

# Tachogenerators

Blind hollow shaft ø16 mm

Housing ø95 mm, bearingless configuration

## GTR 9



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### Features

- Low response time
- Open circuit voltage 20...60 mV per rpm
- Blind hollow shaft ø16 mm
- High signal quality due to patented LongLife technology
- 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), optional: 0.005 %/K
Isolation class	B
Calibration tolerance	±5 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	0.9 W (speed ≥5000 rpm)
Armature-circuit time-constant	<5 µs
Open-circuit voltage	20...60 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

### Technical data - mechanical design

Size (flange)	ø95 mm
Shaft type	ø16 mm (blind hollow shaft)
Protection DIN EN 60529	IP 56
Torque	0.35 Ncm
Rotor moment of inertia	1.95 kgcm <sup>2</sup>
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.	1.1 kg
Connection	Connector

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**Part number**

GTR9.16L/4

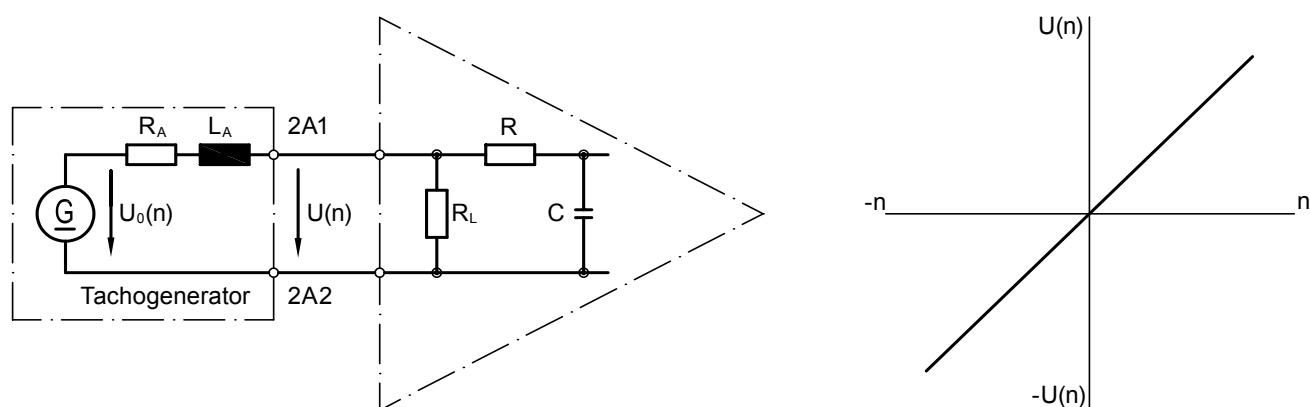
- Open-circuit voltage  
 20 20 mV per rpm  
 30 30 mV per rpm  
 40 40 mV per rpm  
 60 60 mV per rpm

**Data according to type**

Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0-3000	0-6000	0-n <sub>max</sub>	n <sub>max</sub> [rpm]	R <sub>A</sub> (20°C) [Ω]	L <sub>A</sub> [mH]
	U <sub>0</sub> [mV/rpm]	R <sub>L</sub> [kΩ]	R <sub>L</sub> [kΩ]	R <sub>L</sub> [kΩ]	n <sub>max</sub> [rpm]	R <sub>A</sub> (20°C) [Ω]	L <sub>A</sub> [mH]
GTR9.16L/420	20	≥7	≥16	≥36	9000	39	31
GTR9.16L/430	30	≥15	≥36	≥82	9000	84	69
GTR9.16L/440	40	≥27	≥64	≥144	9000	165	122
GTR9.16L/460	60	≥60	≥144	—	6000	340	275

Superimposed ripple (for  $\tau_{RC} = 0.3$  ms):      ≤0.4% (peak-peak)      ≤0.15% (rms)

**Replacement switching diagram**



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

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

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

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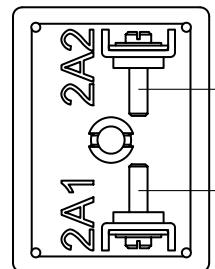
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### Terminal assignment

View A - Connecting terminal

Polarity for positive direction of rotation



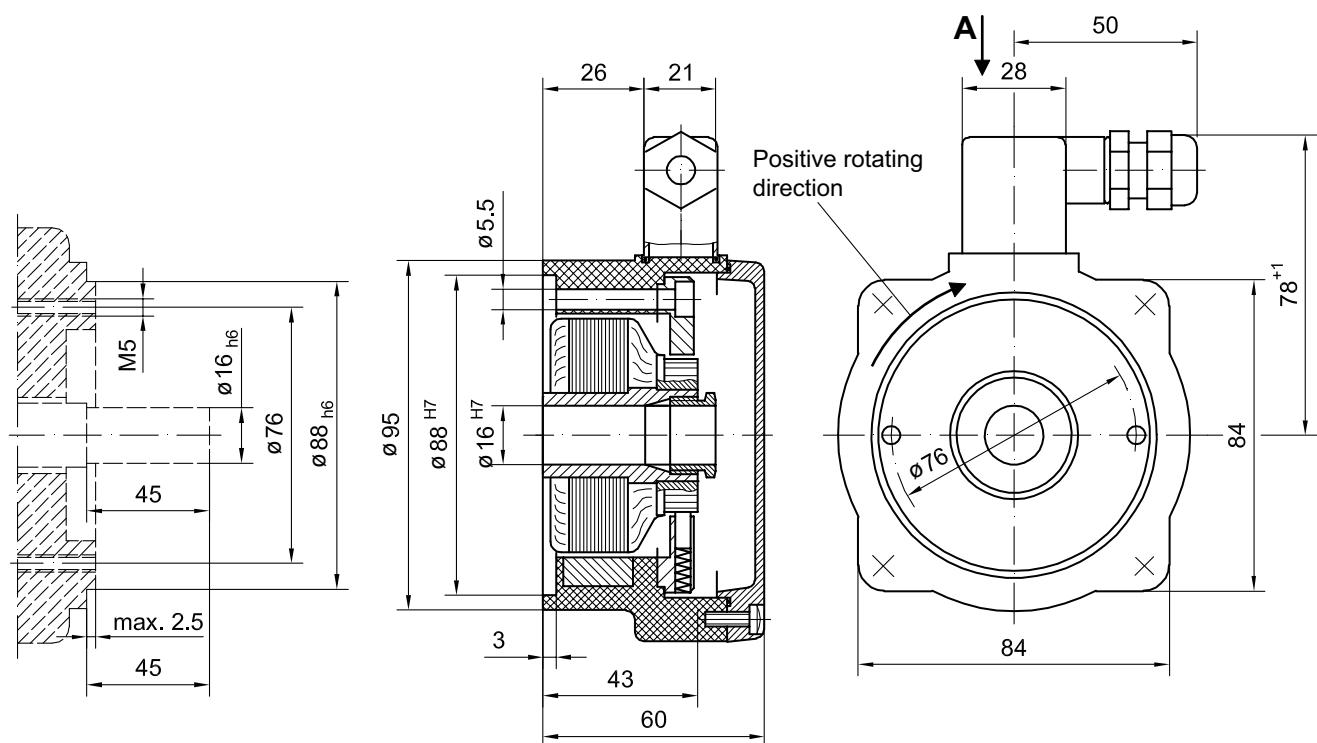
### Accessories

Mounting cone

Carbon brushes

### Dimensions

#### GTR 9.16



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