

# Combination

Encoder with integrated centrifugal switch

Insulated blind hollow shaft  $\varnothing 16$  mm, cone shaft  $\varnothing 17$  mm

500...5000 pulses per revolution

HOG 86 + FSL



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## Technical data - electrical ratings

Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

## Technical data - electrical ratings (encoder)

Voltage supply	9...30 VDC 5 VDC $\pm 5$ %
Consumption w/o load	$\leq 100$ 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 $90^\circ$
Output frequency	$\leq 120$ kHz $\leq 300$ kHz (on request)
Output signals	K1, K2, K0 + inverted Error output (only EMS)
Output stages	HTL-P (power linedriver) TTL/RS422
Sensing method	Optical
Shaft insulation	2.8 kV
Transmission length	$\leq 350$ m at 100 kHz (HTL-P) $\leq 550$ m at 100 kHz (TTL)

## Technical data - electrical ratings (centrifugal switch)

Switching accuracy	$\pm 4$ % ( $\Delta n = 2$ rpm/s); $\leq +20$ % ( $\Delta n = 1500$ rpm/s)
Switching deviation cw-ccw $\leq 3$ % rotation	
Switching hysteresis	$\approx 40$ % of switching speed
Switching outputs	1 output, speed control
Output switching capacity	$\leq 6$ A / 230 VAC; $\leq 1$ A / 125 VDC
Minimum switching current	50 mA

## Features

- Mechanical speed monitoring based on centrifugal force
- Robust, compact housing
- Two-sided bearing system with optimal bearing spacing
- Shaft load up to 450 N, shaft insulation up to 2.8 kV
- Terminal boxes, turn by  $180^\circ$

## Optional

- Hybrid bearings for 3 times longer lifetime
- Function control by EMS (Enhanced Monitoring System)
- Redundant sensing with two terminal boxes

## Technical data - mechanical design

Size (flange)	$\varnothing 105$ mm
Shaft type	$\varnothing 16$ mm (blind hollow shaft) $\varnothing 17$ mm (cone shaft 1:10)
Shaft loading	$\leq 350$ N axial $\leq 450$ N radial
Protection DIN EN 60529	IP 66
Speed (n)	$\leq 1.25 \cdot ns$
Range of switching speed (ns)	850...4500 rpm ( $\Delta n = 2$ rpm/s)
Operating torque typ.	6 Ncm
Rotor moment of inertia	200 gcm <sup>2</sup>
Materials	Housing: aluminium, coated Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C ( $> 3072$ pulses per revolution)
Resistance	IEC 60068-2-6 Vibration 5 g, 10-2000 Hz IEC 60068-2-27 Shock 50 g, 11 ms
Corrosion protection	IEC 60068-2-52 Salt mist Complies to ISO 12944-5:1998 Protective paint systems (C4)
Connection	2x terminal box 3x terminal box (with option M)
Weight approx.	1.9 kg, 2 kg (with option M)
Approval	CE



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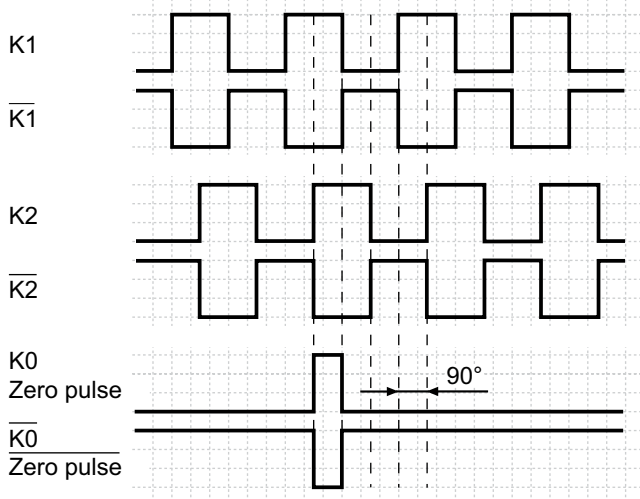
Insulated blind hollow shaft  $\varnothing 16$  mm, cone shaft  $\varnothing 17$  mm

