN 61000-6-3 |
| Approval | CE UL approval / E217823 |

Technical data - mechanical design

| | |
|---------------|---|
| Size (flange) | ø97 mm |
| Shaft type | ø16 mm (blind hollow shaft) ø17 mm (cone shaft 1:10) |

Technical data - mechanical design

| | |
|-------------------------|---|
| Admitted shaft load | ≤400 N axial ≤500 N radial |
| Protection EN 60529 | IP 56 |
| Operating speed | ≤10000 rpm (mechanical) |
| Operating torque typ. | 6 Ncm |
| Rotor moment of inertia | 160 gcm ² |
| Material | Housing: aluminium die-cast Shaft: stainless steel |
| Operating temperature | -30...+100 °C -25...+100 °C (>3072 pulses) |
| Resistance | IEC 60068-2-6 Vibration 17 g, 10-2000 Hz IEC 60068-2-27 Shock 275 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) (only with option ATEX) |
| Connection | 2x flange connector M23, 12-pin |
| Weight approx. | 1,1 kg |

Optional

- Function control with EMS (Enhanced Monitoring System)

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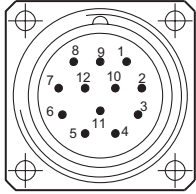
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Terminal assignment

View A (see dimension)

Assignment flange connector

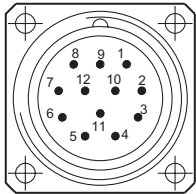


Flange connector M23, male, 12-pin, clockwise (CW)

| Pin | Assignment |
|-----|-----------------|
| 1 | $\overline{K2}$ |
| 2 | dnu |
| 3 | K0 |
| 4 | $\overline{K0}$ |
| 5 | K1 |
| 6 | $\overline{K1}$ |
| 7 | dnu |
| 8 | K2 |
| 9 | dnu |
| 10 | 0V (\perp) |
| 11 | dnu |
| 12 | +UB |

Option EMS: View A (see dimension)

Assignment flange connector



Flange connector M23, male, 12-pin, clockwise (CW)

| Pin | Assignment |
|-----|-----------------------------------|
| 1 | $\overline{K2}$ |
| 2 | dnu |
| 3 | K0 |
| 4 | $\overline{K0}$ |
| 5 | K1 |
| 6 | $\overline{K1}$ |
| 7 | \overline{Err} |
| 8 | K2 |
| 9 | 0V (\perp) @ \overline{Err} |
| 10 | 0V (\perp) |
| 11 | dnu |
| 12 | +UB |

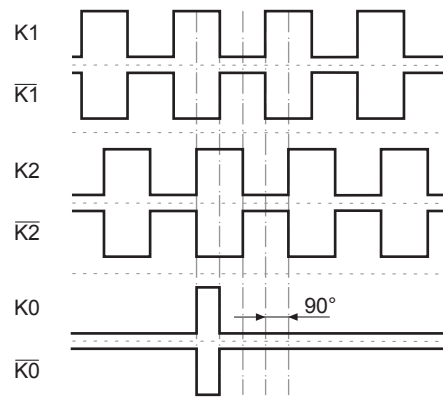
Terminal significance

| | |
|------------------|--|
| +UB | Voltage supply |
| 0V (\perp) | Ground |
| 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 sequence, 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) |

