

HOG890

Incremental HeavyDuty encoders with three switches for demanding machinery and asynchronous drives

Overview

- Protection IP66
- Shaft insulation 3.5 kV
- Corrosion protection CX
- Operating temperature -40...+100 °C
- Cable length up to 350 m (HTL-P)
- Sealed and user-friendly field termination
- Extended protection circuit
- Parameterization
- Standstill, speed, direction and status monitoring and display with Baumer Sensor Suite or using the switches



Picture similar



1+1=1
Combination

Technical data

Technical data - electrical ratings

Voltage supply	4.75...30 VDC (Vin = Vout, HTL/TTL)
Consumption w/o load	≤100 mA
Pulses per revolution	1024 (HTL-P) 2048 (HTL-P)
Further pulses per revolution	Freely parameterizable with Baumer Sensor Suite
Phase shift	Typ. 90 °
Duty cycle	Typ. 50 %
Reference signal	Zero pulse, width 90° or 180°
Sensing method	Optical
Output frequency	≤200 kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL-P (power linedriver) TTL
Shaft insulation	Suitable up to 3.5 kV
Transmission length	≤350 m at 100 kHz (HTL-P) ≤550 m at 100 kHz (TTL)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Approval	CE UL approval / E217823 CSA

Technical data - mechanical design

Size (flange)	ø90 mm, length 72 mm
Shaft type	ø12G7 mm (blind hollow shaft) ø16G7 mm (blind hollow shaft) ø11 x 30 mm (solid shaft with key)
Admitted shaft load	≤350 N axial ≤450 N radial
Mounting type	Hollow shaft: central screw Solid shaft: EURO flange B10

Technical data - mechanical design

Protection EN 60529	IP 66
Operating speed	≤6000 rpm (mechanical)
Operating torque	≤6 Ncm
Rotor moment of inertia	160 gcm ²
Material	Housing: aluminium, powder-coated 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 1 Mio. brake shocks
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions CX according to ISO 12944-2
Connection	Terminal box with pluggable push in terminal blocks and cable gland M20

Technical data - digital switches

Function	Combination with three digital switches: <ul style="list-style-type: none"> • Overspeed and underspeed detection • Standstill and creep monitoring • Direction of rotation display • Warning or failure events • Parameterizable with Baumer Sensor Suite
Switching outputs	Output (Push)
Number of switching outputs	3

Technical data - digital speed switches

Function	Detection of overspeed and underspeed
Max. number of switching outputs	3

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Technical data

Technical data - digital speed switches

Parametrization	Speed range
	Hysteresis
	Switching delay
Speed setting resolution	0.1 rpm
Switching accuracy	± 2 % (up to ±1 rpm at 50 rpm)

Technical data - standstill monitoring

Function	Detection of standstill and creep
Max. number of switching outputs	1

Technical data - standstill monitoring

Parametrization	Dwell time
	Standstill position window
Activation Speed	±2 rpm

Technical data - direction of rotation

Function	Detection and display of the direction of rotation
Max. number of switching outputs	1
Parametrization	Hysteresis

Optional

- ATEX

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Baumer Sensor Suite

Monitoring

The following information is displayed with the Baumer Sensor Suite:

- Encoder settings
- Speed and position over time
- Current speed, position and temperature
- Encoder status
- Minimum and maximum temperature over entire service life
- Total operating time
- Total revolutions
- Switch monitoring
 - Switch status
 - Speed over time per switch with switching window
 - Switch status over time
 - Direction of rotation status
 - Status of standstill monitoring

Parameterization

The following parameters can be set via USB-C access with the Baumer Sensor Suite:

- Number of lines per mechanical revolution
- Output stages
- Reference length and phase
- Setting the user units
- Switching outputs
 - Switching active high, active low
 - Speed switch
 - Direction of rotation switch
 - Standstill switch
- Time behavior for switching outputs
 - Minimum switch-on time (On)
 - Minimum switch-off duration (Off)

Parameterization - encoder

Pulses per revolution	Selection: 50, 500, 512, 1000, 1024, 2048, 2500, 4096, 5000 + free input
Output stages	HTL-P (power linedriver) TTL
Rotating direction	CW, CCW
Width of zero pulse	90°, 180° (reference signal)

Parameterization - digital switches

Min. switch-on time	1...1000 ms
Min. switch-off time	1...1000 ms

Parameterization - digital speed switch

Function	Speed switch with adjustable speed limits and switching delay to filter out short-term speed peaks
Switching output	Active high / active low
Upper/lower speed range	±2 ... 6000 rpm
Hysteresis	0...50 %
Switching delay time	0...5000 ms (0 ms default)

Parameterization - standstill monitoring

Function	Reliable creep detection through position monitoring if the speed falls below a specified speed within a defined time window
Switching output	Active high / active low
Dwell time	10...1000000 ms
Creep Window	1...100°

