Baumer
Passion for Sensors

Tachogenerators

TDP 13, TDPZ 13

Solid shaft ø14...18 mm with flange
With own bearings

Overview

- Low response time
- Open circuit voltage 20...200 mV per rpm
- Solid shaft ø14...18 mm with flange
- High signal quality due to patented LongLife technology
- With own bearings
- No auxiliary energy source required

LongLife® B10® HÜBNER BERLIN A Baumer Brand

Technical data

Technical data - electrical ratings	
Reversal tolerance	≤0.1 %
Linearity tolerance	≤0.15 %
Temperature coefficient	± 0.05 %/K (open-circuit)
Isolation class	B
Calibration tolerance	±3 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	TDP: 40 W (speed ≥2000 rpm) TDPZ: 2x 20 W (speed ≥2000 rpm)
Armature-circuit time-constant	<0.4 µs (TDP) <0.2 µs (TDPZ)
Open-circuit voltage	20...200 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE
Technical data - mechanical design	
Size (flange)	ø120 mm ø165 mm ø175 mm

Technical data - mechanical design	
Shaft type	ø14...18 mm solid shaft
Flange	B5, B5k, B5s, B10 and B10w flange
Protection EN 60529	IP 55
Operating speed	≤6000 rpm
Torque	2.5 Ncm (TDP) 4.1 Ncm (TDPZ)
Rotor moment of inertia	17 kgcm² (TDP) 20 kgcm² (TDPZ)
Admitted shaft load	≤80 N axial ≤100 N radial
Material	Housing: steel 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.	8.5 kg (TDP) 10 kg (TDPZ)
Connection	Terminal box

Optional

- Redundant output (option Z)
- Second shaft end (B14)

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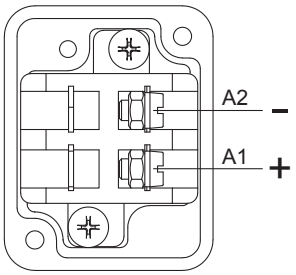
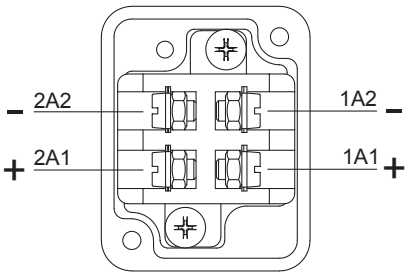
Terminal assignment

View A *(see dimension)*
Connecting terminal tachogenerator TDP
Polarity for positive rotating direction



View A *(see dimension)*
Connecting terminal twin tachogenerator TDPZ
Polarity for positive rotating direction



TDP 13, TDPZ 13

Solid shaft ø14...18 mm with flange
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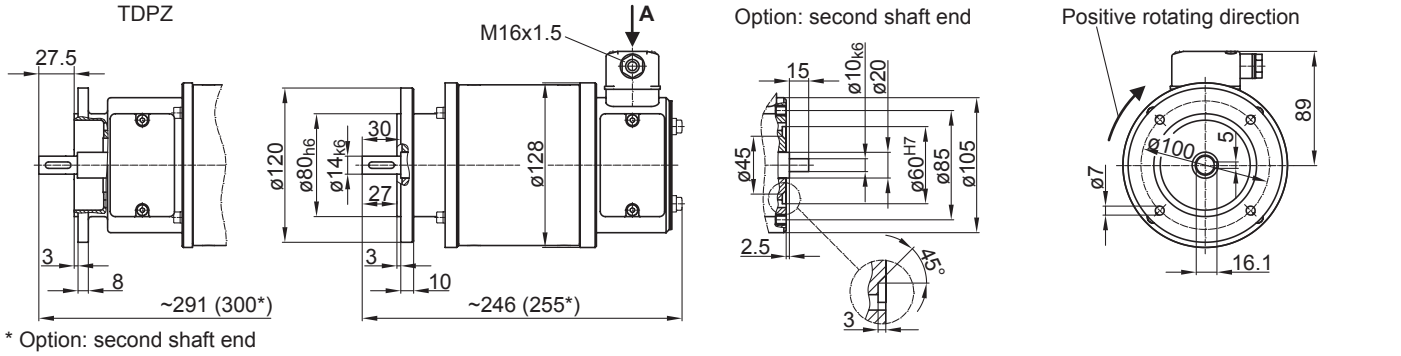
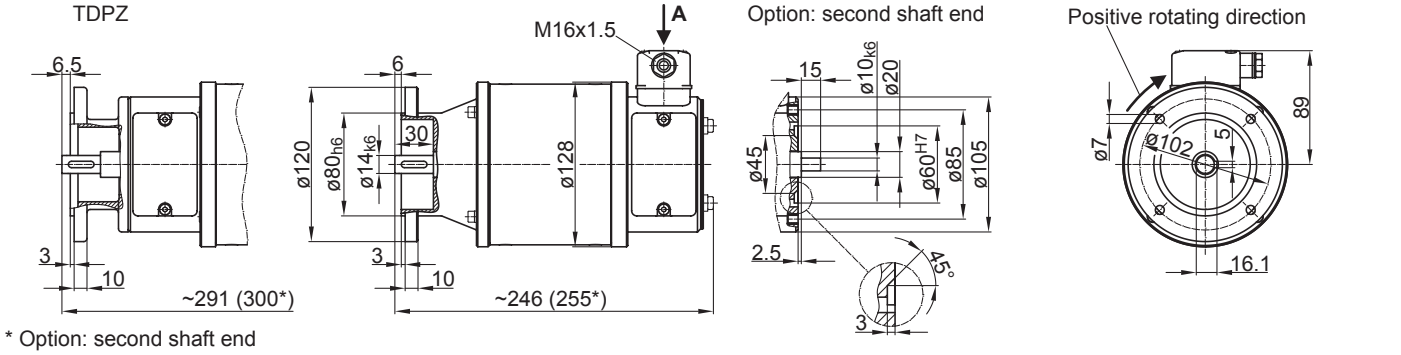
Dimensions



