

Tachogenerators

Blind hollow shaft $\varnothing 12...16$ mm or cone shaft $\varnothing 17$ mm (1:10)

Housing $\varnothing 95$ mm, bearingless configuration

GTB 9



GTB 9

Features

- Low response time
- Open circuit voltage 10...60 mV per rpm
- Blind hollow shaft $\varnothing 12...16$ mm or cone shaft $\varnothing 17$ mm (1:10)
- High signal quality due to patented LongLife technology
- High protection IP 68
- Connector output
- 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
Open-circuit voltage	GTB 9.06: 10...20 mV per rpm GTB 9.16: 60 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Technical data - mechanical design

Size (flange)	$\varnothing 95$ mm
Shaft type	$\varnothing 12...16$ mm (blind hollow shaft) $\varnothing 17$ mm (cone shaft 1:10)
Protection DIN EN 60529	IP 68
Torque	0.35 Ncm
Rotor moment of inertia	0.95 kgcm ²
Materials	Housing: stainless steel / plastic Shaft: stainless steel
Operating temperature	-30...+130 °C
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Weight approx.	0.7 kg
Connection	Connector

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Part number

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Design
 - Cylindrical shaft
 K Cone shaft

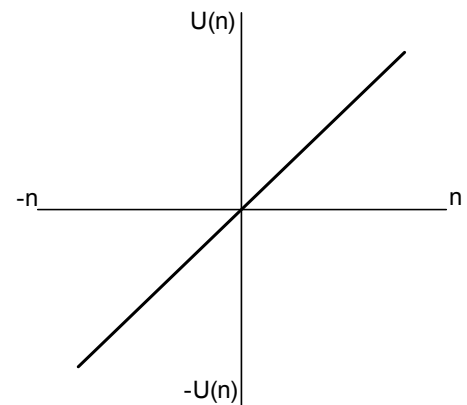
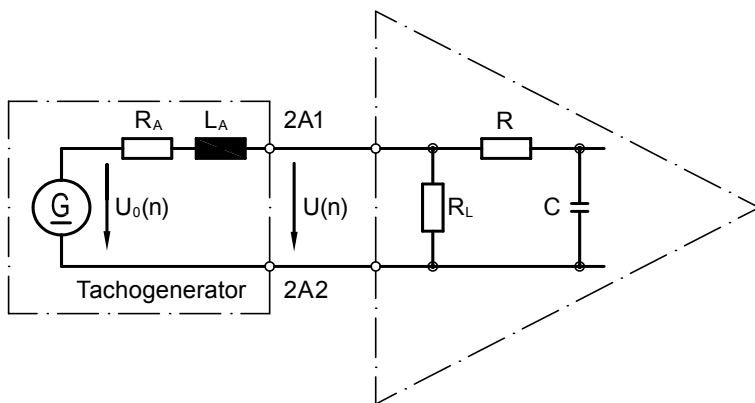
Open-circuit voltage
 .06L/410 10 mV per rpm
 .06L/420 20 mV per rpm
 .16L/460 60 mV per rpm

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	0-6000	0- n_{max}			
GTB9.06L/410	10	≥ 5	≥ 12	≥ 27	9000	105	40
GTB9.06L/420	20	≥ 20	≥ 48	≥ 108	9000	370	169
GTB9.16L/460	60	≥ 60	≥ 144	–	6000	340	275

Superimposed ripple (for $\tau_{RC} = 0.3$ ms): $\leq 0.5\%$ (peak-peak) $\leq 0.25\%$ (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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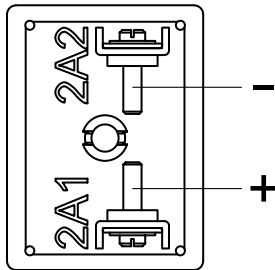
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Terminal assignment

