

Combination

Encoder with integrated electronic speed switch

Solid shaft with EURO flange B10

300...5000 pulses per revolution

POG 9 + ESL



POG 9 + ESL

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)

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°
Scan ratio	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 (only EMS)
Output stages	HTL-P (power linedriver) TTL/RS422
Sensing method	Optical

Technical data - electrical ratings (speed switches)

Switching accuracy	\pm 4 % (\leq 1500 rpm) \pm 2 % ($>$ 1500 rpm)
Switching hysteresis	\approx 30 % of switching speed
Switching delay time	\leq 40 ms

POG 9 + ESL 90

Switching outputs	1 output, speed control
Output switching capacity	\leq 6 A / 250 VAC; \leq 1 A / 48 VDC
Minimum switching current	100 mA

POG 9 + ESL 93

Voltage supply	12 VDC \pm 10 %
Consumption w/o load	\leq 5 mA
Switching outputs	3 outputs, speed control
Current each output	40 mA (DC)

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 DIN EN 60529	IP 56
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm ²
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-20...+85 °C
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 Complies to ISO 12944-5:1998 Protective paint systems (C4)
Connection	Terminal box
Weight approx.	2 kg
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE
POG 9 + ESL 90	
Speed (n)	\leq 6000 rpm
Range of switching speed (ns)	650...6000 rpm
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Speed (n)	\leq 5000 rpm
Range of switching speed (ns)	3x 200...5000 rpm

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Part number

Encoder with speed switch ESL 90

POG9 **DN** **+ ESL90**

Switching speed (ns)
... 650...6000 rpm

Voltage supply / signals
I 9...30 VDC / output stage HTL with inverted signals
TTL 5 VDC / output stage TTL with inverted signals
R 9...30 VDC / output stage TTL with inverted signals

Pulse number - see table

Output signals
DN K1, K2, K0

EMS - Enhanced Monitoring System
Without EMS
.2 With EMS

Pulse number

300	1000	2048	4096
500	1024	2500	5000
512	1200	3072	

Other pulse numbers on request.
* Please specify the exact switching speed in addition to the part number (factory setted threshold).

Accessories

Connectors and cables

HEK 8	Sensor cable for encoders
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Mounting accessories

K 35	Spring washer coupling for solid shaft ø6...12 mm
K 50	Spring washer coupling for solid shaft ø11...16 mm
K 60	Spring washer coupling for solid shaft ø11...22 mm

Diagnostic accessories

HENQ 1100	Analyzer for encoders
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Relay module for POG 9 + ESL 93

ES 93 R	Relay modul
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Part number

Encoder with speed switch ESL 93

POG9

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 DN

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 + ESL93

Switching speed 3 (ns3)

... 200...5000 rpm

Switching speed 2 (ns2)

... 200...5000 rpm

Switching speed 1 (ns1)

... 200...5000 rpm

Voltage supply / signals

I 9...30 VDC / output stage HTL with inverted signals

TTL 5 VDC / output stage TTL with inverted signals

R 9...30 VDC / output stage TTL with inverted signals

Pulse number - see table

Output signals

DN K1, K2, K0

EMS - Enhanced Monitoring System

Without EMS

.2 With EMS

Pulse number

300	1000	2048	4096
500	1024	2500	5000
512	1200	3072	

Other pulse numbers on request.

Please indicate the exact switching rotation speeds
(permanent parameter defined at works).

Combination

Encoder with integrated electronic speed switch

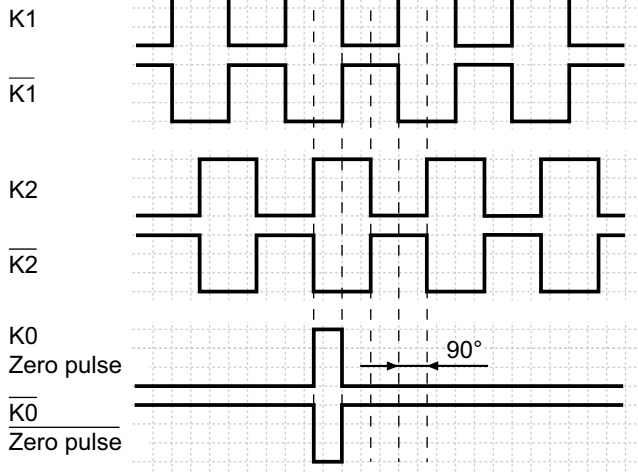
Solid shaft with EURO flange B10

300...5000 pulses per revolution

POG 9 + ESL

Output signals

At positive rotating direction



Option EMS: LED status / Error output

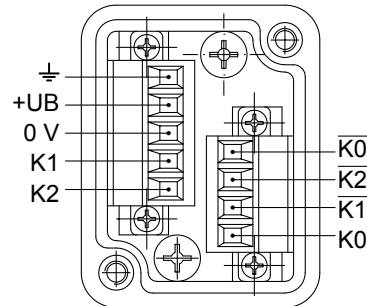
Flash light red*	Error of signal sequence, zero pulse or pulses (Error output = HIGH-LOW alternation)
Red	Overload output driver (Error output = LOW)
Flash light green	Encoder o.k., rotating (Error output = HIGH)
Green	Encoder o.k., stopped (Error output = HIGH)
No light	No output voltage connection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

