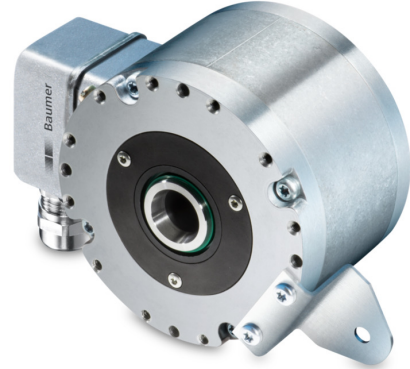


## HOG 86E

Insulated blind hollow shaft  $\varnothing 12 \dots 16$  mm, cone shaft  $\varnothing 17$  mm  
500...2500 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
- TTL output driver for cable length up to 550 m
- Terminal box, turn by 180°



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A Baumer Brand

### Technical data

#### Technical data - electrical ratings

|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| Voltage supply        | 9...30 VDC<br>5 VDC $\pm 5$ %                                    |
| Consumption w/o load  | $\leq 100$ mA                                                    |
| Pulses per revolution | 500 ... 2500                                                     |
| Phase shift           | $90^\circ \pm 20^\circ$                                          |
| Duty cycle            | 45...55 %                                                        |
| Reference signal      | Zero pulse, width $90^\circ$                                     |
| Sensing method        | Optical                                                          |
| Output frequency      | $\leq 170$ kHz<br>$\leq 300$ kHz (on request)                    |
| Output signals        | K1, K2, K0 + inverted                                            |
| Output stages         | HTL-P (power linedriver)<br>TTL/RS422                            |
| Shaft insulation      | Suitable up to 2.8 kV                                            |
| Transmission length   | $\leq 350$ m at 100 kHz (HTL-P)<br>$\leq 550$ m at 100 kHz (TTL) |
| Interference immunity | EN 61000-6-2                                                     |
| Emitted interference  | EN 61000-6-3                                                     |
| Approval              | CE<br>UL approval / E217823                                      |

#### Technical data - mechanical design

|               |                                                                                            |
|---------------|--------------------------------------------------------------------------------------------|
| Size (flange) | $\varnothing 99$ mm                                                                        |
| Shaft type    | $\varnothing 12 \dots 16$ mm (blind hollow shaft)<br>$\varnothing 17$ mm (cone shaft 1:10) |

#### Technical data - mechanical design

|                         |                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------|
| Admitted shaft load     | $\leq 350$ N axial<br>$\leq 450$ N radial                                                                  |
| Motor shaft tolerance   | 0.2 mm radial                                                                                              |
| Protection EN 60529     | IP 66                                                                                                      |
| Operating speed         | $\leq 10000$ rpm (mechanical)                                                                              |
| Operating torque        | $\leq 6$ Ncm                                                                                               |
| Rotor moment of inertia | 160 gcm <sup>2</sup>                                                                                       |
| Material                | Housing: aluminium<br>Shaft: stainless steel                                                               |
| Operating temperature   | $-40 \dots +100^\circ\text{C}$                                                                             |
| Resistance              | IEC 60068-2-6<br>Vibration 20 g, 10-2000 Hz<br>IEC 60068-2-27<br>Shock 250 g, 6 ms                         |
| Corrosion protection    | IEC 60068-2-52 Salt mist<br>for ambient conditions C4 according to<br>ISO 12944-2<br>(only with option C4) |
| Explosion protection    | II 3 G Ex ec IIC T4 Gc (gas)<br>II 3 D Ex tc IIIC T135°C Dc (dust)<br>(only with option ATEX)              |
| Connection              | Terminal box<br>Flange connector M23, 12-pin                                                               |
| Weight approx.          | 1.3 kg                                                                                                     |

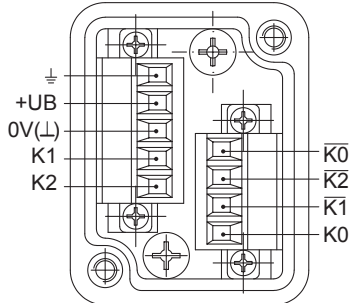
## HOG 86E

Insulated blind hollow shaft  $\varnothing 12 \dots 16$  mm, cone shaft  $\varnothing 17$  mm  
500...2500 pulses per revolution

### Terminal assignment

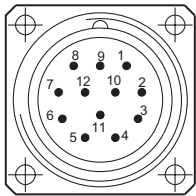
#### View A (see dimension)

