

Combination

Encoder with integrated electronic speed switch

Solid shaft with EURO flange B10

300...5000 pulses per revolution

POG 11 + ESL 93



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Technical data - electrical ratings (encoder)

Voltage supply	9...30 VDC; 5 VDC $\pm 5\%$
Consumption w/o load	≤ 100 mA
Pulses per revolution	300...5000
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
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 (speed switches)

Voltage supply	12 VDC $\pm 10\%$
Consumption w/o load	≤ 5 mA
Switching accuracy	$\pm 4\%$ (≤ 1500 rpm) $\pm 2\%$ (> 1500 rpm)
Switching hysteresis	$\approx 30\%$ of switching speed
Switching outputs	3 outputs, speed control
Current each output	40 mA (DC)
Switching delay time	≤ 40 ms

Features

- Offshore and salt water firm, high protection IP 67
- TTL output driver for cable length up to 500 m
- Electronic speed monitoring
- Circuit breaker with up to three selectable threshold speeds
- EURO flange B10 / solid shaft $\varnothing 11$ mm
- Terminal boxes, turn by 180°

Optional

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

Technical data - mechanical design

Size (flange)	$\varnothing 115$ mm
Shaft type	$\varnothing 11$ mm solid shaft
Admitted shaft load	≤ 300 N axial ≤ 450 N radial
Flange	EURO flange B10
Protection DIN EN 60529	IP 67
Operating speed	≤ 5000 rpm
Range of switching speed (ns)	3x 200...5000 rpm
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm ²
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	$-20...+85^\circ\text{C}$
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 11 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C5-M (CX) according to ISO 12944-2
Connection	2x terminal box 3x terminal box (with option M)
Weight approx.	2.7 kg, 2.9 kg (with option M)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

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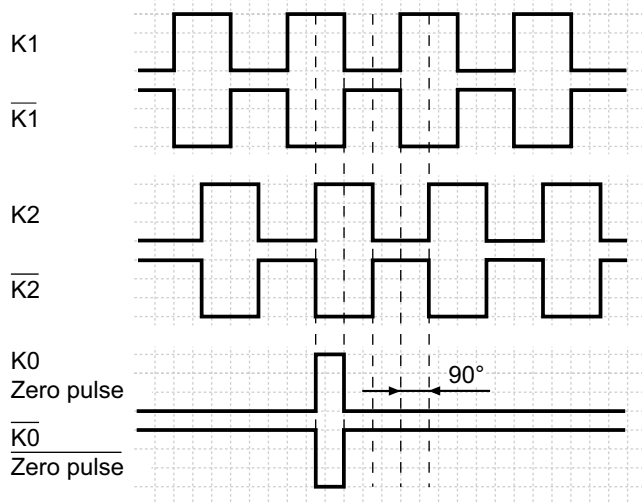
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Output signals

At positive rotating direction



Option EMS: LED status / Error output

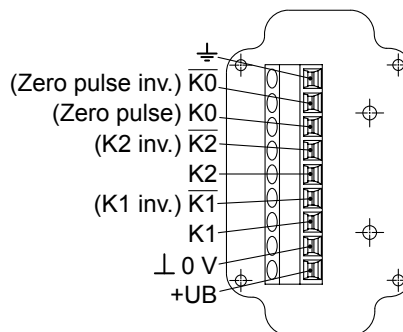
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output driver (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection or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

* Only at rotating device

Terminal assignment

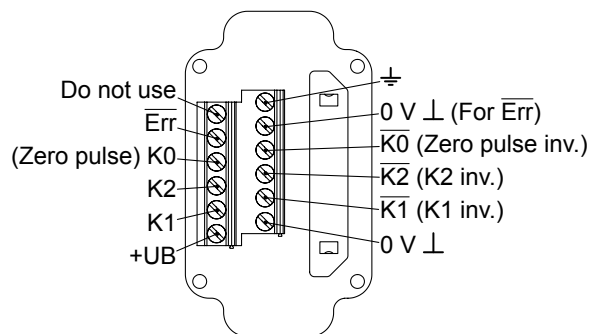
View A

Connecting terminal terminal box POG 11



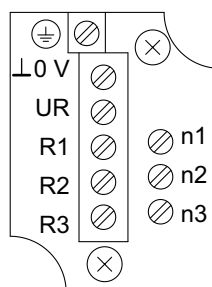
Option EMS: View A

Connecting terminal terminal box POG 11.2



View B

Connecting terminal electronic speed switch ESL 93



3 transistor outputs
For connecting to a relay modul,
for example ES 93 R (accessory)

Combination

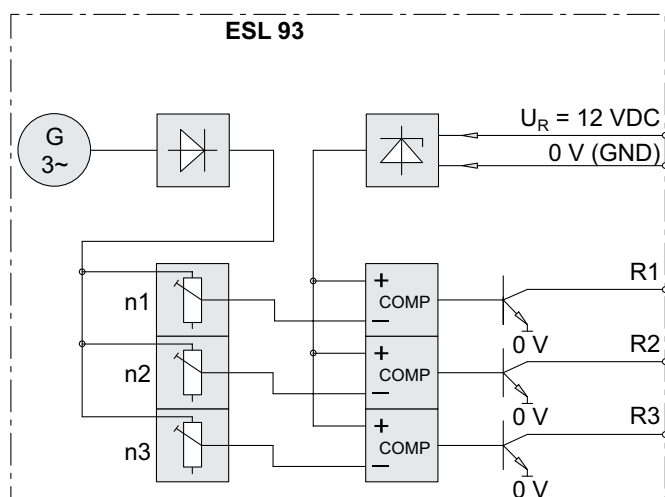
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Solid shaft with EURO flange B10

