

## POG 11 + FSL

Encoder with integrated centrifugal switch

Solid shaft with EURO flange B10 / 300...5000 pulses per revolution

### Overview

- Offshore and salt water firm, high protection IP 67
- TTL output driver for cable length up to 550 m
- Mechanical speed monitoring based on centrifugal force
- EURO flange B10 / solid shaft  $\varnothing 11$  mm
- 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 $\pm 5$ %
Consumption w/o load	$\leq 100$ mA
Pulses per revolution	300 ... 5000
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width $90^\circ$
Output frequency	$\leq 120$ kHz $\leq 300$ 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	$\pm 4$ % ( $\Delta n = 2$ rpm/s); 20 % ( $\Delta n = 1500$ rpm/s)
Switching deviation	$\leq 3$ % (cw-ccw rotation)
Switching hysteresis	40 % of switching speed
Switching outputs	1 output, speed control
Output switching capacity	$\leq 6$ A / 230 VAC $\leq 1$ A / 125 VDC (EAC: $< 50$ VAC / 75 VDC)

#### Technical data - electrical ratings (centrifugal switch)

Minimum switching current	50 mA
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#### Technical data - mechanical design

Size (flange)	$\varnothing 115$ mm
Shaft type	$\varnothing 11$ mm solid shaft
Admitted shaft load	$\leq 300$ N axial $\leq 450$ N radial
Flange	EURO flange B10
Protection EN 60529	IP 67
Speed (n)	$\leq 1.25 \cdot ns$
Range of switching speed (ns)	850...4500 rpm ( $\Delta n = 2$ rpm/s)
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm <sup>2</sup>
Material	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-40...+100 °C -25...+100 °C (>3072 pulses)
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions CX (C5-M) according to ISO 12944-2
Connection	2x terminal box 3x terminal box (with option M)
Weight approx.	2.3 kg 2.5 kg (with option M)

### Optional

- Function control with EMS (Enhanced Monitoring System)
- Redundant sensing with two terminal boxes
- Housing foot (B3)

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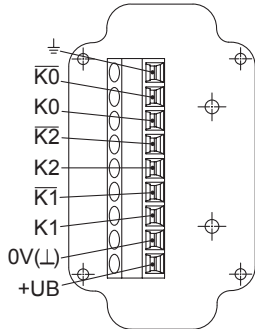
### General information

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

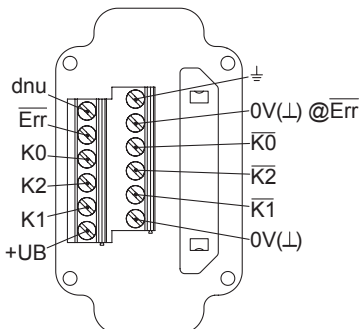
#### View A (see dimension)

Connecting terminal terminal box encoder



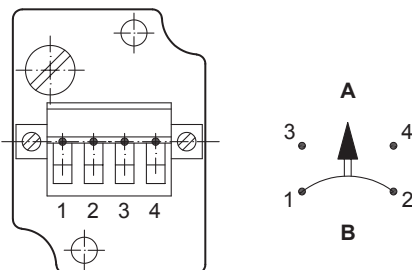
#### Option EMS: View A (see dimension)

Connecting terminal terminal box encoder



#### View B (see dimension)

Connecting terminal centrifugal switch



A = make contact, B = break contact

### Terminal significance

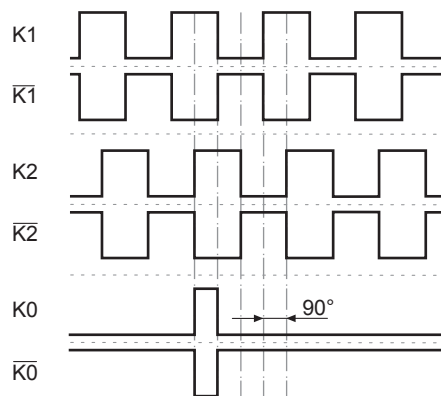
#### Encoder incremental

+UB	Voltage supply
0V (L)	Ground
⊥	Earth ground (housing)
K1	Output signal channel 1
K1	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
K2	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
K0	Zero pulse inverted
Err	Error output (option EMS)
dnu	Do not use

### Output signals

#### HTL/TTL

At positive rotating direction (see dimension)



### Option EMS: Status LED / error output

Flash light red*	Error of signal sequence, 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)