Connecting terminal terminal box



#### View B (see dimension)

Assignment flange connector



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

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

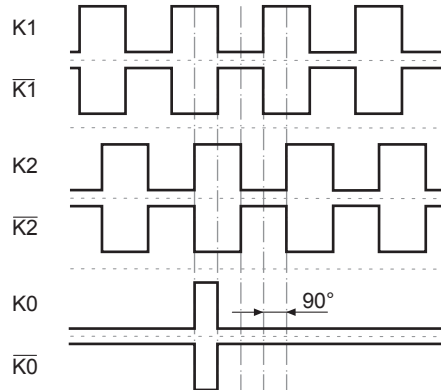
### Terminal significance

|                 |                                                      |
|-----------------|------------------------------------------------------|
| +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                                  |
| dnu             | Do not use                                           |

### Output signals

#### HTL/TTL

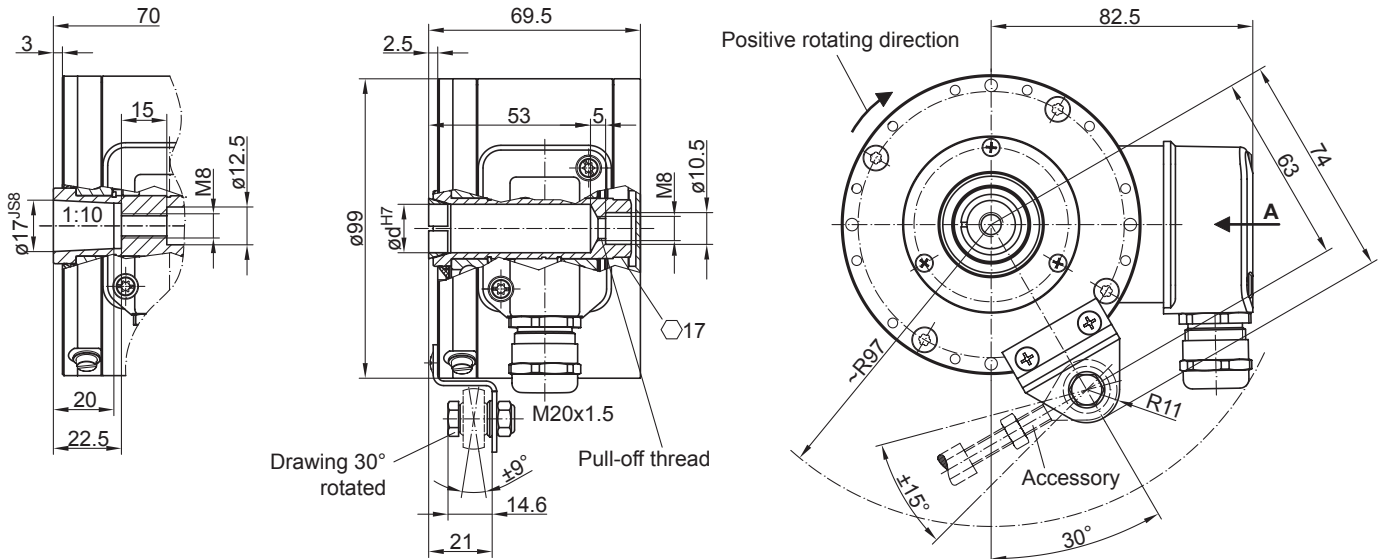
At positive rotating direction (see dimension)



## HOG 86E

Insulated blind hollow shaft  $\varnothing 12 \dots 16$  mm, cone shaft  $\varnothing 17$  mm  
500...2500 pulses per revolution

