

# 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	$\leq 0.1$ %
Linearity tolerance	$\leq 0.15$ %
Temperature coefficient	$\pm 0.05$ %/K (open-circuit)
Isolation class	B
Calibration tolerance	$\pm 3$ %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

#### TDP 0,09

Performance	1.2 W (speed $\geq 3000$ rpm)
Armature-circuit time-constant	$< 25$ $\mu$ s
Open-circuit voltage	10...60 mV per rpm

#### TDPZ 0,09

Performance	2x 0,3 W (speed $\geq 3000$ rpm)
Armature-circuit time-constant	$< 8$ $\mu$ s
Open-circuit voltage	10...40 mV per rpm

#### Technical data - mechanical design

Size (flange)	$\varnothing 85$ mm
Shaft type	$\varnothing 6$ mm solid shaft
Protection DIN EN 60529	IP 56
Torque	1.5 Ncm
Shaft loading	$\leq 40$ N axial $\leq 60$ N radial
Materials	Housing: stainless steel / plastic Shaft: stainless steel
Operating temperature	$-30 \dots +130$ °C
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 300 g, 1 ms

#### TDP 0,09

Operating speed	$\leq 10000$ rpm
Rotor moment of inertia	0.25 kgcm <sup>2</sup>
Weight approx.	1.1 kg
Connection	Terminal box

#### TDPZ 0,09

Operating speed	$\leq 9000$ rpm
Rotor moment of inertia	0.29 kgcm <sup>2</sup>
Weight approx.	1.5 kg
Connection	2x terminal box

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## Solid shaft ø6 mm with flange

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#### Part number

#### Tachogenerator

TDP0,09LT-

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

#### Twin tachogenerator

TDPZ0,09LT-

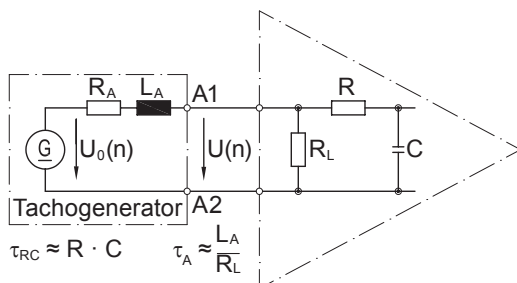
Open-circuit voltage

- 1 10 mV per rpm
- 2 20 mV per rpm
- 3 40 mV per rpm

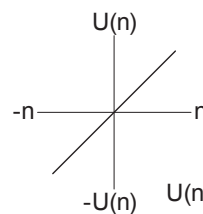
#### Data according to type

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
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):		≤0.55% (peak-peak)		≤0.25% (rms)			

#### Replacement switching diagram



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



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

# Tachogenerators

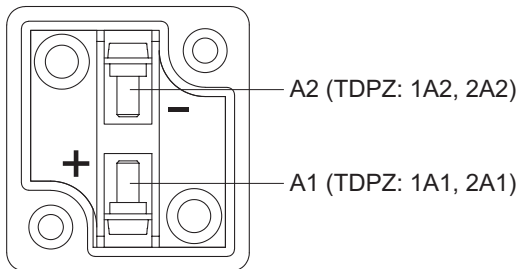
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## Terminal assignment

**View A** - Connecting terminal

Polarity for positive direction of rotation



## Accessories

Carbon brushes

## Mounting accessories

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

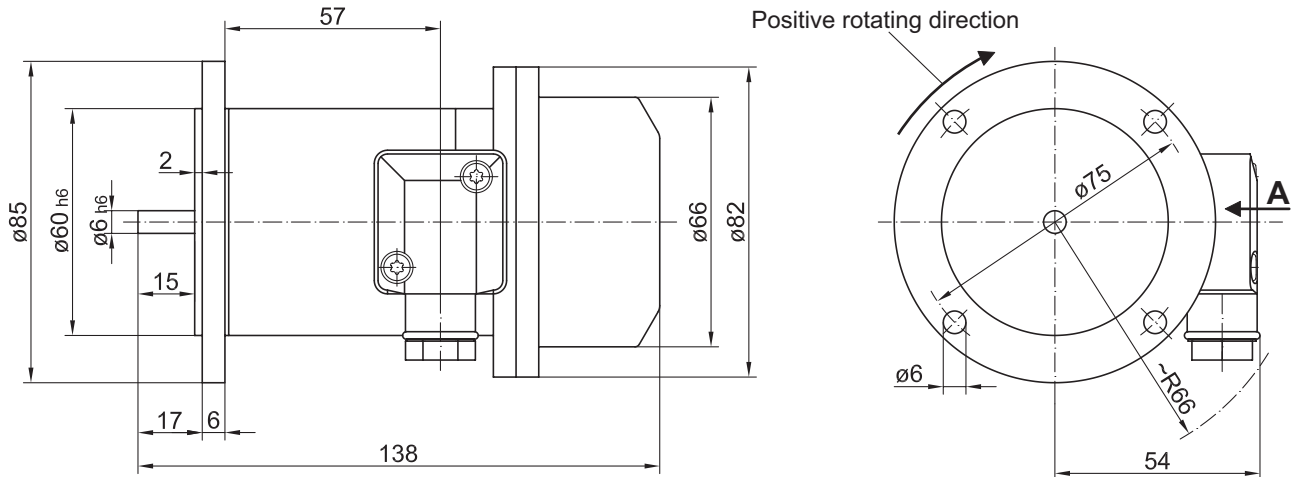
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## Dimensions

### TDP 0,09 - standard version



### TDPZ 0,09 - version with redundant output