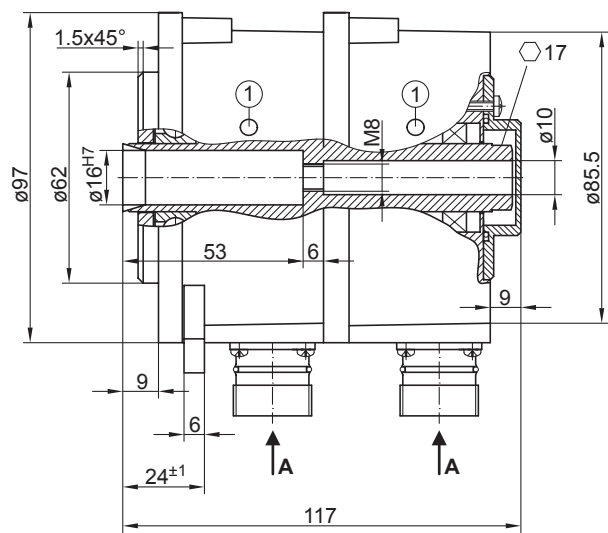
* Only at rotating device

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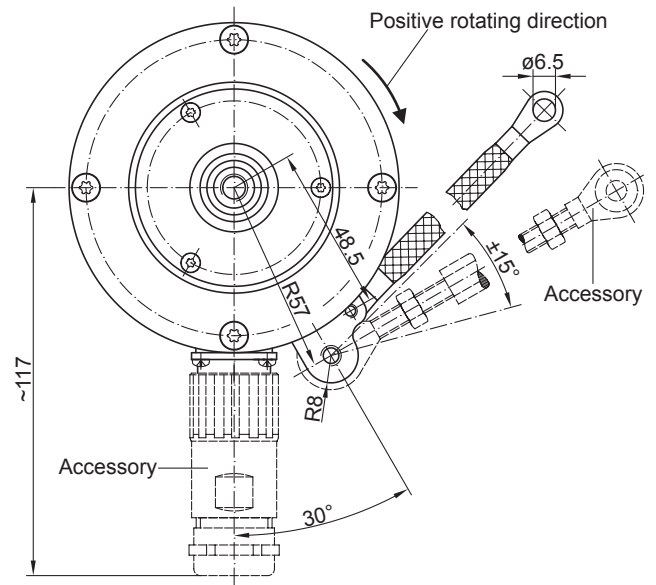
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Blind hollow shaft or cone shaft 300...5000 pulses per revolution

