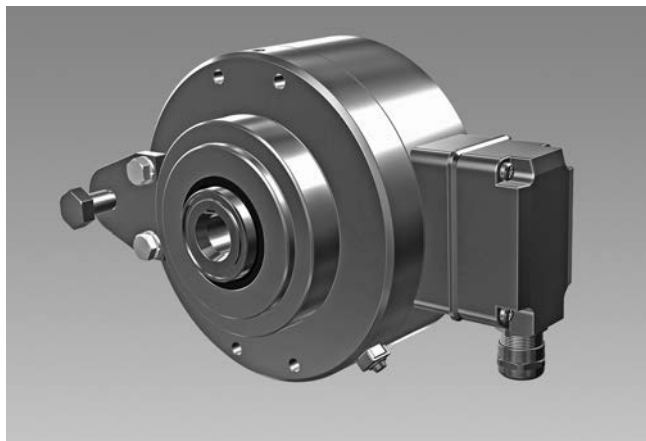


# Incremental encoders

## Blind hollow shaft $\varnothing 20...38$ mm

### 1024...8192 pulses per revolution

## HOG 165



HOG 165

### Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC $\pm 5$ % 9...26 VDC
Consumption w/o load	$\leq 100$ mA
Pulses per revolution	1024...8192
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Optical
Output frequency	$\leq 120$ kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL TTL/RS422
Shaft insulation	2.8 kV
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approvals	CE, UL approval / E256710

### Features

- Extremely high resistance to shock and vibrations
- Output stage HTL or TTL
- High protection IP 67, shaft insulation up to 2.8 kV
- Surface protection scratch and impact resistant
- Corrosion protection acc. to 12944-5:1998 (C5M)
- Large terminal box, turn by  $180^\circ$

### Optional

- Large torque support plate

### Technical data - mechanical design

Size (flange)	$\varnothing 165$ mm
Shaft type	$\varnothing 20...38$ mm (blind hollow shaft)
Admitted shaft load	$\leq 500$ N axial $\leq 650$ N radial
Protection DIN EN 60529	IP 67
Operating speed	$\leq 6000$ rpm (mechanical)
Operating torque typ.	15 Ncm
Rotor moment of inertia	4.9 kgcm <sup>2</sup>
Materials	Housing: aluminium alloy Shaft: stainless steel
Operating temperature	$-40...+100$ °C
Resistance	IEC 60068-2-6 Vibration 20 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C5-M (CX) 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	Terminal box
Weight approx.	6.1 kg

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



# Incremental encoders

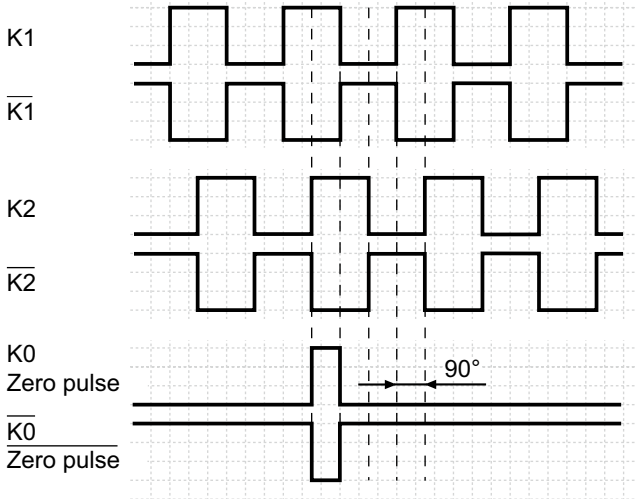
## Blind hollow shaft $\varnothing 20 \dots 38$ mm

### 1024...8192 pulses per revolution

## HOG 165

### Output signals

At positive rotating direction

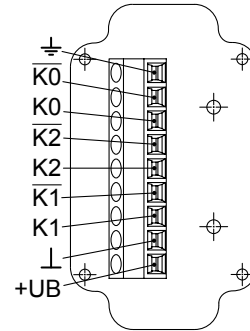


### Terminal significance

+UB	Voltage supply (for the device)
$\perp$ ; $\downarrow$ ; GND; 0 V	Ground (for the signals)
$\perp$ ; $\nearrow$	Earth ground (housing)
K1; A; A+	Output signal channel 1
$\overline{K1}$ ; $\overline{A}$ ; A-	Output signal channel 1 inverted
K2; B; B+	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$ ; $\overline{B}$ ; B-	Output signal channel 2 (offset by 90° to channel 1) inverted
K0; C; R; R+	Zero pulse (reference signal)
$\overline{K0}$ ; $\overline{C}$ ; $\overline{R}$ ; R-	Zero pulse (reference signal) inverted
dnu	Do not use