Parameterization - direction of rotation

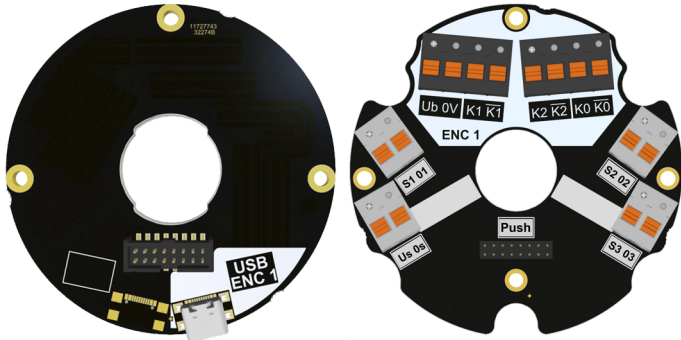
Function	Direction detection with adjustable hysteresis
Switching output	Active high / active low
Hysteresis	1...100°

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Terminal assignment

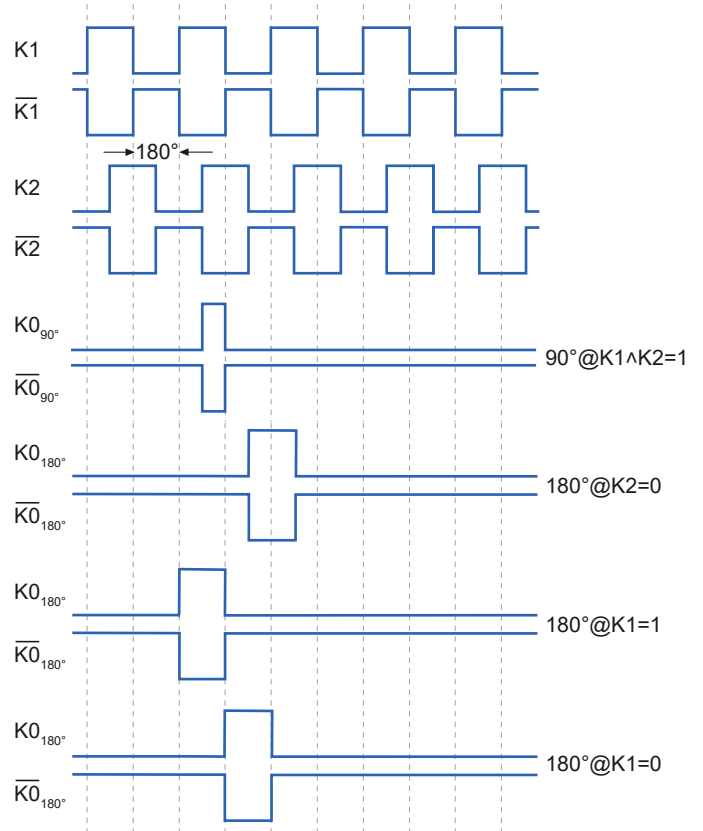
Push output



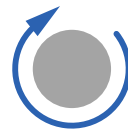
Terminal significance

U_b	Voltage supply - encoder 1
0V	Ground - encoder 1
K0	Zero pulse (reference signal) - encoder 1
$\bar{K}0$	Zero pulse inverted - encoder 1
K1	Output signal channel 1 - encoder 1
$\bar{K}1$	Output signal channel 1 inverted - encoder 1
K2	Output signal channel 2 - encoder 1
$\bar{K}2$	Output signal channel 2 inverted - encoder 1
U_s	Voltage supply - push output
0s	Ground - push output
S1	Push switching output 1
S2	Push switching output 2
S3	Push switching output 3
01	Ground - push output 1
02	Ground - push output 2
03	Ground - push output 3
USB ENC1	USB-C for parameterization

Output signals



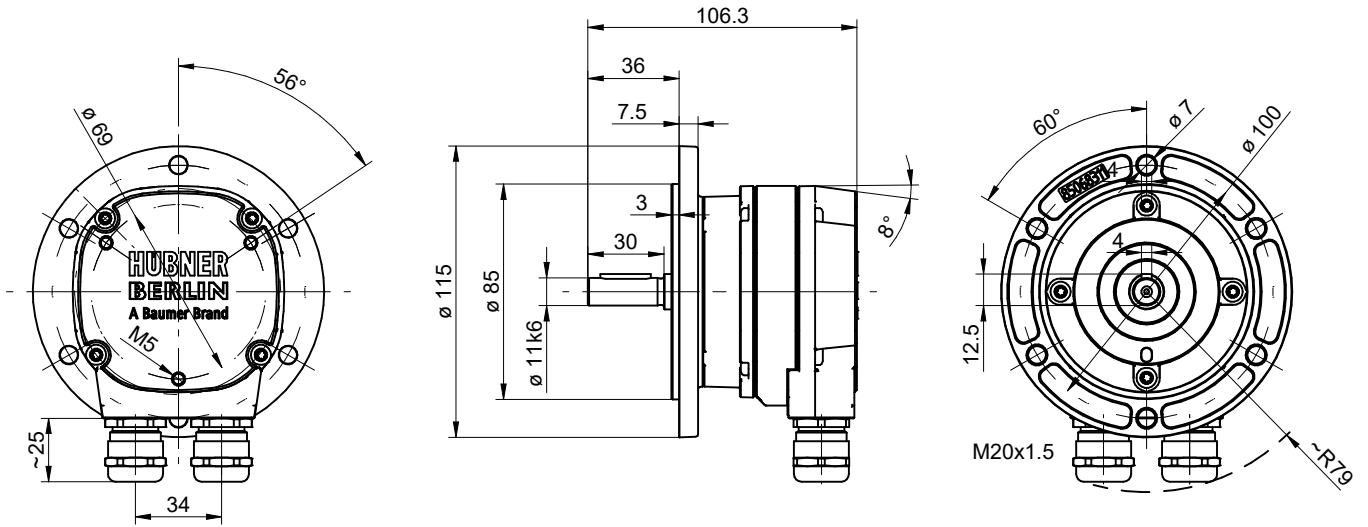
With positive direction of rotation / clockwise, with view on the encoder shaft



