Baumer
Passion for Sensors

Incremental encoders - combination

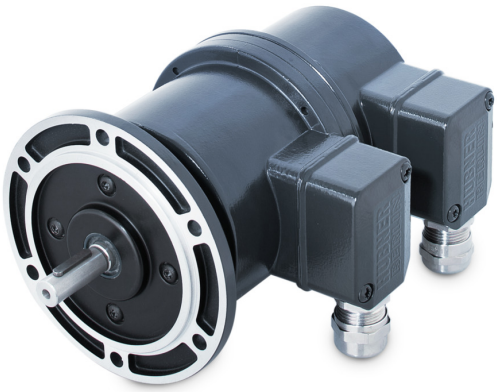
POG 86 + FSL

Encoder with integrated centrifugal switch

Solid shaft with EURO flange B10 / 500…5000 pulses per revolution

Overview

- Mechanical speed monitoring based on centrifugal force
- Robust, compact housing
- Two bearings with large distance, one at each end
- High shaft load up to 350 N
- TTL output driver for cable length up to 550 m
- Terminal boxes, turn by 180°



Technical data

Technical data - electrical ratings	
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE
Technical data - electrical ratings (encoder)	
Voltage supply	9...30 VDC 5 VDC ±5 %
Consumption w/o load	≤100 mA
Pulses per revolution	500 … 5000
Phase shift	90 ° ±20°
Duty cycle	45…55 % 40…60 % (>3072 pulses)
Reference signal	Zero pulse, width 90°
Output frequency	≤120 kHz ≤300 kHz (on request)
Output signals	K1, K2, K0 + inverted Error output (option EMS)
Output stages	HTL-P (power linedriver) TTL/RS422
Sensing method	Optical
Technical data - electrical ratings (centrifugal switch)	
Switching accuracy	± 4 % (Δn = 2 rpm/s); 20 % (Δn = 1500 rpm/s)
Switching deviation	≤3 % (cw-ccw rotation)
Switching hysteresis	40 % of switching speed
Switching outputs	1 output, speed control
Output switching capacity	≤6 A / 230 VAC ≤1 A / 125 VDC (EAC: <50 VAC / 75 VDC)

Technical data - electrical ratings (centrifugal switch)	
Minimum switching current	50 mA
Technical data - mechanical design	
Size (flange)	ø115 mm
Shaft type	ø11 mm solid shaft
Admitted shaft load	≤250 N axial ≤350 N radial
Flange	EURO flange B10
Protection EN 60529	IP 56
Speed (n)	≤1.25 · ns
Range of switching speed (ns)	850...4500 rpm (Δn = 2 rpm/s)
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm²
Material	Housing: aluminium, coated Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses)
Resistance	IEC 60068-2-6 Vibration 5 g, 10-2000 Hz IEC 60068-2-27 Shock 150 g, 1 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Connection	2x terminal box
Weight approx.	1.9 kg

Optional

- Function control with EMS (Enhanced Monitoring System)

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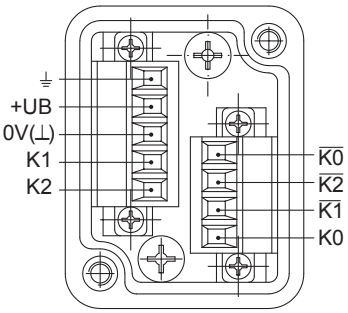
General information

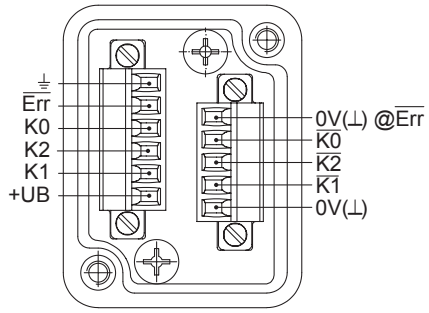
The constructive design of the centrifugal switch is its use as a switch with positive break function. It must not be used as a continuous switch (switching cycles greater than 500 during service life).

Terminal assignment

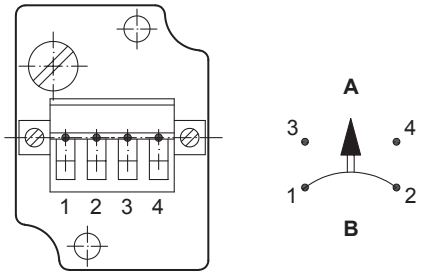
View A *(see dimension)*
Connecting terminal terminal box encoder



Option EMS: View A *(see dimension)*
Connecting terminal terminal box encoder



View B *(see dimension)*
Connecting terminal centrifugal switch



A = make contact, **B** = break contact

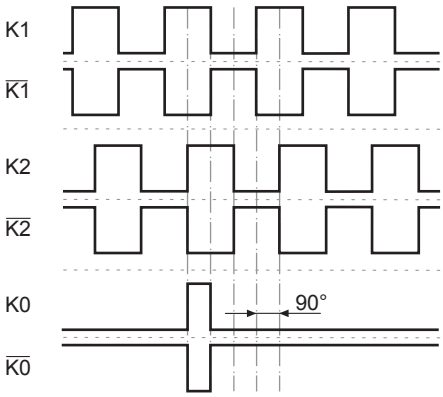
Terminal significance

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
$\overline{Err}$	Error output (option EMS)

Output signals

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



Option EMS: Status LED / error output

Flash light red*	Error of signal sequenze, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output transistors (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection or wrong connection (Error output = LOW)

