

# Encoders without bearing

## Incremental encoder with optical sensing

Hollow shaft  $\varnothing 65$  to  $\varnothing 120$  mm, resolution 250...4000 pulses

### HG 18, HG 22



HG 18

#### Technical data - electrical ratings

Voltage supply	5 VDC $\pm 5\%$ 9...26 VDC
Consumption w/o load	$\leq 100$ mA
Phase shift	$90^\circ \pm 20^\circ$
Scan ratio	40...60 %
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Optical
Output frequency	$\leq 120$ kHz
Output signals	K1, K2, K0 + inverted
Output circuit	TTL (RS422) HTL (power linedriver)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4

#### HG 18

Resolution (steps/turn)	250...2500
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#### HG 22

Resolution (steps/turn)	720...4000
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#### Features

- Large axial and radial displacement of the shaft permitted
- Fit for high operating speed
- Robust and free from wear
- Resolution max. 4000 pulses
- Logic level TTL with regulator UB 9...26 VDC
- Logic level HTL with power linedriver

#### Optional

- Electrical connection with flange socket and mating connector
- Redundant sensing possible (version M)

#### Technical data - mechanical design

Operating speed	$\leq 12000$ rpm
Material	Housing: aluminium
Operating temperature	$-30...+70$ °C
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Axial tolerance	$-0.5...1.5$ mm (with zero pulse) $-0.5...2.5$ mm (without zero pulse)
Radial tolerance	$\pm 0.05$ mm (with zero pulse) $\pm 0.2$ mm (without zero pulse)
Connection	Terminal box
Approval	CE conform

#### HG 18

Dimensions (flange)	$\varnothing 186$ mm
Shaft	$\varnothing 65...85$ mm hollow shaft
Protection DIN EN 60529	IP 54
Rotor moment of inertia	21.2 kgcm <sup>2</sup>
Weight approx.	4.2 kg

#### HG 22

Dimensions (flange)	$\varnothing 227$ mm
Shaft	$\varnothing 90...120$ mm hollow shaft
Protection DIN EN 60529	IP 44
Rotor moment of inertia	67.3 kgcm <sup>2</sup>
Weight approx.	5.8 kg

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#### Part number

HG 18

HG 22

				<u>Voltage supply / signals</u>	
				CI 9...26 VDC / output circuit HTL (C) with inverted signals	
				TTL 5 VDC / output circuit TTL with inverted signals	
				R 9...26 VDC / output circuit TTL with inverted signals (for output signals DN)	
				<u>See part number (pulses)</u>	
				<u>Output signals</u>	
				D K1, K2	
				DN K1, K2, K0	
				<u>Redundant sensing</u>	
				- Without redundant sensing	
				M with redundant sensing	

				<u>Voltage supply / signals</u>	
				CI 9...26 VDC / output circuit HTL (C) with inverted signals	
				TTL 5 VDC / output circuit TTL with inverted signals	
				R 9...26 VDC / output circuit TTL with inverted signals (for output signals DN)	
				<u>See part number (pulses)</u>	
				<u>Output signals</u>	
				D K1, K2	
				DN K1, K2, K0	
				<u>Redundant sensing</u>	
				- Without redundant sensing	
				M with redundant sensing	

#### Part number (pulses)

250	512	1000	1080	2048
500	600	1024	1200	2500

Other pulse numbers upon request.

#### Accessories

##### Connectors and cables

HEK 8	Sensor cable for encoders
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# Encoders without bearing

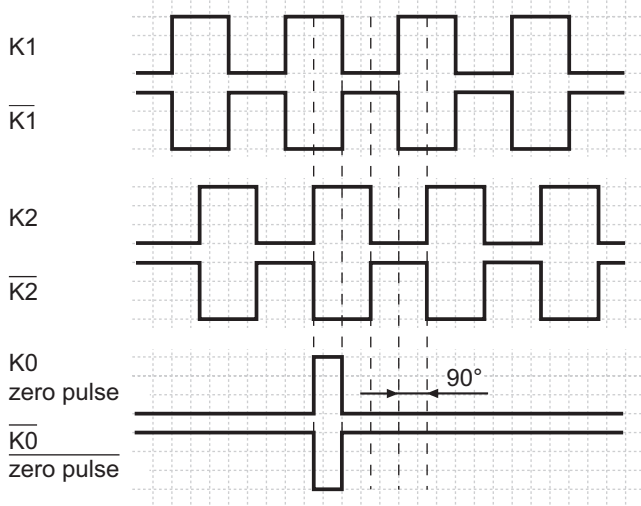
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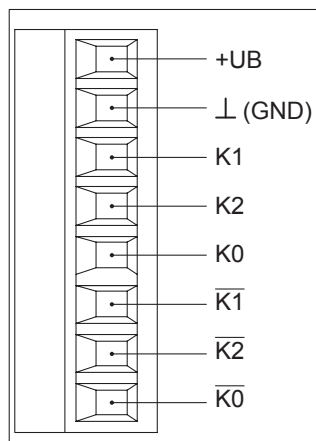
## Output signals

