

# Tachogenerators

End shaft  $\varnothing 16$  mm

Housings  $\varnothing 95$  mm, bearingless configuration

## GTR 9



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### Features

- High response speed
- Open circuit voltage 20...60 mV per rpm
- End shaft  $\varnothing 16$  mm
- Top signal quality over the total rotational speed range by patented Longlife technique
- Connector output
- Recognition of sense of rotation
- No auxiliary energy source required

### Technical data - electrical ratings

Reversal tolerance	$\leq 0.1$ %
Linearity tolerance	$\leq 0.15$ %
Temperature coefficient	$\pm 0.05$ %/K (idle), optional: 0.005 %/K
Isolation class	B
Calibration tolerance	$\pm 5$ %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	0.9 W (speed >5000 rpm)
Armature-circuit time-constant	$< 5$ $\mu$ s
Open-circuit voltage	20...60 mV per rpm

### Technical data - mechanical design

Housing	$\varnothing 95$ mm
Shaft	$\varnothing 16$ mm end shaft
Protection DIN EN 60529	IP 56
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.	1.1 kg
Connection	Connector
Torque	0.35 Ncm
Rotor moment of inertia	1.95 kgcm <sup>2</sup>

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## Part number

GTB 9.16 L / 4

Open-circuit voltage

20 20 mV per rpm

30 30 mV per rpm

40 40 mV per rpm

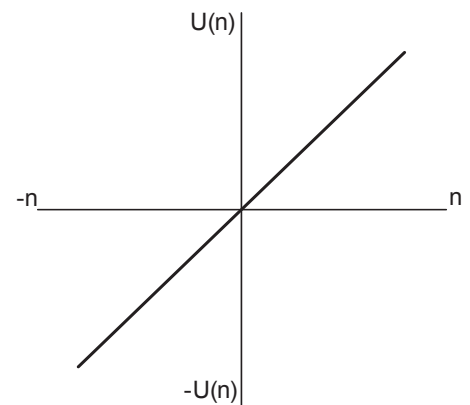
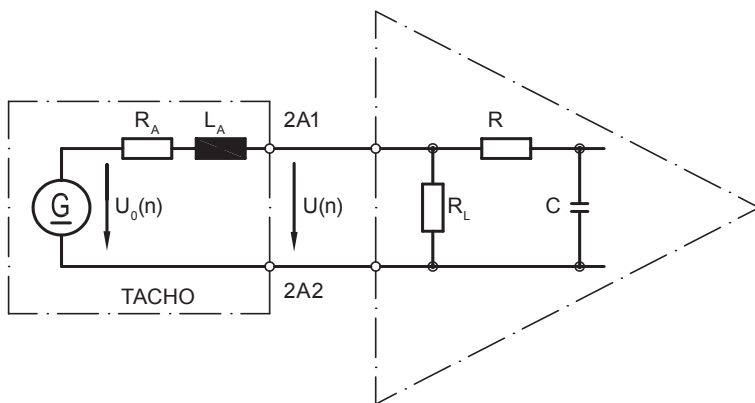
60 60 mV per rpm

## Data according to type

Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0 - 3,000	0 - 6,000	0 - $n_{max}$			
	$U_0$ [mV/rpm]	$R_L$ [k $\Omega$ ]	$R_L$ [k $\Omega$ ]	$R_L$ [k $\Omega$ ]	$n_{max}$ [rpm]	$R_A(20^\circ\text{C})$ [ $\Omega$ ]	$L_A$ [mH]
GTR 9.16 L / 420	20	$\geq 7$	$\geq 16$	$\geq 36$	9,000	39	31
GTR 9.16 L / 430	30	$\geq 15$	$\geq 36$	$\geq 82$	9,000	84	69
GTR 9.16 L / 440	40	$\geq 27$	$\geq 64$	$\geq 144$	9,000	165	122
GTR 9.16 L / 460	60	$\geq 60$	$\geq 144$	----	6,000	340	275

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

## Replacement switching diagram



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

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

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

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### Terminal assignment

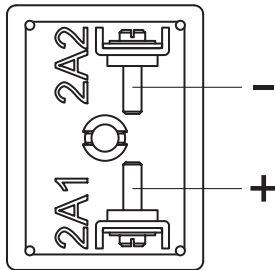
View A - Connecting terminal

Polarity for positive direction of rotation

### Accessories

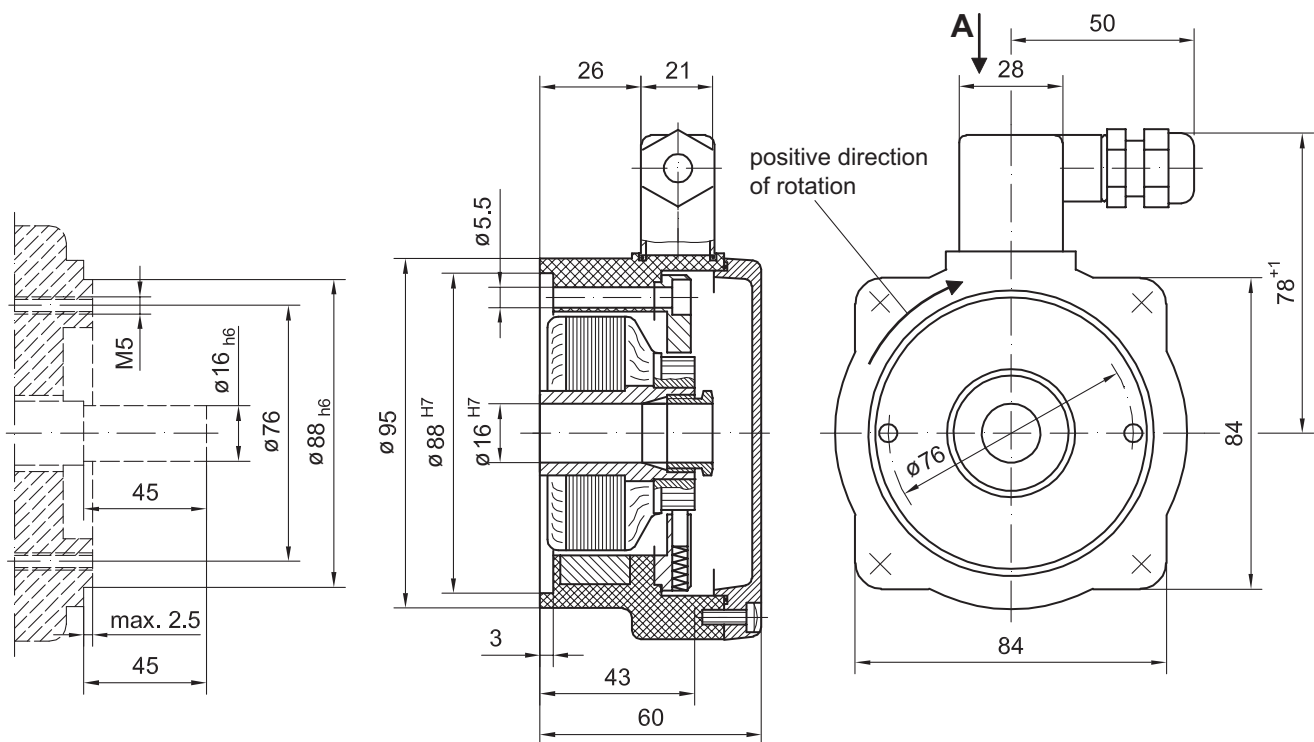
Mounting cone

Carbon brushes



### Dimensions

#### GTR 9.16



HM87M21438

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