Baumer
Passion for Sensors

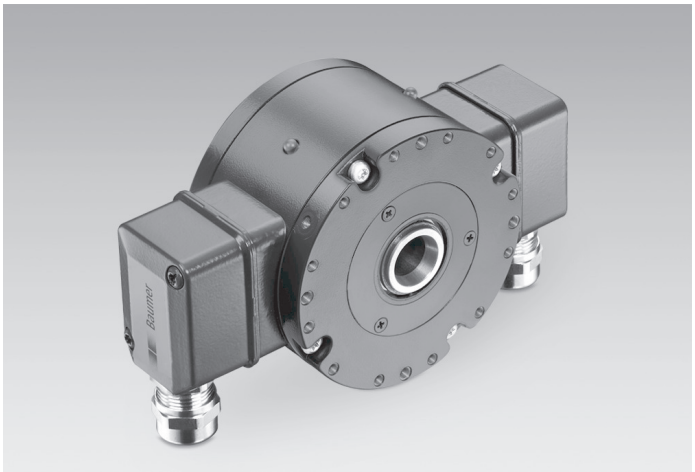
Incremental encoders - combination

HOG 86 + DSL

Encoder with integrated programmable, digital speed switch
Blind hollow shaft ø16 mm / 512…2500 pulses per revolution

Overview

- Robust, compact housing
- Hybrid bearing for extended service life
- 3 switching outputs speed controlled (independent transistor outputs)
- Freely programmable on and off switching speed
- Programming via included software (RS485 interface)
- Output stage HTL or TTL



Technical data

Technical data - electrical ratings	
Voltage supply	15...30 VDC
Consumption w/o load	≤200 mA
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE
Technical data - electrical ratings (encoder)	
Pulses per revolution	512 … 2500
Phase shift	90 ° ±20°
Duty cycle	45…55 %
Reference signal	Zero pulse, width 90°
Output frequency	≤120 kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL-P (power linedriver) TTL/RS422
Sensing method	Optical
Shaft insulation	2,8 kV
Transmission length	≤350 m at 100 kHz (HTL-P) ≤550 m at 100 kHz (TTL)
Technical data - electrical ratings (speed switches)	
Interface	RS485
Switching accuracy	± 2 % (or Digit)
Switching outputs	3 outputs, speed control
Output switching capacity	12 VDC ≤40 mA
Switching delay time	≤40 ms

Technical data - mechanical design	
Size (flange)	ø99 mm
Shaft type	ø16 mm (blind hollow shaft)
Admitted shaft load	≤350 N axial ≤450 N radial
Protection DIN EN 60529	IP 66
Speed (n)	≤6000 rpm
Range of switching speed (ns)	Pulses = 512: ±16...6000 rpm Pulses = 1024: ±8...6000 rpm Pulses = 2048: ±4...3500 rpm Pulses = 2500: ±3...2900 rpm
Operating torque	≤6 Ncm
Rotor moment of inertia	160 gcm²
Motor shaft tolerance	±0,2 mm radial
Material	Housing: aluminium, coated Shaft: stainless steel
Operating temperature	-30...+85 °C
Resistance	IEC 60068-2-6 Vibration 15 g, 10...2000 Hz IEC 60068-2-27 Shock 250 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Connection	2x terminal box
Weight approx.	1,4 kg

Optional

- Relay modul DS 93 R

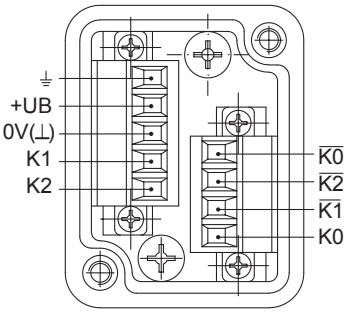
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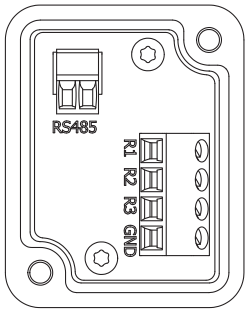
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Terminal assignment

View A *(see dimension)*
Connecting terminal terminal box encoder



View B *(see dimension)*
Connecting terminal speed switch DSL.R



Terminal significance

Encoder incremental

+UB	Voltage supply
0V (⊥)	Ground
⏚	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

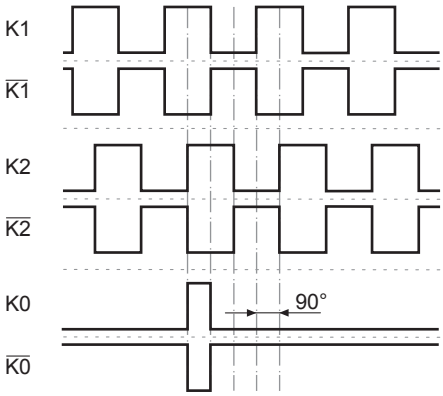
Speed switch DSL.R

R1*	Transistor switching output 1, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R2*	Transistor switching output 2, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R3*	Transistor switching output 3, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
GND*	Ground connection
RS485	Interface for PC or Laptop (adapter required). Programming of the DSL via the included software.

