

HG 16

Incremental encoder with optical sensing

Through hollow shaft $\varnothing 20 \dots 45$ mm / 250 ... 2048 pulses per revolution

Overview

- Large axial and radial displacement of the shaft permitted
- Fit for high operating speed
- Robust and wearless
- Max. 2048 pulses per revolution
- Output stage TTL with regulator UB 9...26 VDC



HUBNER
BERLIN
A Baumer Brand

Technical data

Technical data - electrical ratings

Voltage supply	9...30 VDC 5 VDC ± 5 % 9...26 VDC
Consumption w/o load	≤ 100 mA
Pulses per revolution	250 ... 2048
Output signals	K1, K2, K0 + inverted
Reference signal	Zero pulse, width 90°
Output frequency	≤ 120 kHz
Phase shift	90° ± 20 °
Duty cycle	40...60 %
Sensing method	Optical
Output stages	HTL TTL/RS422
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE UL approval / E217823

Technical data - mechanical design

Size (flange)	$\varnothing 158$ mm
Shaft type	$\varnothing 20 \dots 45$ mm (through hollow shaft)
Axial tolerance	-0.5 ... 1.5 mm (with zero pulse) -0.5 ... 2.5 mm (without zero pulse)

Technical data - mechanical design

Radial tolerance	± 0.05 mm (with zero pulse) ± 0.2 mm (without zero pulse)
Protection 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
Material	Housing: aluminium Shaft: stainless steel
Rotor moment of inertia	8.5 kgcm ²
Operating temperature	-30...+100 °C
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Weight approx.	2.4 kg
Connection	Terminal box (2x with option M) Flange connector M23, 12-pin (2x with option M)

Optional

- Electrical connection with flange connector and mating connector
- Redundant sensing (option M)

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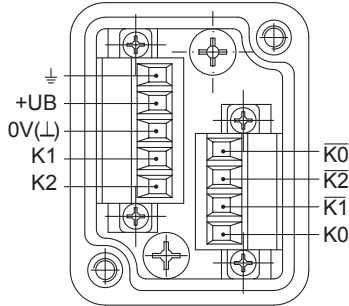
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Terminal assignment

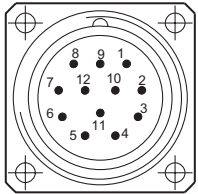
View A (see dimension)

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 (\perp)
11	dnu
12	+UB

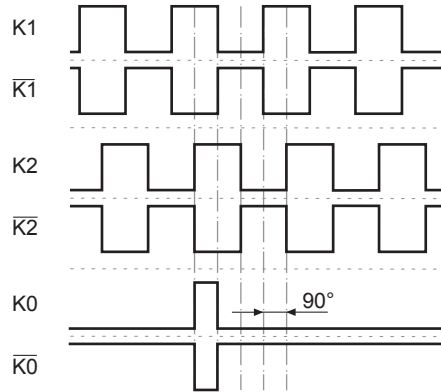
Terminal significance

+UB	Voltage supply
0V (\perp)	Ground
\perp	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)

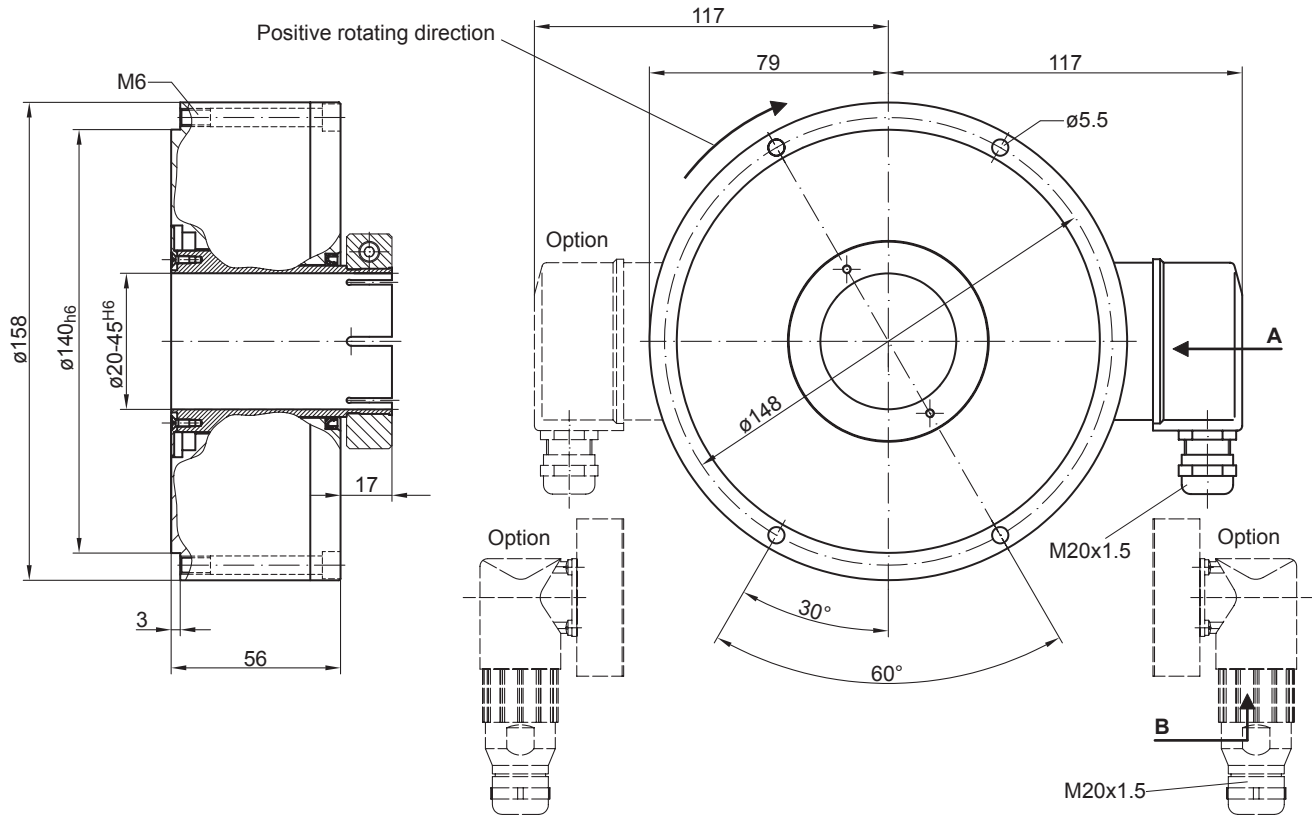


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Dimensions



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Ordering reference

	HG16	#	DN	####	###
Product					
Incremental encoder	HG16				
Redundant sensing					
Without redundant sensing					
With redundant sensing			M		
Output signals					
K1, K2, K0			DN		
Pulse number⁽¹⁾					
250					250
500					500
512					512
600					600
1000					1000
1024					1024
1080					1080
1200					1200
2048					2048
Voltage supply / output stage					
9...30 VDC / output stage HTL					
9...30 VDC / output stage HTL with inverted signals					I
5 VDC / output stage TTL with inverted signals					TTL
9...30 VDC / output stage TTL with inverted signals					R

(1) Other pulse numbers on request.