

POG 9 + ESL 90

Encoder with integrated electronic speed switch

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

Overview

- TTL output driver for cable length up to 550 m
- Electronic speed monitoring
- Circuit breaker with one selectable threshold speed
- EURO flange B10 / solid shaft \varnothing 11 mm
- Terminal boxes, turn by 180°



Technical data

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 switch)

Switching accuracy	\pm 4 % (\leq 1500 rpm) \pm 2 % ($>$ 1500 rpm)
Switching hysteresis	= 30 % of switching speed
Switching outputs	1 output, speed control
Output switching capacity	\leq 6 A / 250 VAC; \leq 1 A / 48 VDC (EAC: $<$ 50 VAC / 75 VDC)
Minimum switching current	100 mA
Switching delay time	\leq 40 ms

Technical data - mechanical design

Size (flange)	\varnothing 115 mm
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Technical data - mechanical design

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 6000 rpm
Range of switching speed (ns)	650...6000 rpm
Operating torque typ.	3 Ncm
Rotor moment of inertia	220 gcm ²
Material	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 for ambient conditions C4 according to ISO 12944-2
Connection	Terminal box
Weight approx.	2 kg
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Optional

- Function control with EMS (Enhanced Monitoring System)

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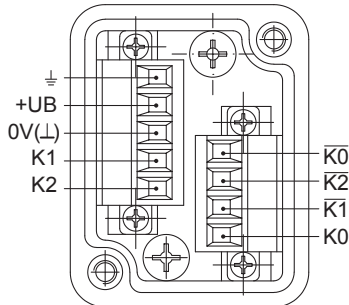
Encoder with integrated electronic speed switch

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Terminal assignment

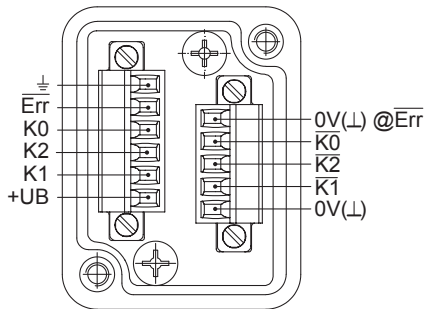
View A (see dimension)

Connecting terminal terminal box encoder



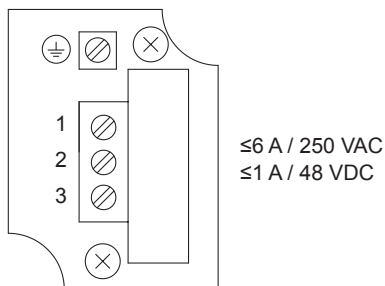
Option EMS: View A (see dimension)

Connecting terminal terminal box encoder



View B (see dimension)

Connecting terminal speed switch ESL 90



Terminal significance

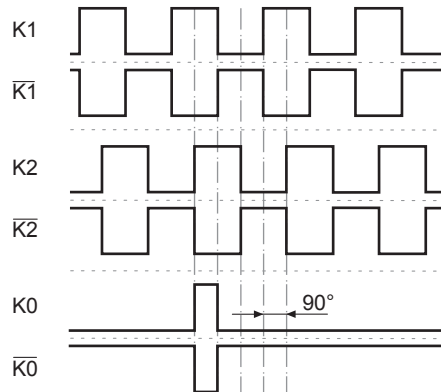
Encoder incremental

+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)

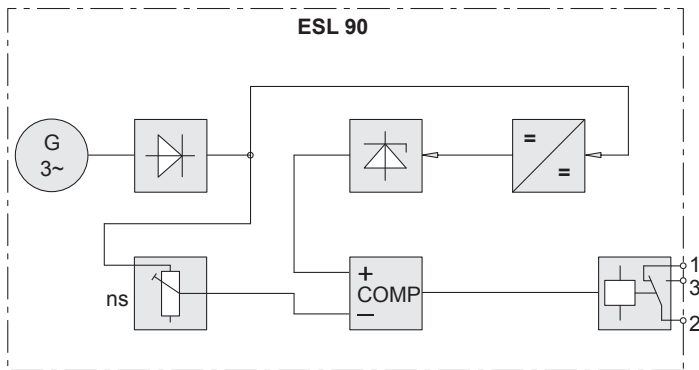
* Only at rotating device

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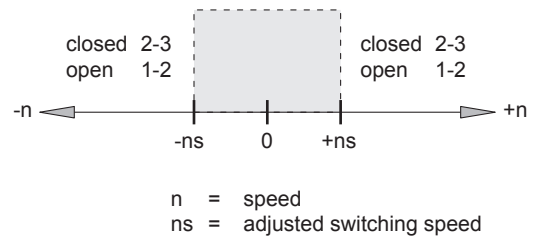
Solid shaft with EURO flange B10 / 300...5000 pulses per revolution