* Connection to relay module, for example DS 93 R (accessory)

Output signals

HTL/TTL
At positive rotating direction *(see dimension)*

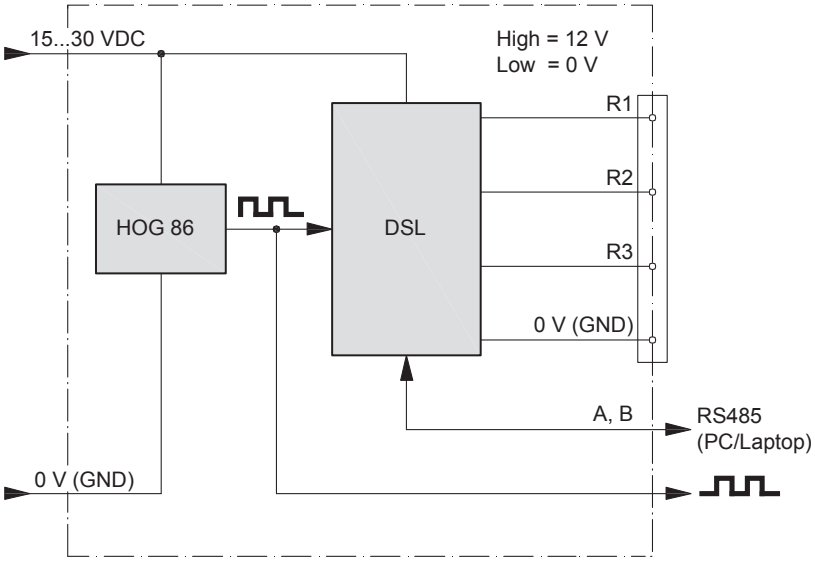


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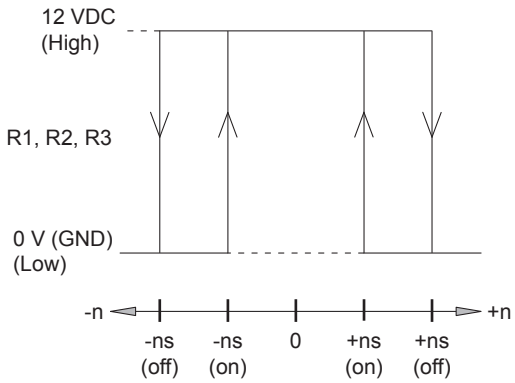
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Block circuit diagram



Switching characteristics



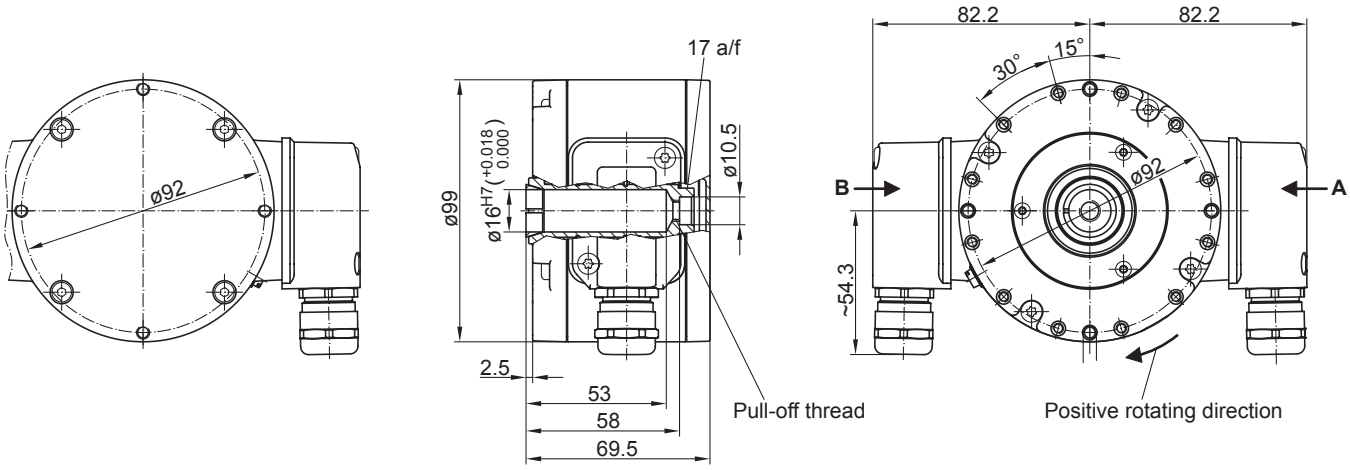
n = speed
ns (on) = adjusted switching on speed
ns (off) = adjusted switching off speed

