

Tachogenerators

Solid shaft $\varnothing 6$ mm with flange

With own bearings

TDP 0,09, TDPZ 0,09



TDP 0,09

Features

- Low response time
- Open circuit voltage 10...60 mV per rpm
- Redundant output (TDPZ)
- Solid shaft $\varnothing 6$ mm with flange
- Very high resistance to shock
- High signal quality due to patented LongLife technology
- Robust design

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	TDP: 1.2 W (speed ≥ 3000 rpm) TDPZ: 2x 0,3 W (speed ≥ 3000 rpm)
Armature-circuit time-constant	< 25 μ s (TDP) < 8 μ s (TDPZ)
Open-circuit voltage	TDP: 10...60 mV per rpm TDPZ: 10...40 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Technical data - mechanical design

Size (flange)	$\varnothing 85$ mm
Shaft type	$\varnothing 6$ mm solid shaft
Protection DIN EN 60529	IP 56
Operating speed	≤ 10000 rpm ≤ 9000 U/min (TDPZ)
Torque	1.5 Ncm
Rotor moment of inertia	0.25 kgcm ² (TDP) 0.29 kgcm ² (TDPZ)
Admitted shaft load	≤ 40 N axial ≤ 60 N radial
Materials	Housing: stainless steel / plastic Shaft: stainless steel
Operating temperature	-30...+130 °C
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 1 ms
Weight approx.	1.1 kg (TDP), 1.5 kg (TDPZ)
Connection	Terminal box

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Part number

TDP 0,09LT-

Open-circuit voltage

- 1 10 mV per rpm
- 2 20 mV per rpm
- 7 30 mV per rpm (not available for TDPZ)
- 3 40 mV per rpm
- 8 50 mV per rpm (not available for TDPZ)
- 9 60 mV per rpm (not available for TDPZ)

Design

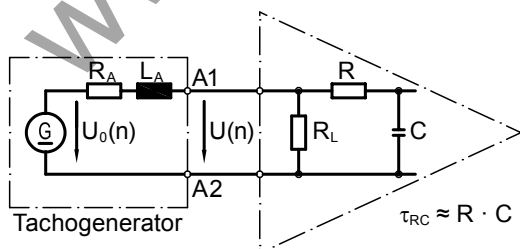
Tachogenerator

Z Twin tachogenerator

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 [k Ω]	0-6000 R_L [k Ω]	0- n_{max} R_L [k Ω]			
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
Twin tachogenerator with redundant output (The data refer to each of the two tachogenerator outputs)							
TDPZ0,09LT-1	10	≥ 3	≥ 12	≥ 28	9000	35	23
TDPZ0,09LT-2	20	≥ 12	≥ 48	≥ 109	9000	140	88
TDPZ0,09LT-3	40	≥ 48	≥ 192	≥ 433	9000	698	350
Superimposed ripple (for $\tau_{RC} = 0.7$ ms):		$\leq 0.55\%$ (peak-peak)		$\leq 0.25\%$ (rms)			

Replacement switching diagram



Polarity for positive rotating direction:
A1 (TDPZ: 1A1, 2A1): + (VDE)
A2 (TDPZ: 1A2, 2A2): - (VDE)

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

$\tau_A \approx \frac{L_A}{R_L}$

Tachogenerators

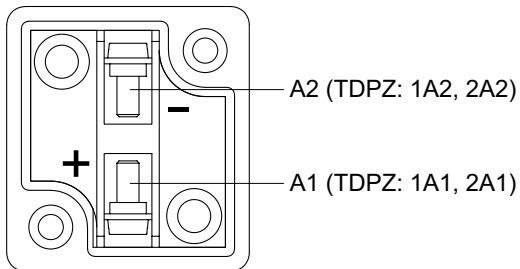
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Terminal assignment

View A - Connecting terminal

Polarity for positive direction of rotation



Accessories

Carbon brushes

Mounting accessories

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