at positive rotating direction



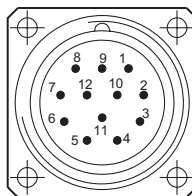
## Terminal assignment

View A - Connecting terminal in terminal box



View B - Option: Flange socket, male contacts, clockwise

Male	Assignment
Pin 1	$\overline{K2}$ (K2 inv.)
Pin 2	n.c.
Pin 3	K0 (zero pulse)
Pin 4	$\overline{K0}$ (zero pulse inv.)
Pin 5	K1
Pin 6	$\overline{K1}$ (K1 inv.)
Pin 7	n.c.
Pin 8	K2
Pin 9	n.c.
Pin 10	GND
Pin 11	n.c.
Pin 12	+UB



# Encoders without bearing

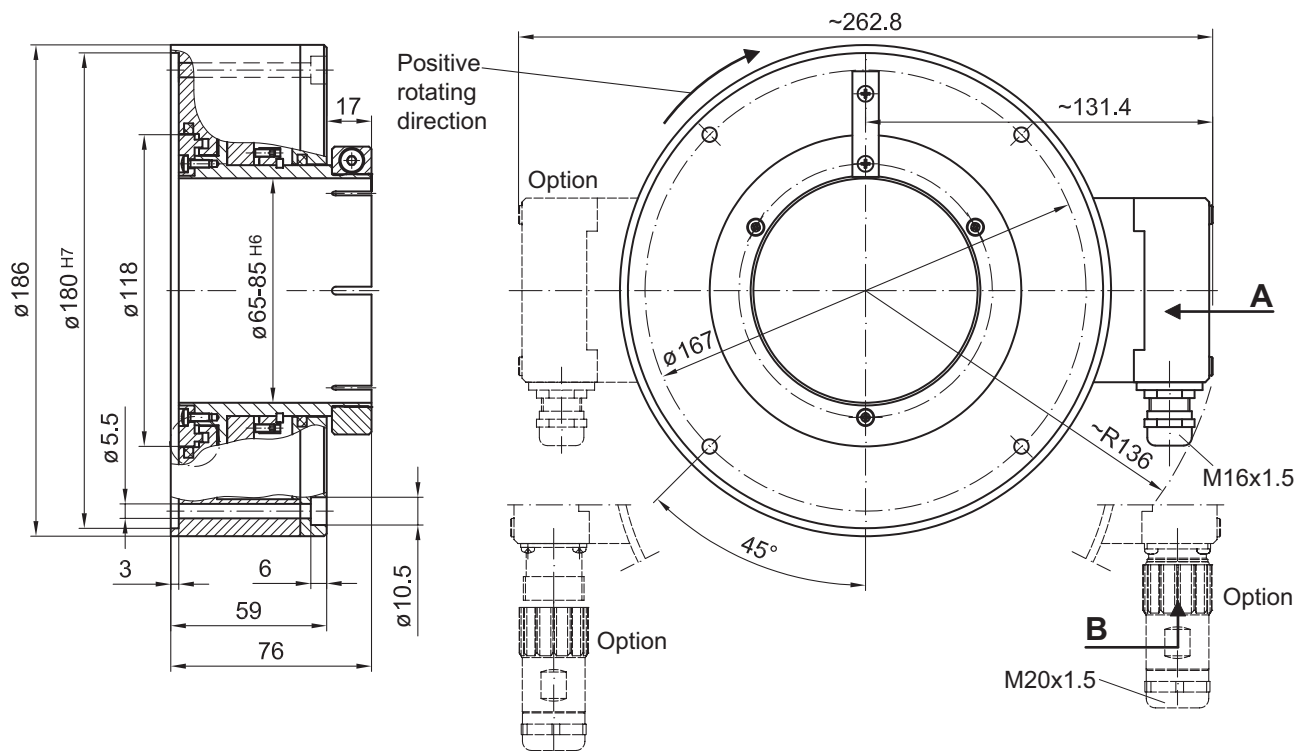
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HG 18, HG 22

#### Dimensions

#### HG 18



#### HG 22