500...5000 pulses per revolution

## HOG 86 + FSL

### Output signals

At positive rotating direction



### 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

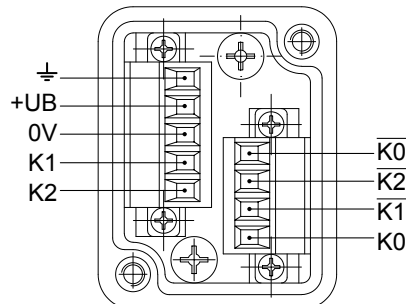
#### Diagnostic accessories

HENQ 1100 Analyzer for encoders

### Terminal assignment

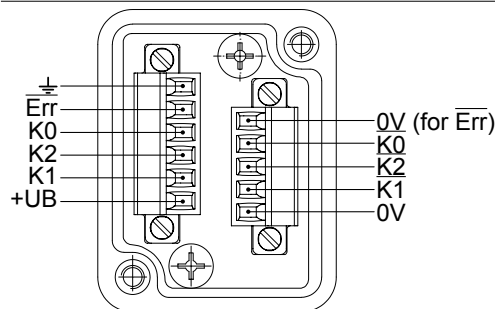
#### View A

Connecting terminal in terminal box HOG 86



#### Option EMS: View A

Connecting terminal in terminal box HOG 86.2



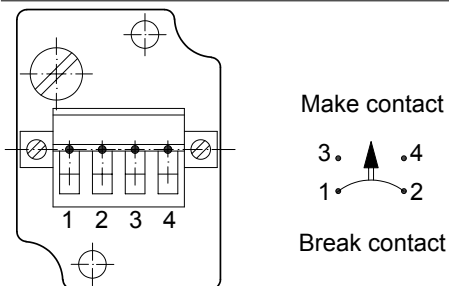
#### LED status / Error output

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

#### View B

Connecting terminal mechanical centrifugal switch FSL



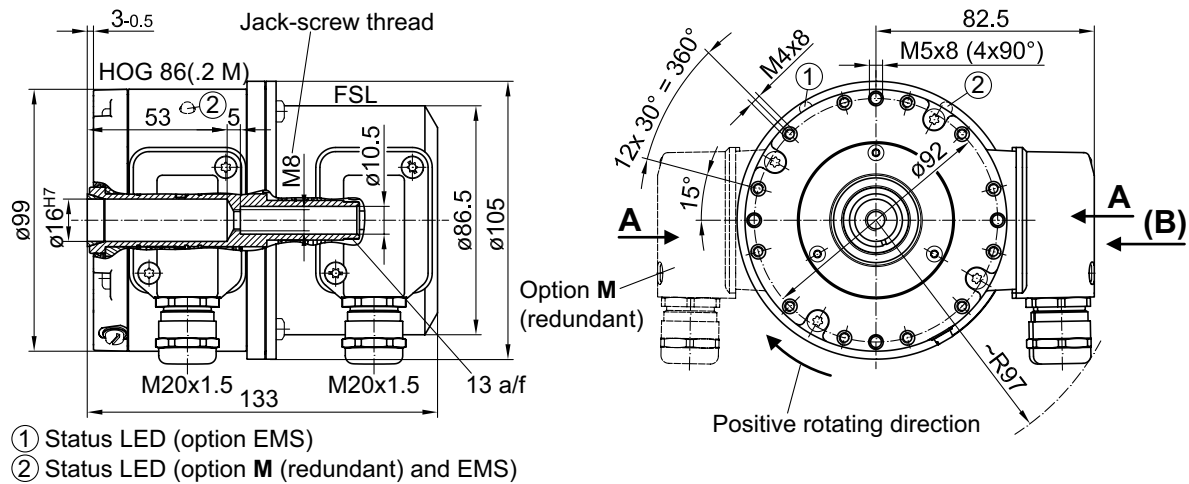
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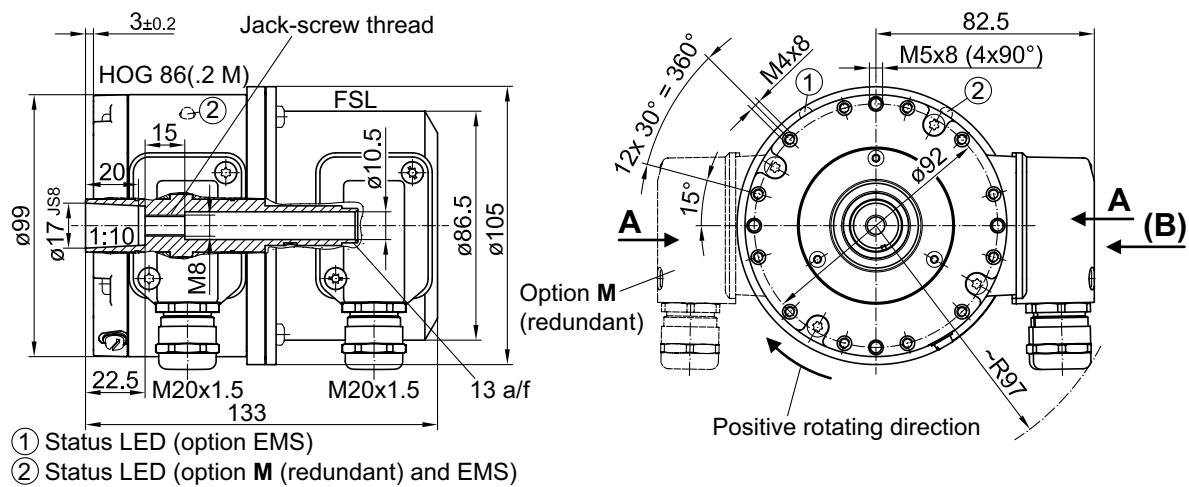
HOG 86 + FSL

## Dimensions

### Blind hollow shaft



### Cone shaft



### Mounting possibilities

