

# Combination

Encoder with integrated electronic speed switch

Solid shaft with EURO flange B10

300...5000 pulses per revolution

POG 10 + ESL 93



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## Features

- 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 - 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° $\pm$ 20°
Duty cycle	40...60 %
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 (speed switches)

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

## 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 DIN EN 60529	IP 66
Operating speed	$\leq$ 5000 rpm
Range of switching speed (ns)	3x 200...5000 rpm
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm <sup>2</sup>
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-20...+85 °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 C4 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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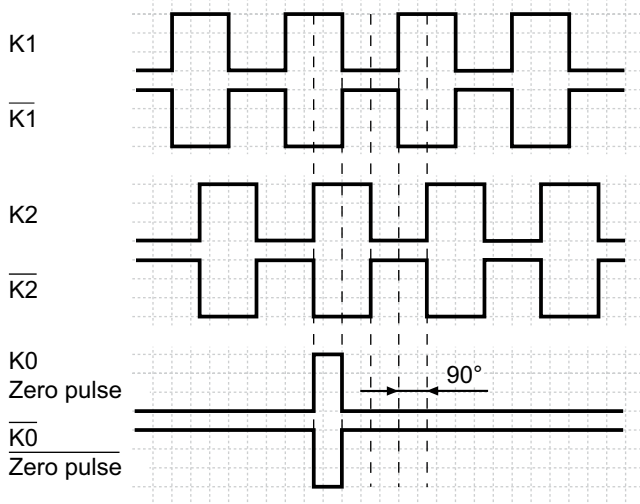
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## Output signals

At positive rotating direction



## Option EMS: LED status / Error output

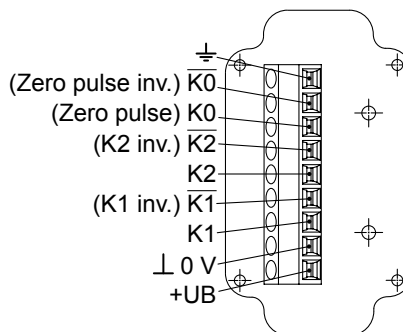
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output driver (Error output = LOW)
Flash light green	Device o.k., rotating (Error output = HIGH)
Green	Device o.k., stopped (Error output = HIGH)
No light	No voltage supply connection or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

\* Only at rotating device

## Terminal assignment

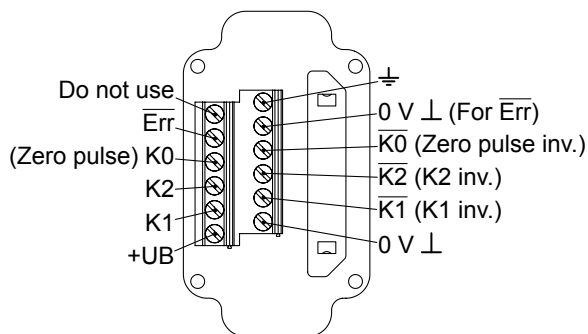
### View A

Connecting terminal terminal box POG 10



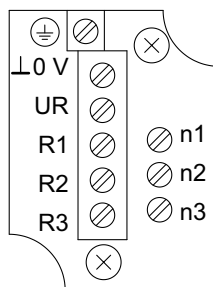
### Option EMS: View A

Connecting terminal terminal box POG 10.2



### View B

Connecting terminal electronic speed switch ESL 93



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

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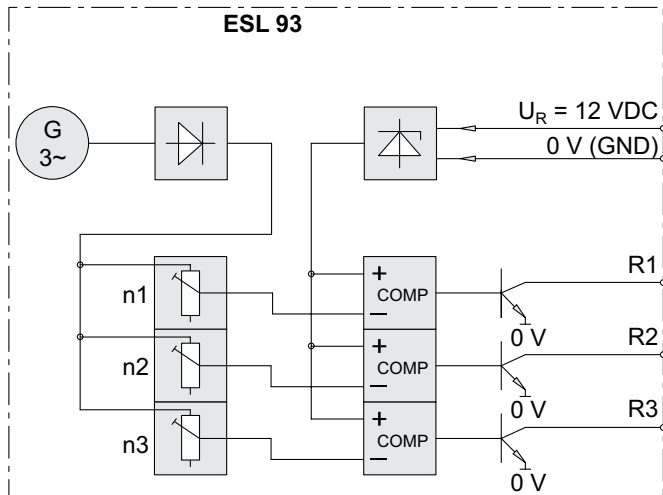
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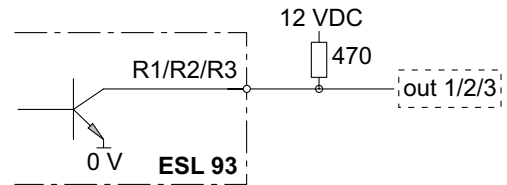
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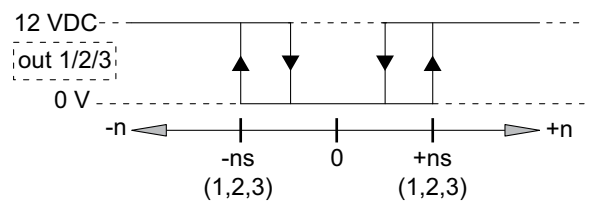
## Block circuit diagram



