

Tachogenerators

End shaft $\varnothing 12-16$ mm or cone shaft $\varnothing 17$ mm (1:10)

Housing $\varnothing 95$ mm, bearingless configuration

GTB 9



GTB 9

Features

- High response speed
- Open circuit voltage 10...60 mV per rpm
- End shaft $\varnothing 12-16$ mm or cone shaft $\varnothing 17$ mm (1:10)
- Top signal quality over the total rotational speed range by patented Longlife technique
- High protection IP 68
- Connector output
- Recognition of sense of rotation
- No auxiliary energy source required

Technical data - electrical ratings

Reversal tolerance	≤ 0.1 %
Linearity tolerance	≤ 0.15 %
Temperature coefficient	± 0.05 %/K (open-circuit)
Isolation class	B
Calibration tolerance	± 5 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	0.3 W (speed > 5000 rpm)
Armature-circuit time-constant	< 9 μ s

GTB 9.06

Open-circuit voltage	10...20 mV per rpm
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GTB 9.16

Open-circuit voltage	60 mV per rpm
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Technical data - mechanical design

Dimensions (flange)	$\varnothing 95$ mm
Shaft	$\varnothing 12...16$ mm end shaft $\varnothing 17$ mm cone shaft 1:10
Protection DIN EN 60529	IP 68
Torque	0.35...0 Ncm
Rotor moment of inertia	0.95 kgcm ²
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 DIN EN 60068-2-27 Shock 100 g, 6 ms
Weight approx.	0.7 kg
Connection	Connector

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Part number

GTB 9.06 L / 4

GTB 9.16 L / 4 60

Design
- Cylindrical shaft
K Cone shaft

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Open-circuit voltage

10 10 mV per rpm
20 20 mV per rpm

Open-circuit voltage

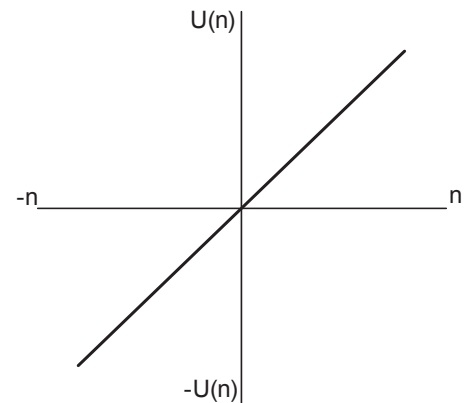
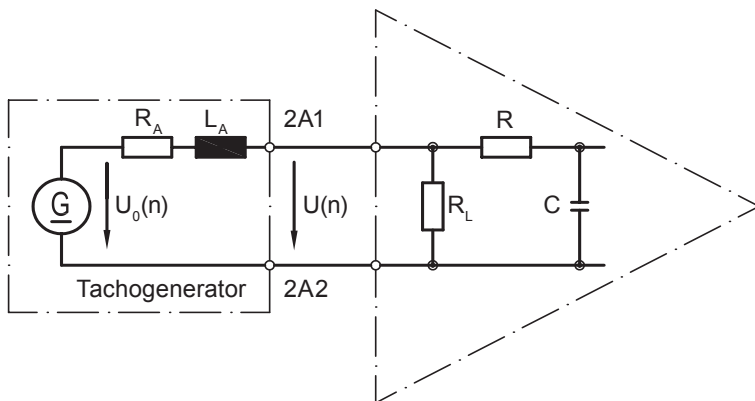
60 60 mV per rpm

Data according to type

Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0 - 3,000	0 - 6,000	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°C) [Ω]	L_A [mH]
GTB 9.06 L / 410	10	≥ 5	≥ 12	≥ 27	9,000	105	40
GTB 9.06 L / 420	20	≥ 20	≥ 48	≥ 108	9,000	370	169
GTB 9.16 L / 460	60	≥ 60	≥ 144	---	6,000	340	275

Superimposed ripple (for $\tau_{RC} = 0.3$ 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: 2A1: + 2A2: - (VDE)

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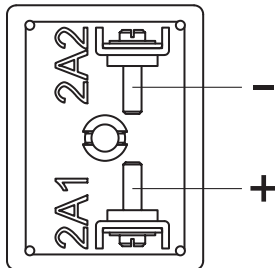
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Terminal assignment

View A - Connecting terminal

Polarity for positive direction of rotation



Accessories

Mounting cone

Carbon brushes

