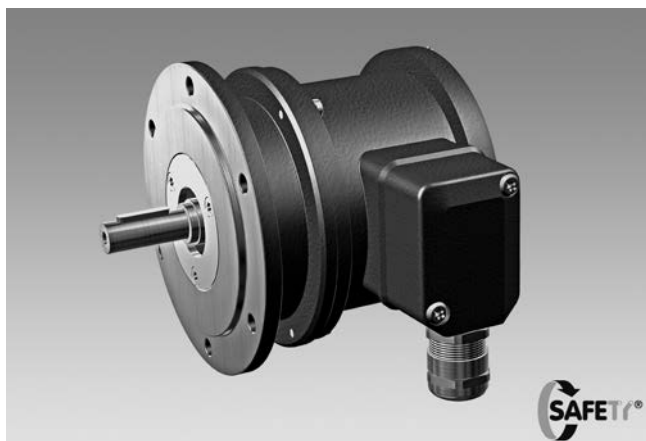


Speed switches

Electronic speed switch

3 adjustable switching speeds

ES 93



ES 93

Features

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

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

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	$\approx 30\%$ 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
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
Materials	Housing: aluminium die-cast Shaft: stainless steel

Speed switches

Electronic speed switch

3 adjustable switching speeds

ES 93

Part number

ES93

Switching speed (ns)
... 200...5000 rpm

Accessories

Mounting accessories

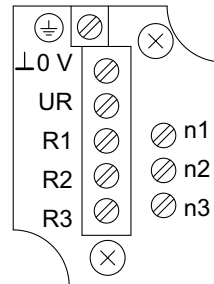
K 35	Spring washer coupling for solid shaft $\varnothing 6...12$ mm
K 50	Spring washer coupling for solid shaft $\varnothing 11...16$ mm
K 60	Spring washer coupling for solid shaft $\varnothing 11...22$ mm

Relay module

11054943	Relay modul ES 93 R
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Terminal assignment

View A - Connecting terminal



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

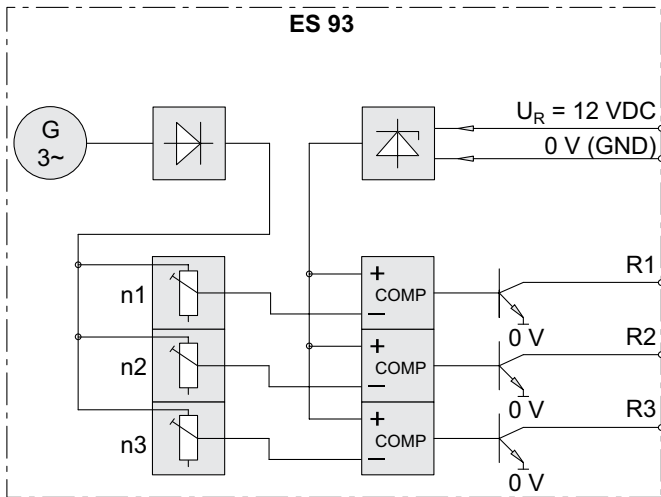
Speed switches

Electronic speed switch

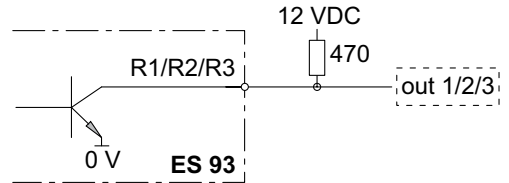
3 adjustable switching speeds

ES 93

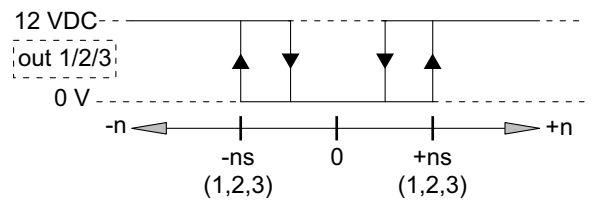
Block circuit diagram



Recommended output circuit



Switching characteristics



n = speed
ns = adjusted switching speed

Dimensions

