

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 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

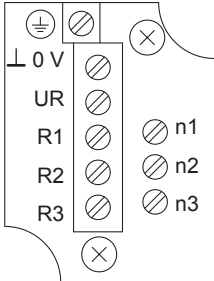
- As integrated speed switch type ESL for combination with encoders and/or tachogenerators
- Relay module ES 93 R with three relay outputs with isolated changeover contacts

ES 93

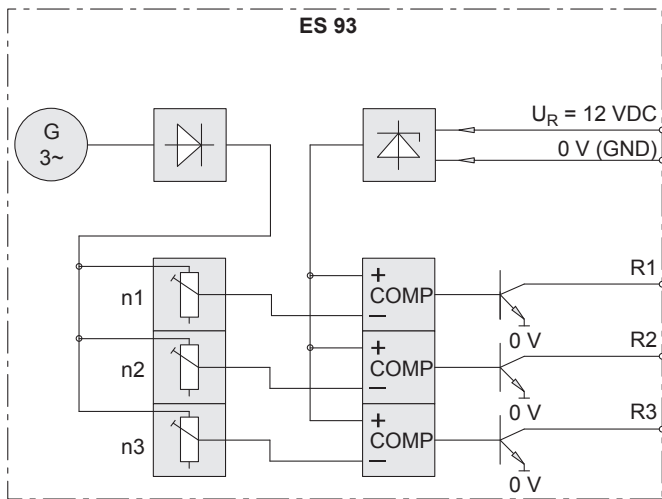
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Terminal assignment

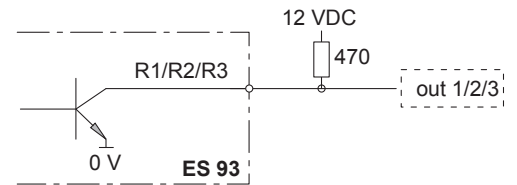
View A (see dimension)
Connecting terminal



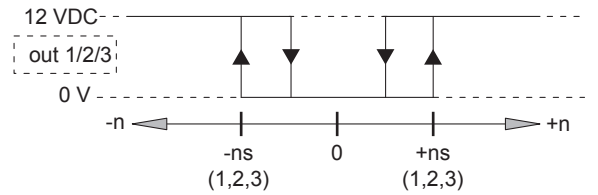
Block circuit diagram



Recommended output circuit



Switching characteristics



n = speed
ns = adjusted switching speed

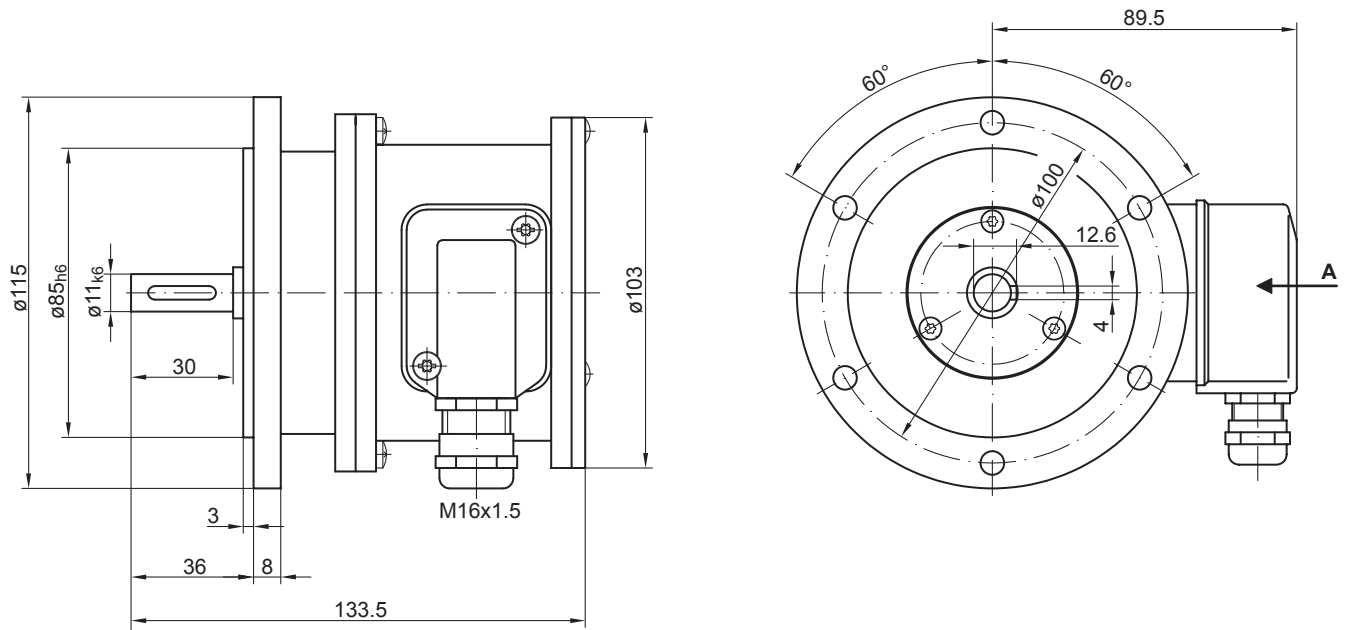
Speed switch ES 93

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Dimensions



ES 93

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Ordering reference

| | | | | |
|--------------------------------|-------------|-----|-----|-----|
| | ES93 | ... | ... | ... |
| Product | | | | |
| Speed switch | ES93 | | | |
| Switching speed 1 (ns1) | | | | |
| 200...5000 rpm ⁽¹⁾ | | ... | | |
| 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