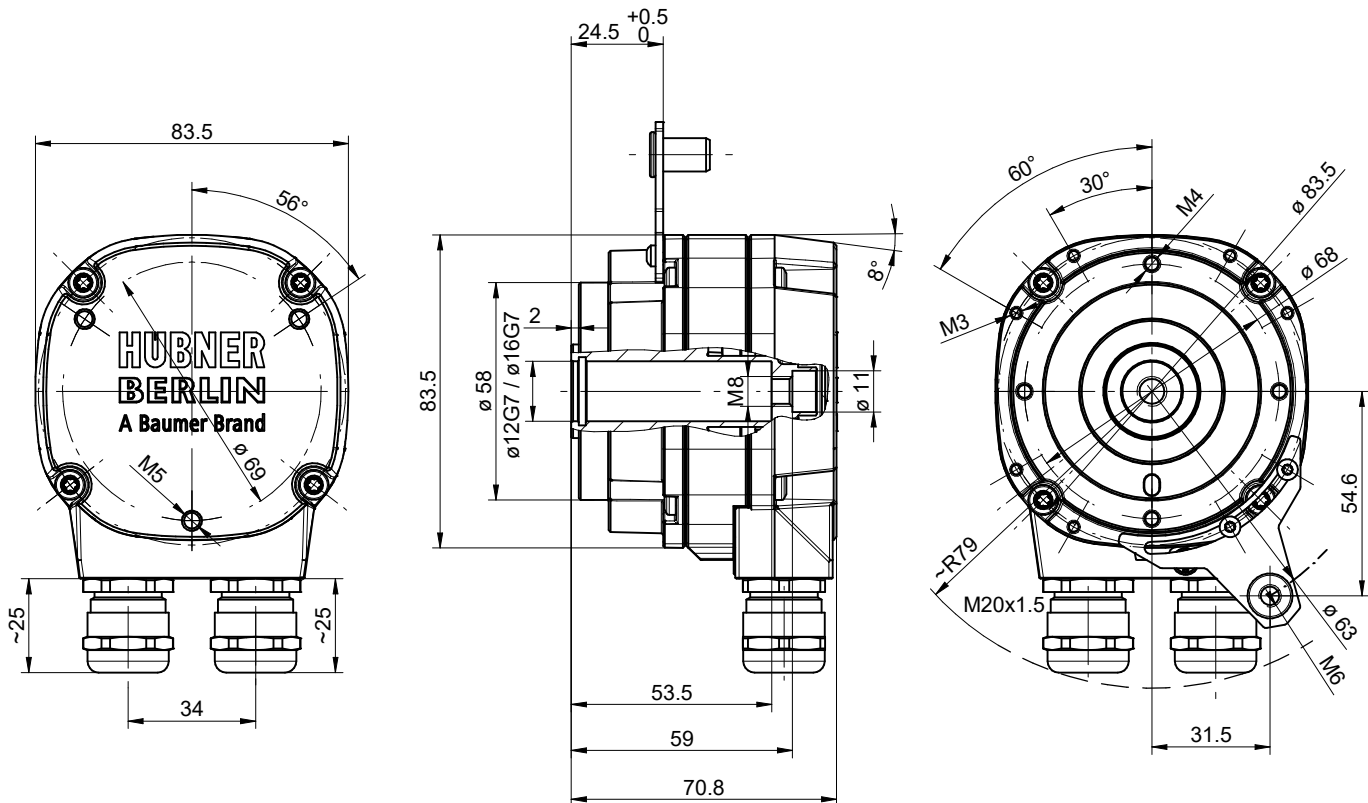
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Dimensions



Solid shaft, cable gland



Blind hollow shaft, cable gland (torque plate can be mounted at different positions)

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Ordering reference

Product	Shaft	Pulses per revolution, output	Connection	Comment	Material number
HOG890	Solid shaft ø11 mm	Parameterization & monitoring at customer	2 x cable gland M20	3 x push	EHOG890-11730711
	Blind hollow shaft ø12G7	Parameterization & monitoring at customer	2 x cable gland M20	3 x push	EHOG890-11730712
	Blind hollow shaft ø16G7	Parameterization & monitoring at customer	2 x cable gland M20	3 x push	EHOG890-11730713