Block circuit diagram



Speed switch ESL 90

Switching characteristics

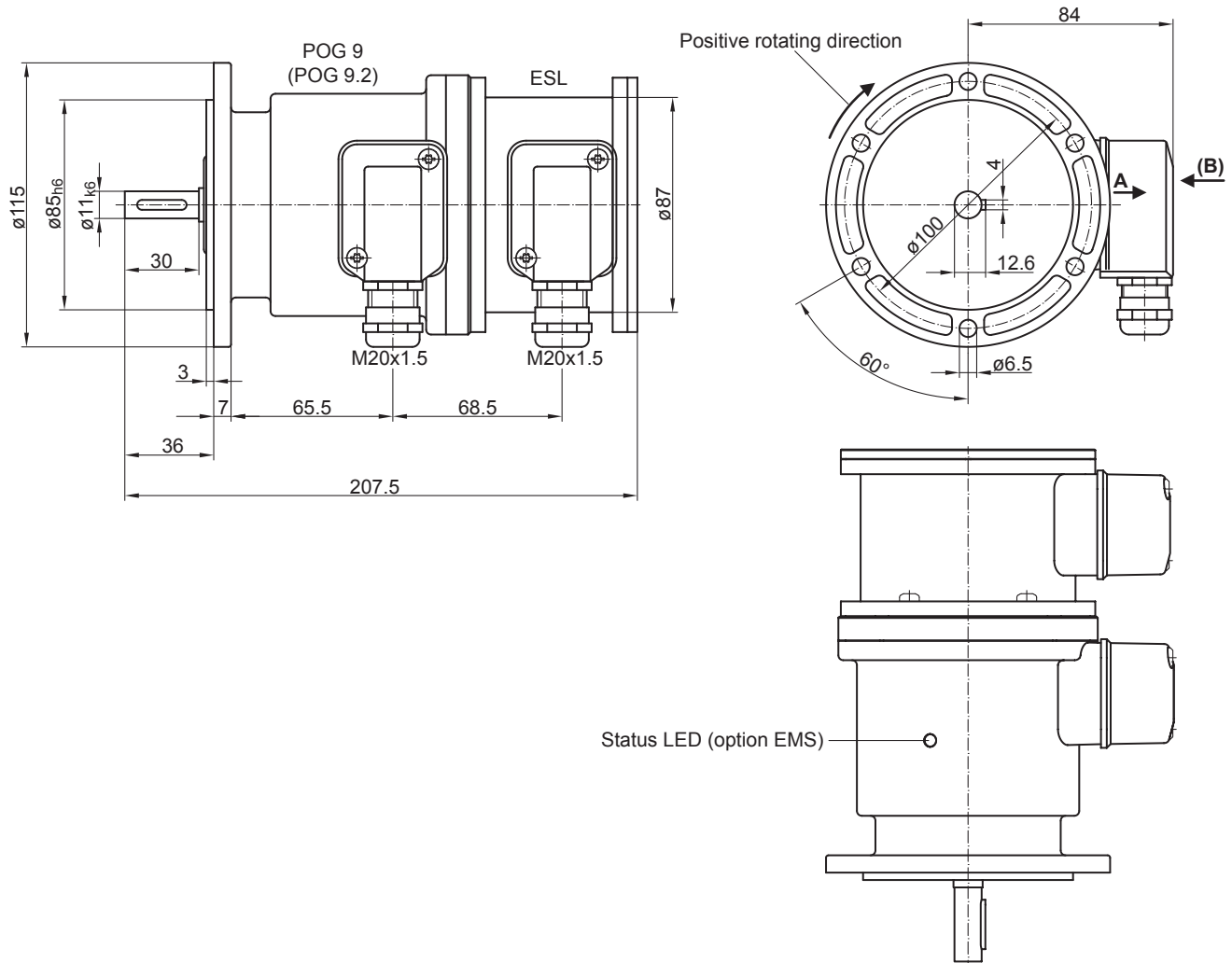


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Dimensions



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Encoder with integrated electronic speed switch

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Ordering reference

	POG9	##	DN	####	###	+ESL90	...
Product							
Incremental encoder + Speed switch	POG9						
EMS - Enhanced Monitoring System							
Without EMS							
With EMS		.2					
Output signals							
K1, K2, K0			DN				
Pulse number⁽¹⁾							
300				300			
500				500			
512				512			
1000				1000			
1024				1024			
1200				1200			
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 / output stage TTL with inverted signals					TTL		
9...30 VDC / output stage TTL with inverted signals					R		
Version speed switch							
Electronic speed switch, 1 output, speed control						+ESL90	
Switching speed (ns)							
650...6000 rpm ⁽²⁾							...

(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 mm)

Spring disk coupling K 50 (shaft \varnothing 11...16 mm)

Spring disk coupling K 60 (shaft \varnothing 11...22 mm)