* Only at rotating device

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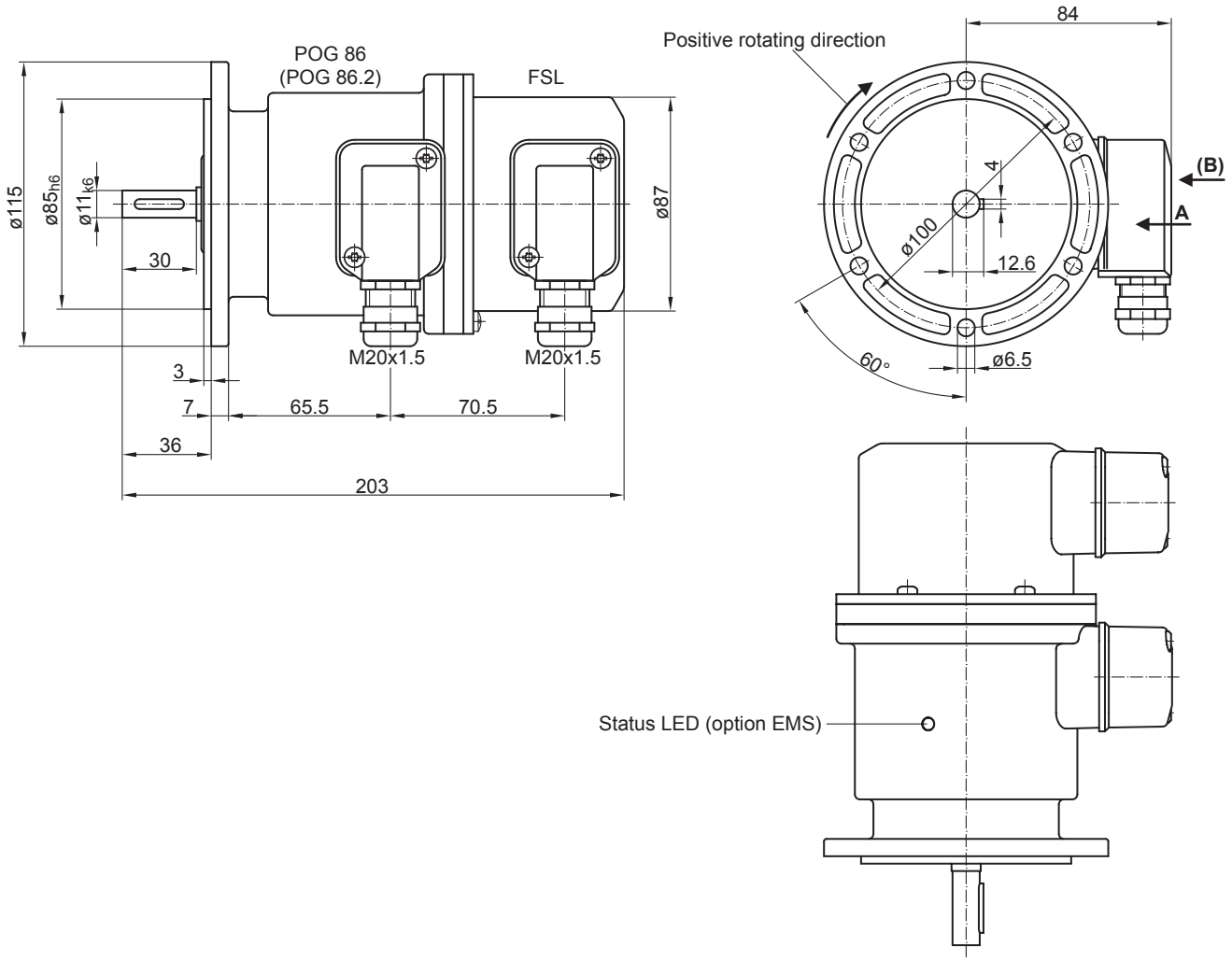
Dimensions



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Ordering reference

	POG86	##	T	N	1	DN	####	###	+ FSL	#####
Product										
Incremental encoder + Centrifugal switch	POG86									
EMS - Enhanced Monitoring System										
Without EMS										
With EMS		.2								
Connection										
1x terminal box, radial			T							
Insulation										
Without				N						
Shaft diameter										
ø11 mm solid shaft					1					
Output signals										
K1, K2, K0						DN				
Pulse number(1)										
500							500			
512							512			
1000							1000			
1024							1024			
1250							1250			
2048							2048			
2500							2500			
3072							3072			
4096							4096			
5000							5000			
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		
Version speed switch										
Mechanical centrifugal switch									+ FSL	
Switching speed (ns)										
850...949 rpm (Δn = 2 rpm/s)(2)										6 ...
950...1099 rpm (Δn = 2 rpm/s)(2)										5 ...
1100...1299 rpm (Δn = 2 rpm/s)(2)										4 ...
1300...1799 rpm (Δn = 2 rpm/s)(2)										3 ...
1800...2499 rpm (Δn = 2 rpm/s)(2)										2 ...
2500...4500 rpm (Δn = 2 rpm/s)(2)										1 ...

(1) Other pulse numbers on request.
(2) Please specify the exact switching speed in addition to the part number (factory setting).

Accessories

Mounting accessories	
	Spring disk coupling K 35 (shaft ø6...12 mm)
	Spring disk coupling K 50 (shaft ø11...16 mm)
	Spring disk coupling K 60 (shaft ø11...22 mm)