## Recommended output circuit



## Switching characteristics



$n$  = speed

$ns$  = adjusted switching speed

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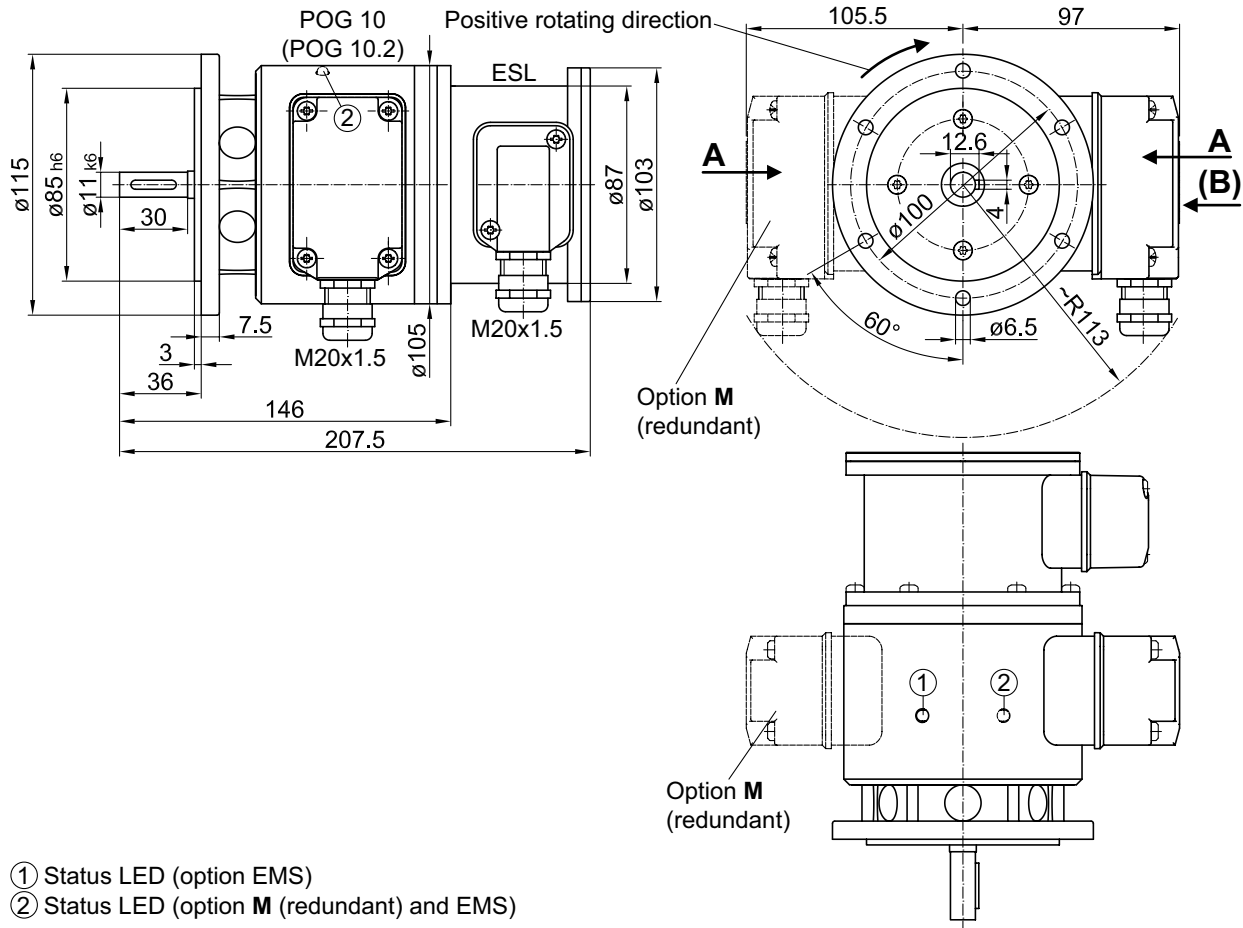
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## Dimensions

### EURO flange B10



### Housing foot B3

