Encoders without bearing

Incremental encoder with optical sensing

Hollow shaft ø20 to ø45 mm, resolution 250…2048 pulses

HG 16

Features

- **Large axial and radial displacement of the shaft permitted**
- **Fit for high operating speed**
- **Robust and free from wear**
- **Resolution max. 2048 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 - electrical ratings

Voltage supply	5 VDC ±5 % 9...26 VDC 9...30 VDC
Consumption w/o load	≤100 mA
Resolution (steps/turn)	250...2048
Phase shift	90° ±20°
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤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

Technical data - mechanical design

Dimensions (flange)	ø158 mm
Shaft	ø20...45 mm hollow shaft
Protection DIN EN 60529	IP 56 (≤9000 U/min), IP 54 (≤12000 rpm), IP 23 (≤30000 rpm)
Operating speed	≤9000 rpm (IP 56) ≤12000 rpm (IP 54) ≤30000 rpm (IP 23)
Operating torque typ.	1 Nm
Rotor moment of inertia	2.4 kgcm²
Material	Housing: aluminium
Operating temperature	-30...+100 °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	±0.05 mm (with zero pulse) ±0.2 mm (without zero pulse)
Weight approx.	2.4 kg
Connection	Terminal box Mating connector
Approval	CE conform

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HG 16

Part number

HG 16 [ ][ ][ ][ ][ ][ ][ ]

Voltage supply / signals
- \- 9...30 VDC / output circuit HTL
- I 9...30 VDC / output circuit HTL 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)

See part number (pulses)

Output signals
- D K1, K2
- DN K1, K2, K0

Redundant sensing
- \- Without redundant sensing
- M with redundant sensing

Part number (pulses)

250	512	1000	1080	2048
500	600	1024	1200	

Other pulse numbers upon request.

Accessories

Connectors and cables

HEK 8	Sensor cable for encoders

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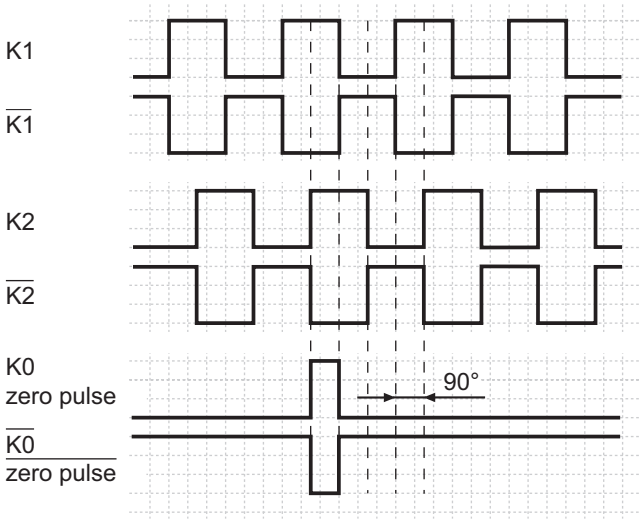
HG 16

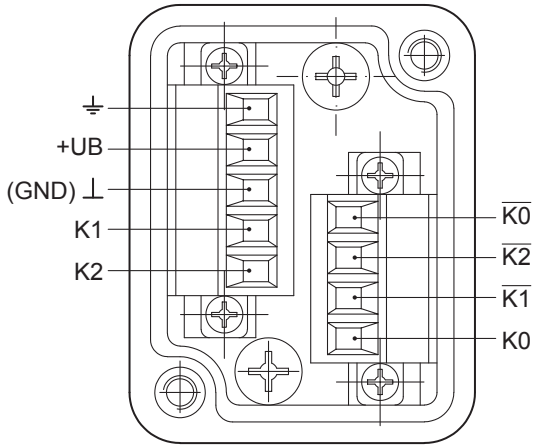
Output signals

at positive rotating direction



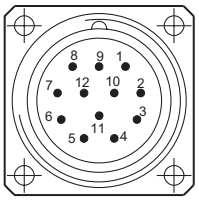
Terminal assignment

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



HG 16

Dimensions