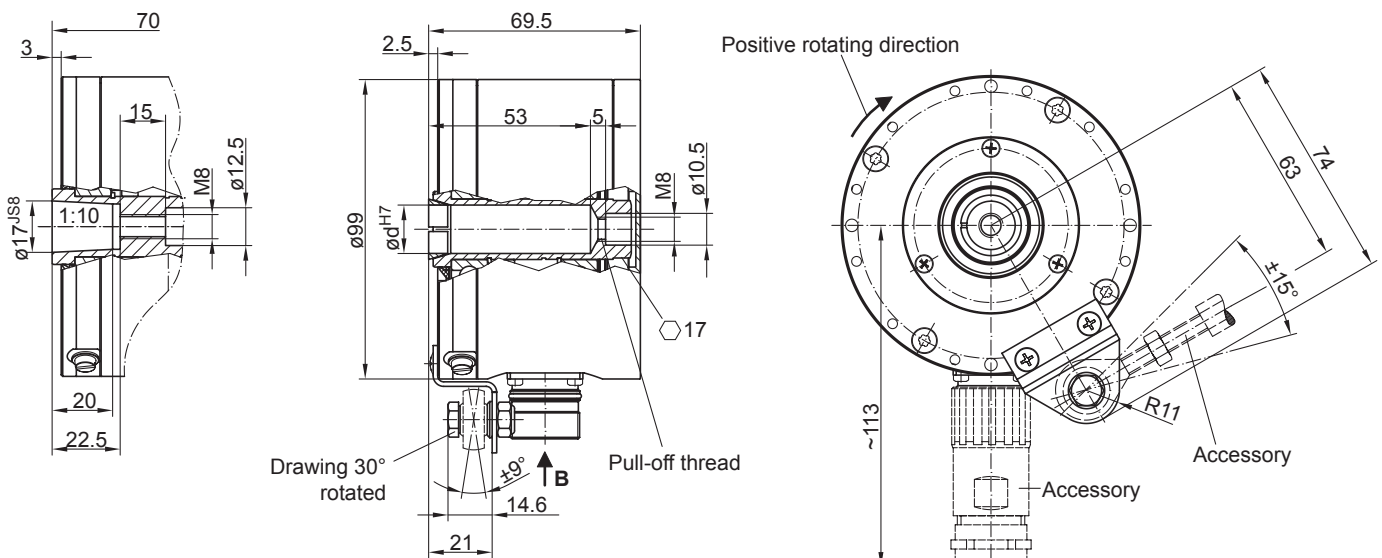
### Dimensions



Cone shaft

Blind hollow shaft

HOG 86E T - Version mit radialem Klemmenkasten



Cone shaft

Blind hollow shaft

HOG 86E F - Version with radial flange connector M23

## HOG 86E

 Insulated blind hollow shaft  $\varnothing 12 \dots 16$  mm, cone shaft  $\varnothing 17$  mm  
 500...2500 pulses per revolution

### Ordering reference

|                                                             | HOG86E | # | P | # | DN | #### | ### | ## |
|-------------------------------------------------------------|--------|---|---|---|----|------|-----|----|
| <b>Product</b>                                              |        |   |   |   |    |      |     |    |
| Incremental encoder                                         | HOG86E |   |   |   |    |      |     |    |
| <b>Connection</b>                                           |        |   |   |   |    |      |     |    |
| 1x terminal box, radial                                     |        |   | T |   |    |      |     |    |
| 1x flange connector M23, radial                             |        |   | F |   |    |      |     |    |
| <b>Insulation</b>                                           |        |   |   |   |    |      |     |    |
| PA insulated                                                |        |   | P |   |    |      |     |    |
| <b>Shaft diameter</b>                                       |        |   |   |   |    |      |     |    |
| Blind hollow shaft $\varnothing 12$ mm, fit H7              |        |   |   | 2 |    |      |     |    |
| Blind hollow shaft $\varnothing 16$ mm, fit H7              |        |   |   | 6 |    |      |     |    |
| Blind hollow shaft $\varnothing 12$ mm, fit F6              |        |   |   | 9 |    |      |     |    |
| Blind hollow shaft $\varnothing 16$ mm, fit G7              |        |   |   | 8 |    |      |     |    |
| Cone shaft $\varnothing 17$ mm (1:10)                       |        |   |   | 7 |    |      |     |    |
| <b>Output signals</b>                                       |        |   |   |   |    |      |     |    |
| K1, K2, K0 + inverted                                       |        |   |   |   | DN |      |     |    |
| <b>Pulse number<sup>(1)</sup></b>                           |        |   |   |   |    |      |     |    |
| 500                                                         |        |   |   |   |    | 500  |     |    |
| 512                                                         |        |   |   |   |    | 512  |     |    |
| 1000                                                        |        |   |   |   |    | 1000 |     |    |
| 1024                                                        |        |   |   |   |    | 1024 |     |    |
| 1250                                                        |        |   |   |   |    | 1250 |     |    |
| 2048                                                        |        |   |   |   |    | 2048 |     |    |
| 2500                                                        |        |   |   |   |    | 2500 |     |    |
| <b>Voltage supply / output stage</b>                        |        |   |   |   |    |      |     |    |
| 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   |    |
| <b>Corrosion protection</b>                                 |        |   |   |   |    |      |     |    |
| Without                                                     |        |   |   |   |    |      |     |    |
| Suitable for ambient conditions C4 according to ISO 12944-2 |        |   |   |   |    |      |     | C4 |

(1) Other pulse numbers on request.

### Accessories

#### 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 ( $\geq 71$ mm)            |
| 11002915 | Torque arm M6, length 425...460 mm ( $\geq 131$ mm)           |
| 11054917 | Torque arm M6 insulated, length 67...70 mm                    |
| 11072795 | Torque arm M6 insulated, length 120...130 mm ( $\geq 71$ mm)  |
| 11082677 | Torque arm M6 insulated, length 425...460 mm ( $\geq 131$ mm) |
| 11071904 | Mounting kit for torque arm size M6                           |