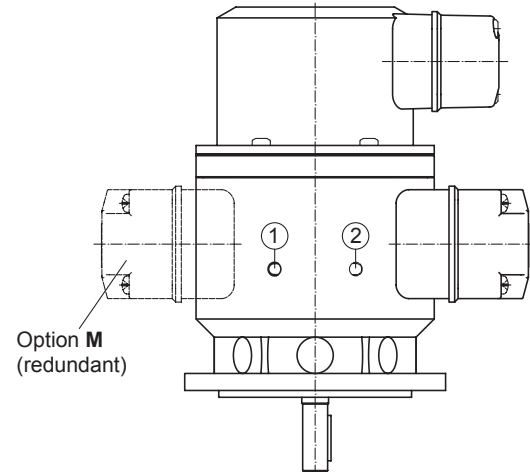
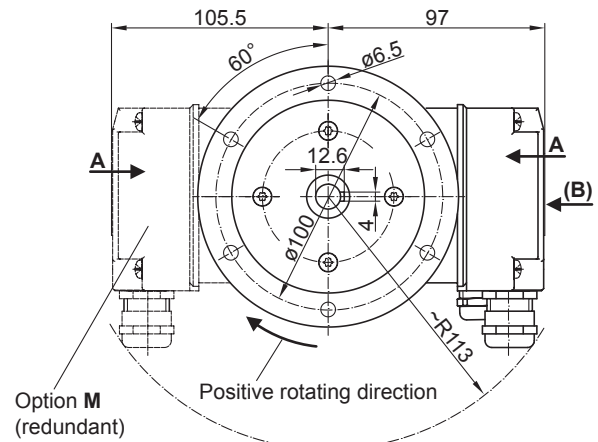
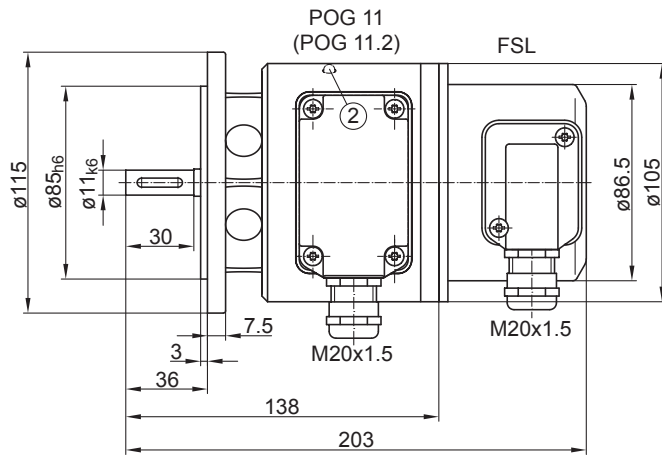
\* Only at rotating device

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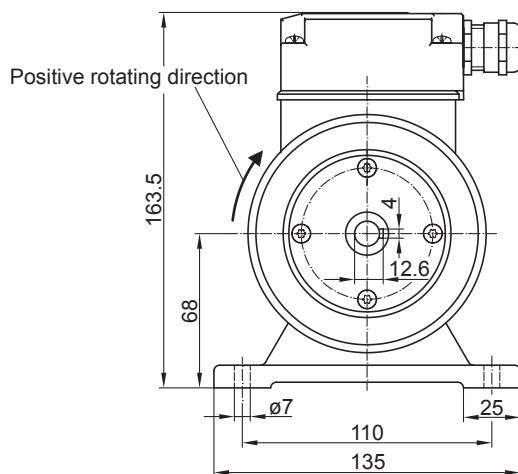
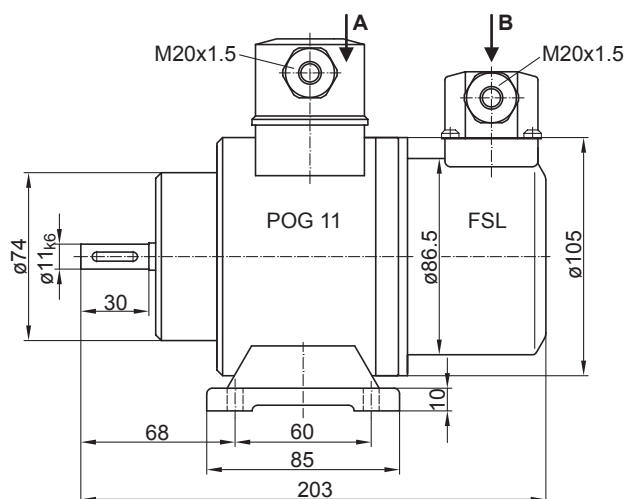
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### Dimensions



- ① Status LED (option EMS)
- ② Status LED (option M (redundant) and EMS)

EURO flange B10



Housing foot B3

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### Ordering reference

	POG11	##	#	DN	####	###	#####	+ FSL	#####
<b>Product</b>									
Incremental encoder + Centrifugal switch	POG11								
<b>EMS - Enhanced Monitoring System</b>									
Without EMS									
With EMS		.2							
<b>Redundant sensing</b>									
Without redundant sensing									
With redundant sensing			M						
<b>Output signals</b>									
K1, K2, K0				DN					
<b>Pulse number</b>									
300					300				
500					500				
512					512				
1000					1000				
1024					1024				
1200					1200				
2048					2048				
2500					2500				
3072					3072				
4096					4096				
5000					5000				
<b>Voltage supply / output stage</b>									
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			
<b>Mounting type</b>									
EURO flange B10									
Housing foot B3							B3		
<b>Version speed switch</b>									
Mechanical centrifugal switch								+ FSL	
<b>Switching speed (ns)</b>									
850...949 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									6 ...
950...1099 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									5 ...
1100...1299 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									4 ...
1300...1799 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									3 ...
1800...2499 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									2 ...
2500...4500 rpm ( $\Delta n = 2 \text{ rpm/s}^{(2)}$ )									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  $\varnothing 6...12 \text{ mm}$ )
- Spring disk coupling K 50 (shaft  $\varnothing 11...16 \text{ mm}$ )
- Spring disk coupling K 60 (shaft  $\varnothing 11...22 \text{ mm}$ )

#### Connectors and cables

- Sensor cable for encoders HEK 8

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#### Diagnostic accessories

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