* Only at rotating encoder

Terminal assignment

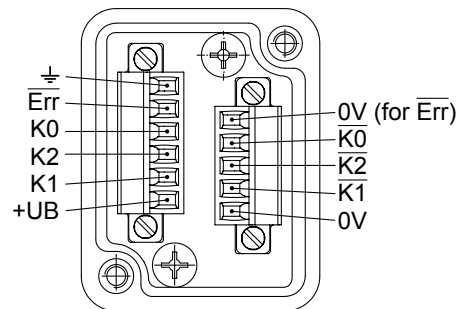
View A

Connecting terminal in terminal box POG 9



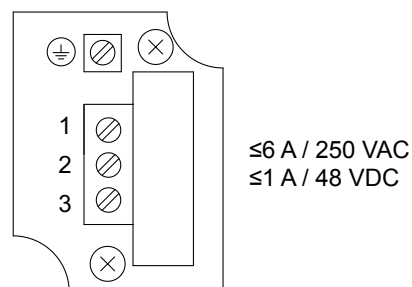
Option EMS: View A

Connecting terminal in terminal box POG 9.2



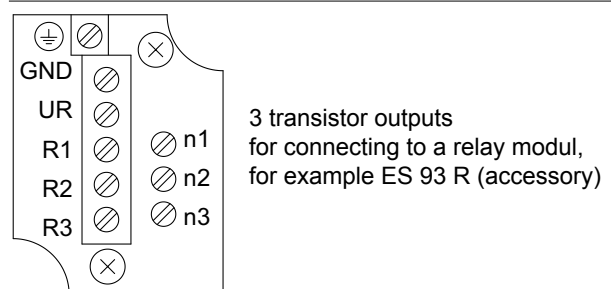
View B

Connecting terminal electronic speed switch ESL 90



View B

Connecting terminal electronic speed switch ESL 93



Combination

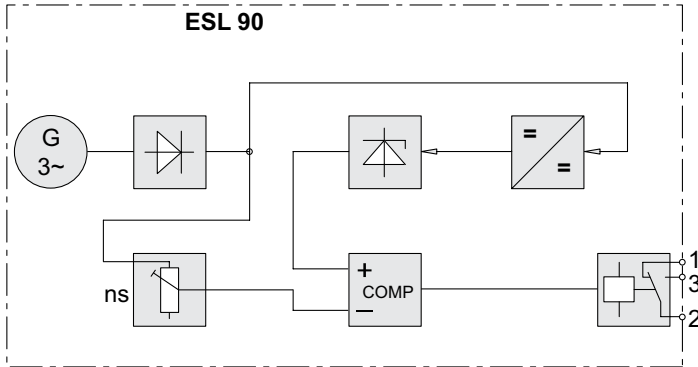
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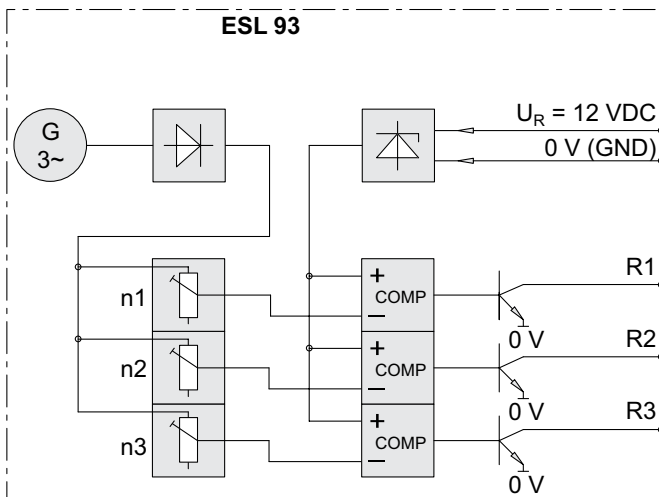
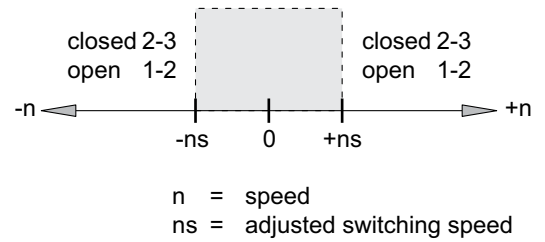
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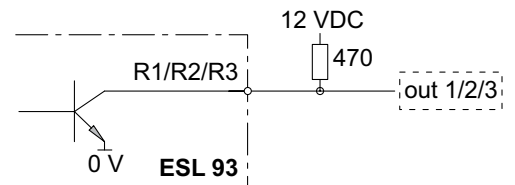
Block circuit diagram



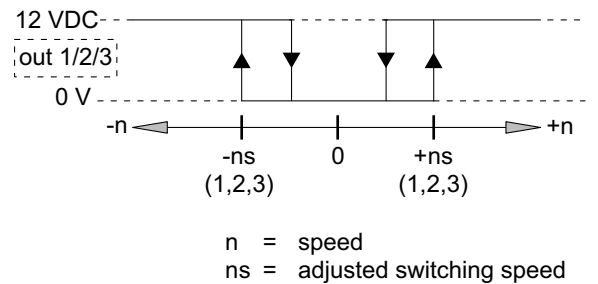
Switching characteristics



Recommended output circuit



Switching characteristics



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Dimensions