### Terminal assignment

View A - Connecting terminal terminal box



### Accessories

#### Connectors and cables

HEK 8 Sensor cable for encoders

#### Mounting accessories

11054922	Torque arm M12, length 155 (-10/+15) mm
11054921	Torque arm M12, length 190 (-10/+15) mm
11072741	Torque arm M12, length 480-540 mm (shortenable $\geq 200$ mm)
11054924	Torque arm M12 insulated, length 155 (-10/+15) mm
11072723	Torque arm M12 insulated, length 480-540 mm (shortenable $\geq 200$ mm)
11069336	Mounting kit for torque arm size M12 and an earthing strap

#### Diagnostic accessories

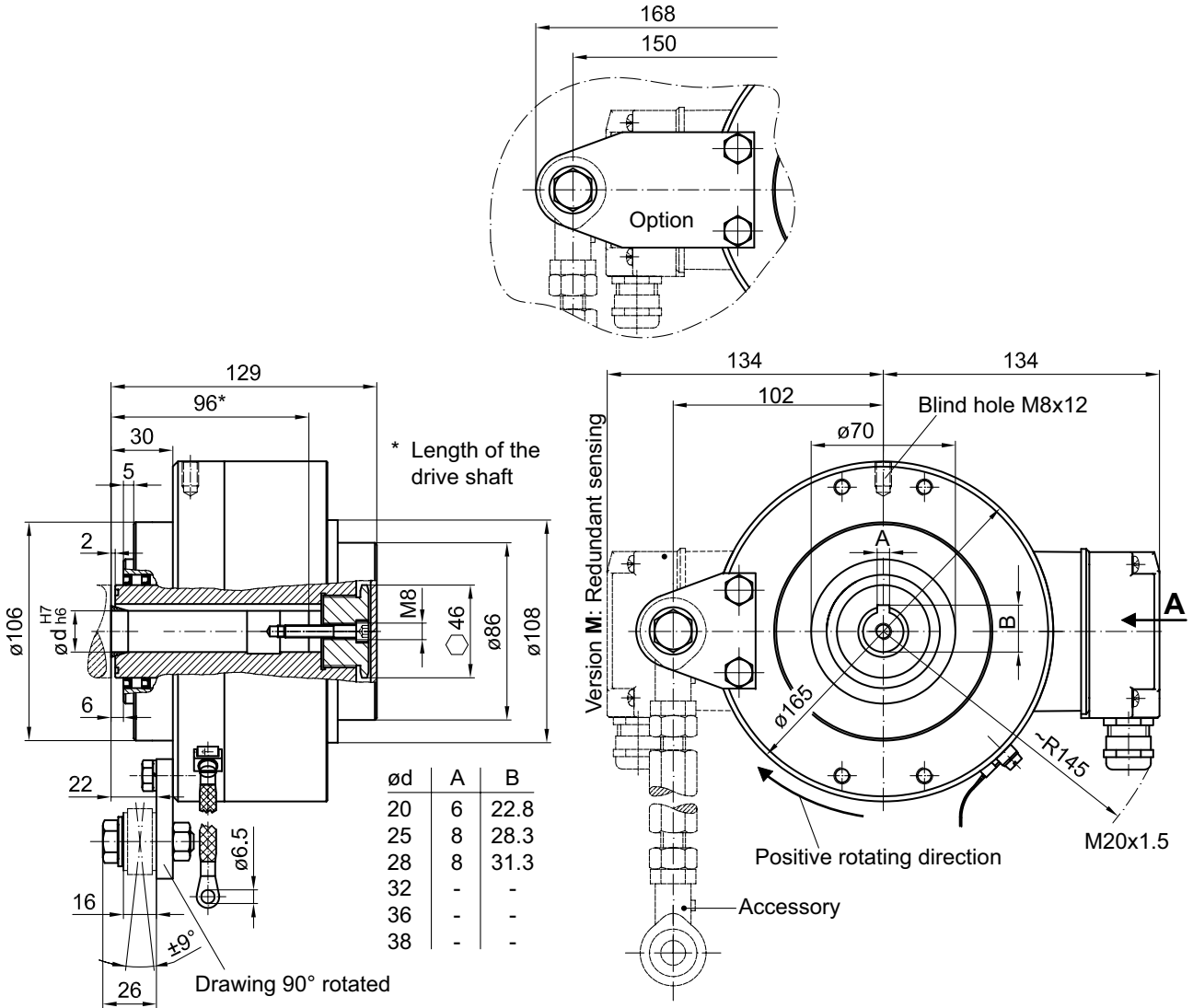
11075858 Analyzer for encoders HENQ 1100

# Incremental encoders

Blind hollow shaft  $\varnothing 20...38$  mm  
1024...8192 pulses per revolution

HOG 165

## Dimensions



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