

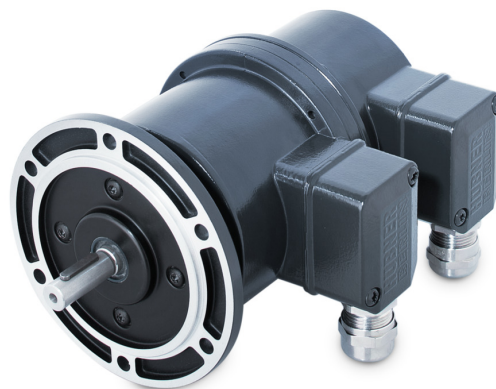
POG 86 + FSL

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 \pm 5 % |
| Consumption w/o load | \leq 100 mA |
| Pulses per revolution | 500 ... 5000 |
| Phase shift | 90 ° \pm 20° |
| Duty cycle | 45...55 % 40...60 % (>3072 pulses) |

Reference signal Zero pulse, width 90°

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

Technical data - mechanical design

| | |
|-------------------------------|---|
| Size (flange) | \varnothing 115 mm |
| Shaft type | \varnothing 11 mm solid shaft |
| Admitted shaft load | \leq 250 N axial \leq 350 N radial |
| Flange | EURO flange B10 |
| Protection EN 60529 | IP 56 |
| Speed (n) | \leq 1.25 · 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 ² |
| 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 g |

Optional

- Function control with EMS (Enhanced Monitoring System)

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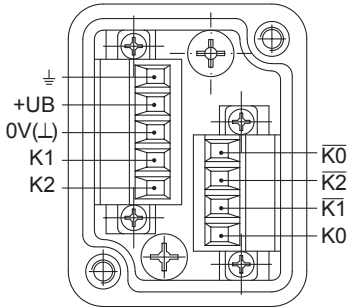
General information

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

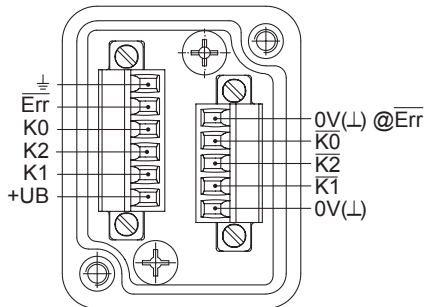
View A (see dimension)

Connecting terminal terminal box encoder



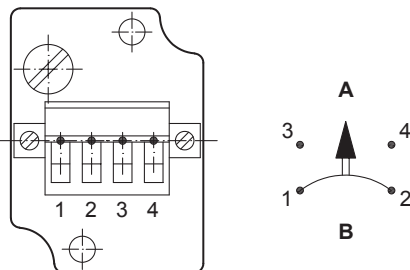
Option EMS: View A (see dimension)

Connecting terminal terminal box encoder



View B (see dimension)

Connecting terminal centrifugal switch



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

Terminal significance

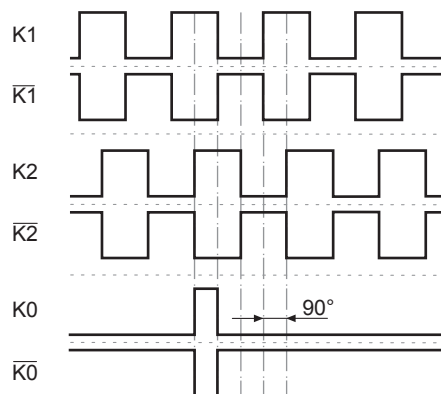
Encoder incremental

| | |
|------------------|--|
| +UB | Voltage supply |
| 0V (L) | 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 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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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 ($\Delta n = 2$ rpm/s) ⁽²⁾ | | | | | | | | | | 6 ... |
| 950...1099 rpm ($\Delta n = 2$ rpm/s) ⁽²⁾ | | | | | | | | | | 5 ... |
| 1100...1299 rpm ($\Delta n = 2$ rpm/s) ⁽²⁾ | | | | | | | | | | 4 ... |
| 1300...1799 rpm ($\Delta n = 2$ rpm/s) ⁽²⁾ | | | | | | | | | | 3 ... |
| 1800...2499 rpm ($\Delta n = 2$ rpm/s) ⁽²⁾ | | | | | | | | | | 2 ... |
| 2500...4500 rpm ($\Delta n = 2$ 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)