

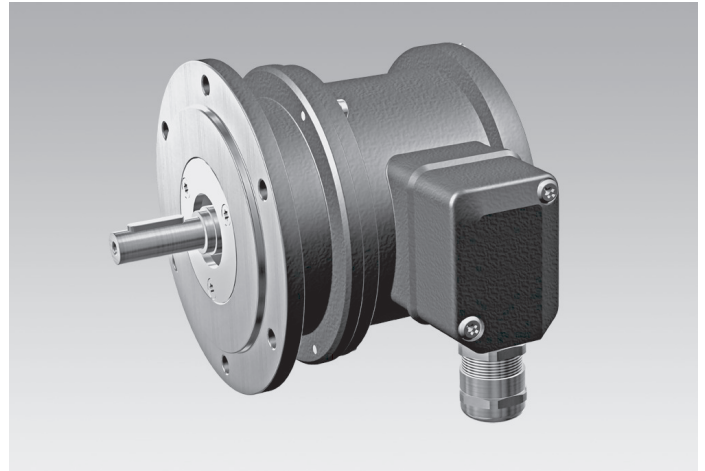
ES 93

Electronic speed switch

3 adjustable switching speeds

Overview

- Electronic speed monitoring
- Circuit breaker with three selectable threshold speeds
- Three independent transistor outputs, adjusting $\pm 10\%$ above 1000 rpm



Technical data

Technical data - electrical ratings

Voltage supply	12 VDC $\pm 10\%$
Consumption w/o load	≤ 5 mA
Switching accuracy	$\pm 4\%$ (≤ 1500 rpm) $\pm 2\%$ (> 1500 rpm)
Switching hysteresis	= 30 % of switching speed
Switching outputs	3 outputs, speed control
Current each output	40 mA (DC)
Switching delay time	≤ 40 ms
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Technical data - mechanical design

Size (flange)	$\varnothing 115$ mm
Shaft type	$\varnothing 11$ mm solid shaft

Technical data - mechanical design

Flange	EURO flange B10
Protection DIN EN 60529	IP 55
Speed (n)	≤ 5000 rpm
Range of switching speed (ns)	200...5000 rpm
Operating torque	≤ 2 Ncm
Rotor moment of inertia	0,125 kgcm ²
Admitted shaft load	≤ 150 N axial ≤ 250 N radial
Operating temperature	-20...+85 °C
Weight approx.	1,3 kg
Connection	Terminal box
Material	Housing: aluminium die-cast Shaft: stainless steel

Optional

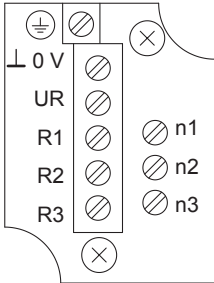
- As integrated speed switch type ESL for combination with encoders and/or tachogenerators
- Relay module ES 93 R with three relay outputs with isolated changeover contacts

ES 93

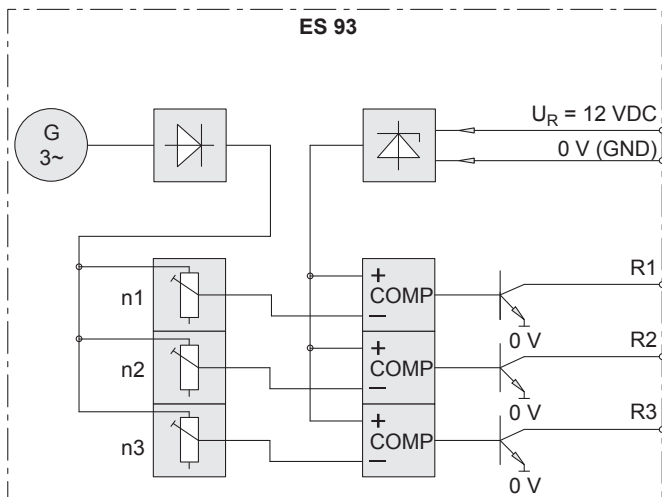
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Terminal assignment

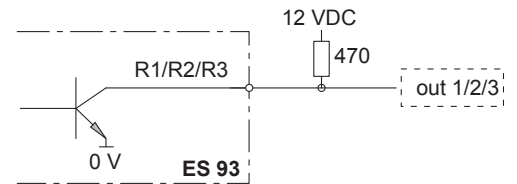
View A (see dimension)
Connecting terminal



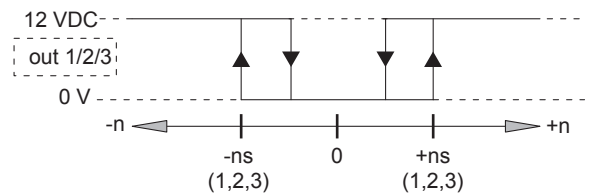
Block circuit diagram



Recommended output circuit



Switching characteristics



n = speed
ns = adjusted switching speed

Speed switch ES 93

ES 93

Electronic speed switch

3 adjustable switching speeds

Ordering reference

Product	Speed switch	ES93
Switching speed 1 (ns1)	200...5000 rpm ⁽¹⁾	ES93
Switching speed 2 (ns2)	200...5000 rpm ⁽¹⁾				...
Switching speed 3 (ns3)	200...5000 rpm ⁽¹⁾				...

(1) 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)

Relay moduls

11054943 Relay modul ES 93 R