View A - Connecting terminal

Polarity for positive direction of rotation



Accessories

Mounting cone

Carbon brushes

Tachogenerators

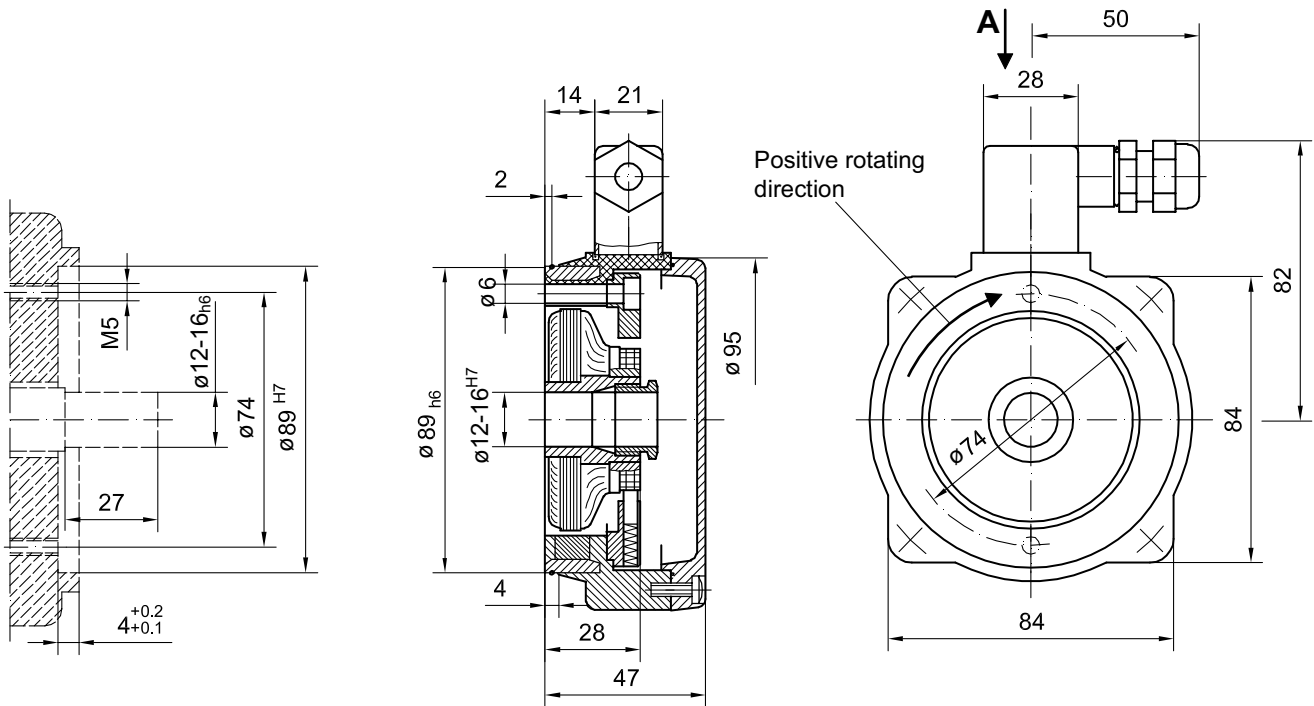
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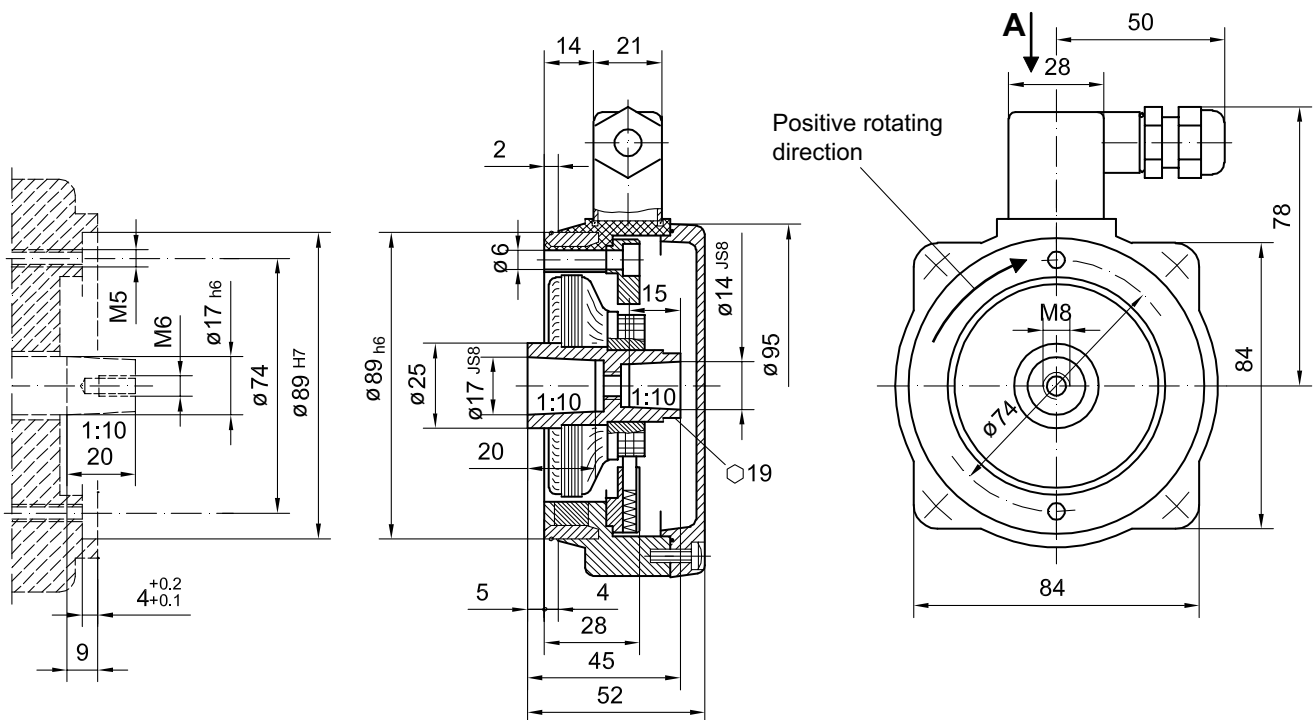
Dimensions

Version with through hollow shaft



HM85M20491

Version with cone shaft



HM85M20484