

Tachogenerators

Shaft $\varnothing 14$ to $\varnothing 18$ mm with flange

With own bearings

TDP 13



TDP 13

Features

- High response speed
- Open circuit voltage 20...200 mV per rpm
- Shaft $\varnothing 14$ -18 mm with flange
- Top signal quality over the total rotational speed range by patented Longlife technique
- Recognition of sense of rotation
- No auxiliary energy source required

Optional

- Two separate tacho voltages (TDPZ 13)
- Second shaft end
- Combined with centrifugal switch FSL

Technical data - electrical ratings

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	40 W (speed > 2000 rpm)
Armature-circuit time-constant	< 13 μ s
Open-circuit voltage	20...200 mV per rpm

Technical data - mechanical design

Dimensions (flange)	$\varnothing 126$ mm
Shaft	$\varnothing 14$...18 mm
Protection DIN EN 60529	IP 55
Torque	2.5...0 Ncm
Rotor moment of inertia	0.4 kgcm ²
Shaft loading	≤ 80 N axial ≤ 100 N radial
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-30...+130 °C
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Weight approx.	8.5 kg
Connection	Terminal box

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Part number

TDP 13.06 LT -

Open-circuit voltage

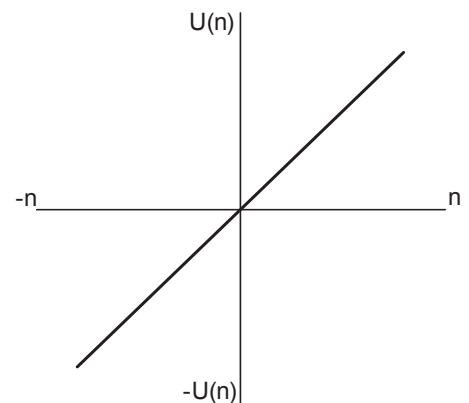
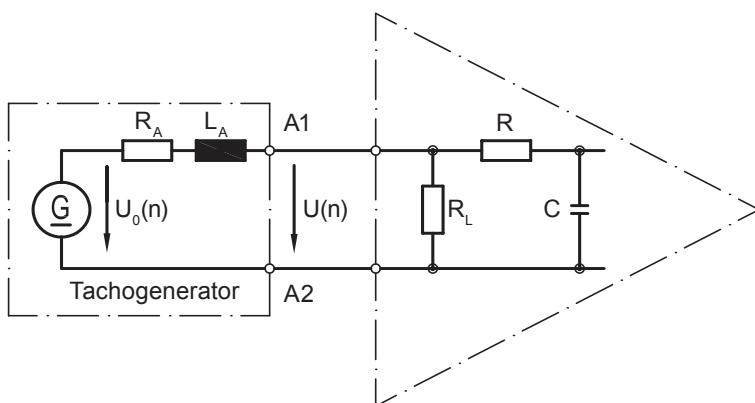
- 15 20 mV per rpm
- 17 65 mV per rpm
- 6 100 mV per rpm
- 3 175 mV per rpm
- 2 200 mV per rpm

Data according to type

Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0 - 1,000	0 - 3,000	0 - n_{max}			
	U_0 [mV/rpm]	R_L [k Ω]	R_L [k Ω]	R_L [k Ω]	n_{max} [rpm]	$R_A(20^\circ C)$ [Ω]	L_A [mH]
TDP 13.06 LT - 15	20	≥ 0.02	≥ 0.09	≥ 0.4	6,000	2.1	9
TDP 13.06 LT - 17	65	≥ 0.2	≥ 0.9	≥ 4	6,000	21	85
TDP 13.06 LT - 6	100	≥ 0.5	≥ 2.5	≥ 9	6,000	46	200
TDP 13.06 LT - 3	175	≥ 1.5	≥ 7	≥ 10	3,500	150	610
TDP 13.06 LT - 2	200	≥ 2	≥ 9	---	3,000	208	800

Superimposed ripple (for $\tau_{RC} = 0.7$ ms): ≤ 0.5 % (peak-peak) ≤ 0.25 % (rms)

Replacement switching diagram



$$\tau_{RC} \approx R \cdot C \quad \tau_A \approx \frac{L_A}{R_L}$$

$$U(n) = U_0(n) \frac{R_L}{R_A + R_L} \approx U_0(n) \text{ for } R > R_L \gg R_A$$

Polarity for positive rotating direction: A1: + A2: - (VDE)

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