

Combination

Tachogenerator with integrated centrifugal switch

Solid shaft $\varnothing 6$ mm with flange

TDP 0,09 + FSL



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Features

- Low response time
- Open circuit voltage 10...60 mV per rpm
- Solid shaft $\varnothing 6$ mm with flange
- High signal quality due to patented LongLife technology
- Mechanical speed monitoring based on centrifugal force

Technical data - electrical ratings

| | |
|-----------------------|--------------|
| Interference immunity | EN 61000-6-2 |
| Emitted interference | EN 61000-6-3 |
| Approval | CE |

Technical data - electrical ratings (tachogenerator)

| | |
|--------------------------------|--|
| Reversal tolerance | ≤ 0.1 % |
| Linearity tolerance | ≤ 0.15 % |
| Temperature coefficient | ± 0.05 %/K (open-circuit) |
| Isolation class | B |
| Calibration tolerance | ± 3 % |
| Climatic test | Humid heat, constant (IEC 60068-2-3, Ca) |
| Performance | 1.2 W (speed ≥ 3000 rpm) |
| Armature-circuit time-constant | < 25 μ s |
| Open-circuit voltage | 10...60 mV per rpm |

Technical data - electrical ratings (centrifugal switch)

| | |
|-------------------------------------|---|
| Range of switching speed (ns) | 850...4500 rpm ($\Delta n = 2$ rpm/s) |
| Switching accuracy | ± 4 % ($\Delta n = 2$ rpm/s); $\geq +20$ % ($\Delta n = 1500$ rpm/s) |
| Switching deviation cw-ccw rotation | ≤ 3 % |
| Switching hysteresis | ≈ 40 % of switching speed |
| Switching outputs | 1 output, speed control |
| Output switching capacity | ≤ 6 A / 230 VAC ≤ 1 A / 125 VDC |
| Minimum switching current | 50 mA |

Technical data - mechanical design

| | |
|-------------------------------|---|
| Size (flange) | $\varnothing 85$ mm |
| Shaft type | $\varnothing 6$ mm solid shaft |
| Shaft loading | ≤ 40 N axial ≤ 60 N radial |
| Protection DIN EN 60529 | IP 56 |
| Speed (n) | $\leq 1.25 \cdot ns$ |
| Range of switching speed (ns) | 850...4500 rpm ($\Delta n = 2$ rpm/s) |
| Torque | 1 Ncm |
| Rotor moment of inertia | 0.5 kgcm ² |
| Materials | Housing: aluminium die-cast Shaft: stainless steel |
| Operating temperature | -30...+130 °C |
| Resistance | IEC 60068-2-6 Vibration 5 g, 10-2000 Hz IEC 60068-2-27 Shock 150 g, 1 ms |
| Connection | 2x terminal box |
| Weight approx. | 1.6 kg |

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Part number

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- Switching speed (ns)
- 6 ... 850...949 rpm ($\Delta n = 2$ rpm/s)
- 5 ... 950...1099 rpm ($\Delta n = 2$ rpm/s)
- 4 ... 1100...1299 rpm ($\Delta n = 2$ rpm/s)
- 3 ... 1300...1799 rpm ($\Delta n = 2$ rpm/s)
- 2 ... 1800...2499 rpm ($\Delta n = 2$ rpm/s)
- 1 ... 2500...4500 rpm ($\Delta n = 2$ rpm/s)
- Open-circuit voltage
- 1 10 mV per rpm
- 2 20 mV per rpm
- 7 30 mV per rpm
- 3 40 mV per rpm
- 8 50 mV per rpm
- 9 60 mV per rpm

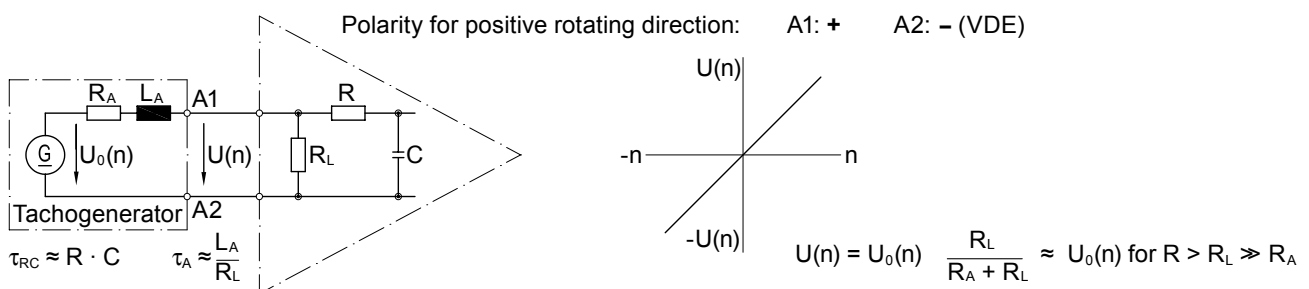
Please indicate the exact switching rotation speed (permanent parameter defined at works).

Data according to type

| Type | Off-load voltage U_0 [mV/rpm] | Minimum load required depending on speed range [rpm] | | | Maximum operating speed n_{max} [rpm] | Armature resistance R_A (20°C) [Ω] | Armature inductance L_A [mH] |
|-------------|---------------------------------------|--|-------------------------|-------------------------------|---|--|--------------------------------------|
| | | 0-3000 R_L [kΩ] | 0-6000 R_L [kΩ] | 0- n_{max} R_L [kΩ] | | | |
| TDP0,09LT-1 | 10 | ≥ 0.75 | ≥ 0.3 | ≥ 8.5 | 10000 | 20 | 18 |
| TDP0,09LT-2 | 20 | ≥ 3 | ≥ 12 | ≥ 34 | 10000 | 82 | 75 |
| TDP0,09LT-7 | 30 | ≥ 6.8 | ≥ 27 | ≥ 75 | 10000 | 190 | 167 |
| TDP0,09LT-3 | 40 | ≥ 12 | ≥ 48 | ≥ 134 | 10000 | 320 | 300 |
| TDP0,09LT-8 | 50 | ≥ 19 | ≥ 75 | ≥ 134 | 8000 | 492 | 465 |
| TDP0,09LT-9 | 60 | ≥ 27 | ≥ 108 | ≥ 134 | 6700 | 750 | 675 |

Superimposed ripple (for $\tau_{RC} = 0.7$ ms): $\leq 0.55\%$ (peak-peak) $\leq 0.25\%$ (rms)

Replacement switching diagram



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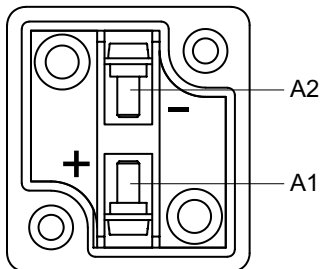
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Terminal assignment

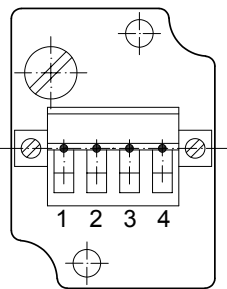
View A - Connecting terminal TDP 0,09

Polarity for positive direction of rotation

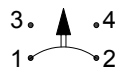


View B

Connecting terminal mechanical centrifugal switch FSL



Make contact



Break contact

Accessories

Mounting accessories

K 35 Spring washer coupling
for solid shaft $\varnothing 6...12$ mm

Carbon brushes

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Dimensions