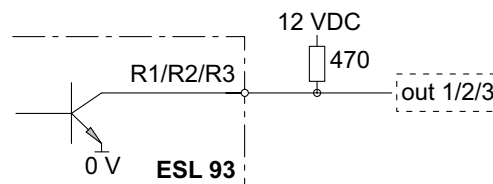
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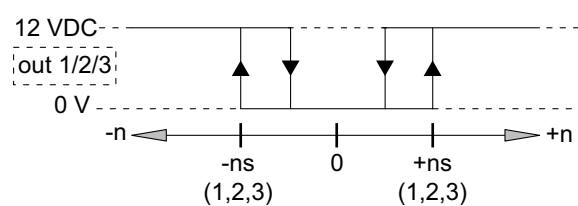
Block circuit diagram



Recommended output circuit



Switching characteristics



n = speed
ns = adjusted switching speed

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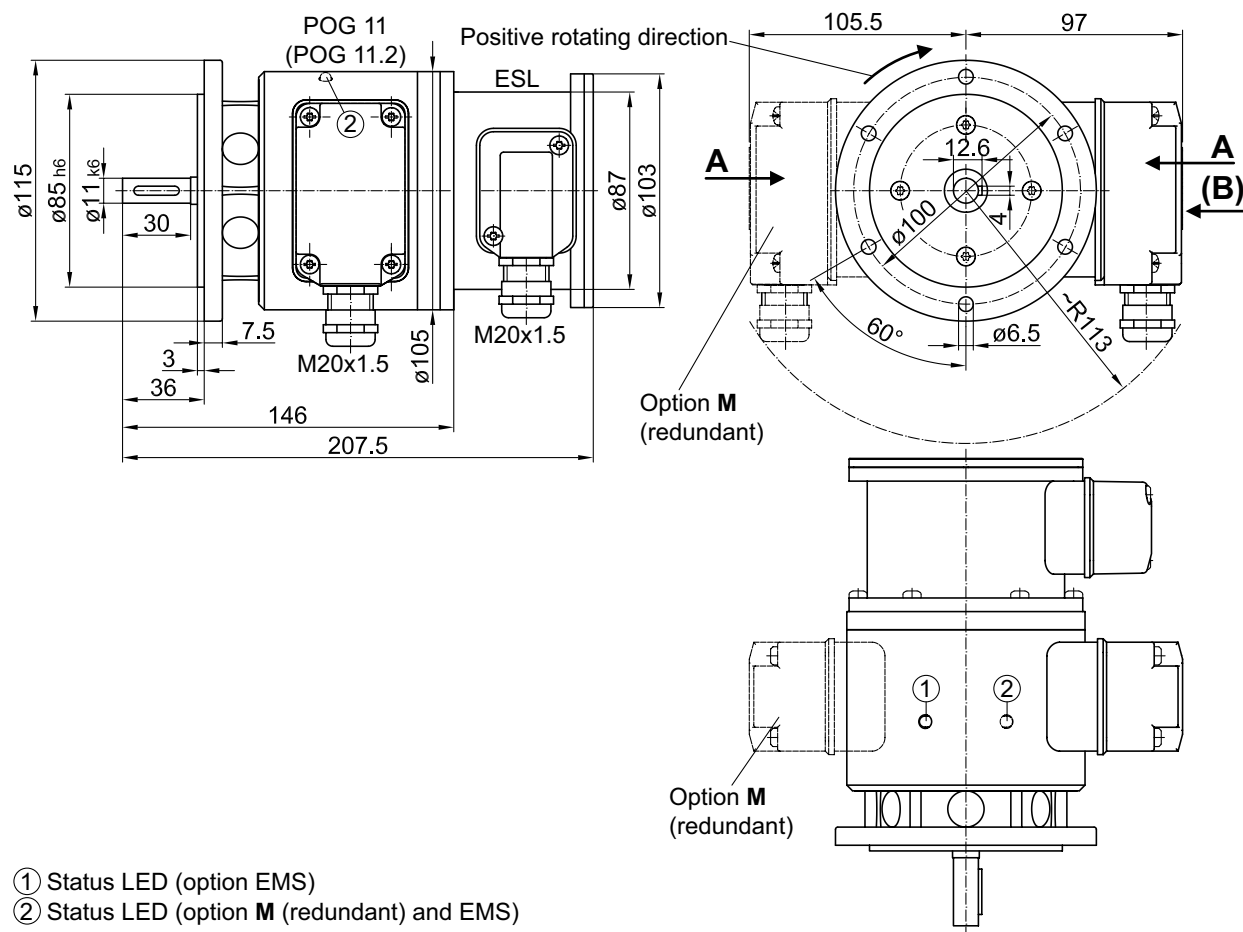
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Dimensions

EURO flange B10



Housing foot B3