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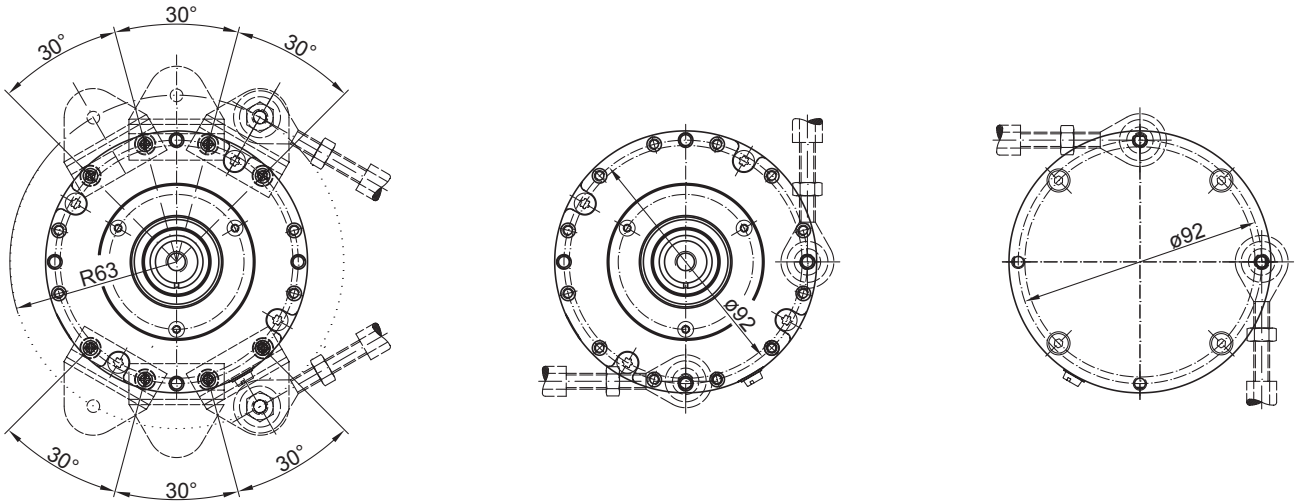
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Dimensions



Blind hollow shaft



Mounting possibilities

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Ordering reference

	HOG86	T	H	6	DN	####	###	+ DSL
Product								
Incremental encoder + Speed switch	HOG86							
Connection								
1x terminal box, radial		T						
Insulation								
Hybrid bearing			H					
Shaft diameter								
ø16 mm, central screw				6				
Output signals								
K1, K2, K0					DN			
Pulse number(1)								
512						512		
1024						1024		
2048						2048		
2500						2500		
Voltage supply / output stage								
9...30 VDC / output stage HTL with inverted signals							I	
5 VDC ±5 % / TTL							T	
9...30 VDC / output stage TTL with inverted signals							R	
Speed switch								
3 outputs, speed control								+ DSL

(1) Other pulse numbers on request.

Accessories

Mounting accessories

11077087	Mounting and dismounting set
11071906	Mounting kit earthing strap
11043628	Torque arm M6, length 67...70 mm
11004078	Torque arm M6, length 120...130 mm (≥71 mm)
11002915	Torque arm M6, length 425...460 mm (≥131 mm)
11054917	Torque arm M6 insulated, length 67...70 mm
11072795	Torque arm M6 insulated, length 120...130 mm (≥71 mm)
11082677	Torque arm M6 insulated, length 425...460 mm (≥131 mm)
11071850	Support plate mounting kit R63 for torque arm size M6
11082676	Support plate mounting kit R69 for torque arm size M6
11072076	Screw mounting kit for torque arm size M6
11071904	Mounting kit for torque arm size M6

Connectors and cables

	Sensor cable for encoders HEK 8
11064248	USB → RS485 converter
11117345	USB → RS485 converter with connecting cable for DSL

Accessories

Diagnostic accessories

11075858	Analyzer for encoders HENQ 1100
11075880	Analyzer for encoders HENQ 1100 B

Relay moduls

11016072	Relay modul DS 93 R

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