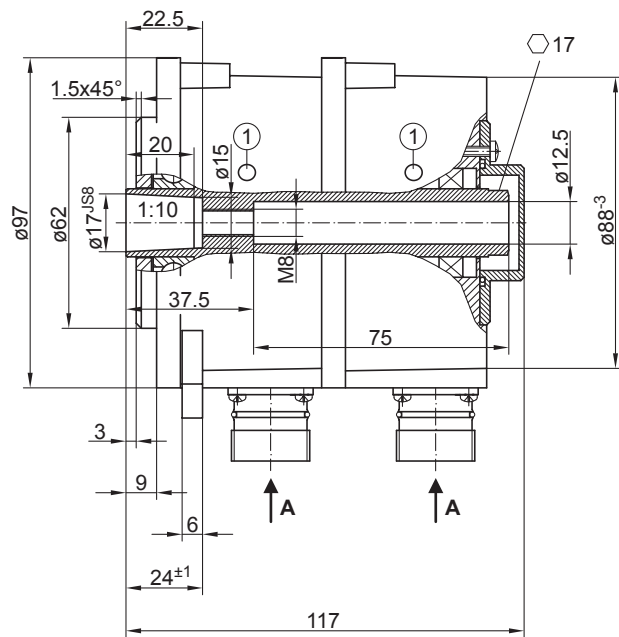
Dimensions



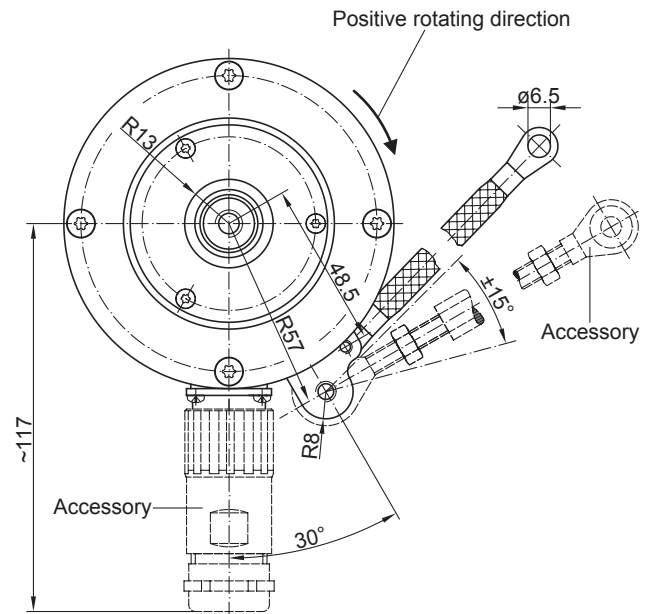
① Status LED (option EMS)



Blind hollow shaft



① Status LED (option EMS)



Cone shaft

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Ordering reference

| | HOG9 | ## | G | DN | #### | ### | / | DN | #### | ### | ##### |
|---|------|----|---|----|------|-----|---|----|------|-----|-------|
| Product | | | | | | | | | | | |
| Incremental encoder | HOG9 | | | | | | | | | | |
| EMS - Enhanced Monitoring System | | | | | | | | | | | |
| Without EMS | | | | | | | | | | | |
| With EMS | | .2 | | | | | | | | | |
| Redundant encoder | | | | | | | | | | | |
| With redundant encoder | | | G | | | | | | | | |
| Output signals | | | | | | | | | | | |
| K1, K2, K0 | | | | DN | | | | | | | |
| Pulse number⁽¹⁾ | | | | | | | | | | | |
| 300 | | | | | 300 | | | | | | |
| 500 | | | | | 500 | | | | | | |
| 512 | | | | | 512 | | | | | | |
| 1000 | | | | | 1000 | | | | | | |
| 1024 | | | | | 1024 | | | | | | |
| 1200 | | | | | 1200 | | | | | | |
| 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 | | | | | | TTL | | | | | |
| 9...30 VDC / output stage TTL with inverted signals | | | | | | R | | | | | |
| Output signals (G) | | | | | | | | | | | |
| K1, K2, K0 | | | | | | | | DN | | | |
| Pulse number (G)⁽¹⁾ | | | | | | | | | | | |
| 300 | | | | | | | | | 300 | | |
| 500 | | | | | | | | | 500 | | |
| 512 | | | | | | | | | 512 | | |
| 1000 | | | | | | | | | 1000 | | |
| 1024 | | | | | | | | | 1024 | | |
| 1200 | | | | | | | | | 1200 | | |
| 2048 | | | | | | | | | 2048 | | |
| 2500 | | | | | | | | | 2500 | | |
| 3072 | | | | | | | | | 3072 | | |
| 4096 | | | | | | | | | 4096 | | |
| 5000 | | | | | | | | | 5000 | | |
| Voltage supply / output stage (G) | | | | | | | | | | | |
| 9...30 VDC / output stage HTL with inverted signals | | | | | | | | | | I | |
| 5 VDC / output stage TTL with inverted signals | | | | | | | | | | TTL | |
| 9...30 VDC / output stage TTL with inverted signals | | | | | | | | | | R | |
| Shaft diameter | | | | | | | | | | | |
| Blind hollow shaft \varnothing 16 mm | | | | | | | | | | | 16H7 |
| Cone shaft \varnothing 17 mm (1:10) | | | | | | | | | | | 17K |

(1) Other pulse numbers on request.

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Accessories

Mounting accessories

| | |
|----------|---|
| 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) |
| 11077197 | Mounting kit for torque arm size M6 and earthing strap |
| 11081744 | Mounting and dismounting kit for blind hollow shaft |
| 11084868 | Mounting and dismounting kit for cone shaft |

Connectors and cables

| | |
|----------|---|
| | Sensor cable for encoders HEK 8 |
| 11068577 | Mating connector M23, solder version, 12-pin, CCW |

Diagnostic accessories

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