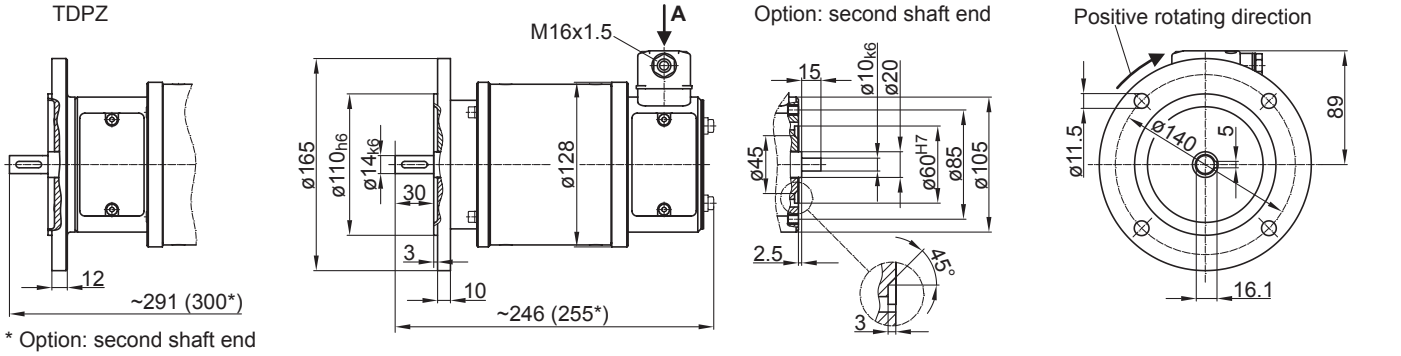
* Option: second shaft end

Version with B5 flange



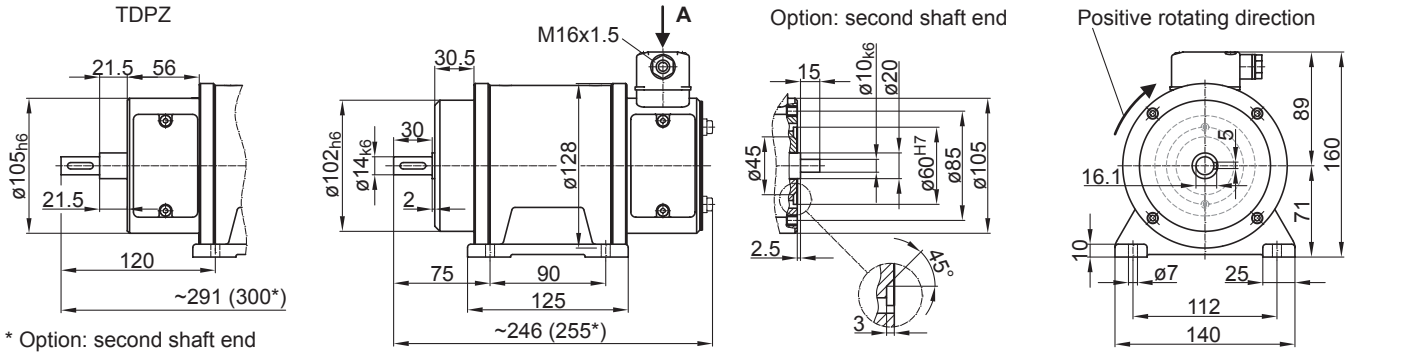
* Option: second shaft end

Version with B5s flange



* Option: second shaft end

Version with B5k flange



* Option: second shaft end

Version with housing foot (B3)

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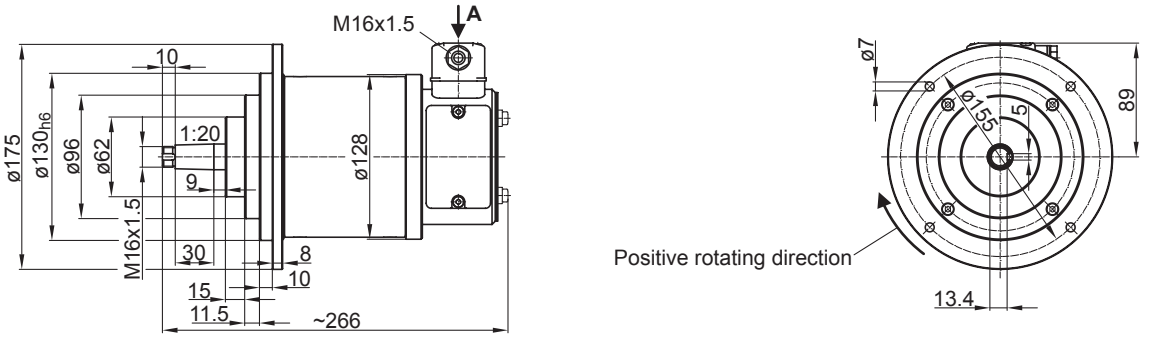
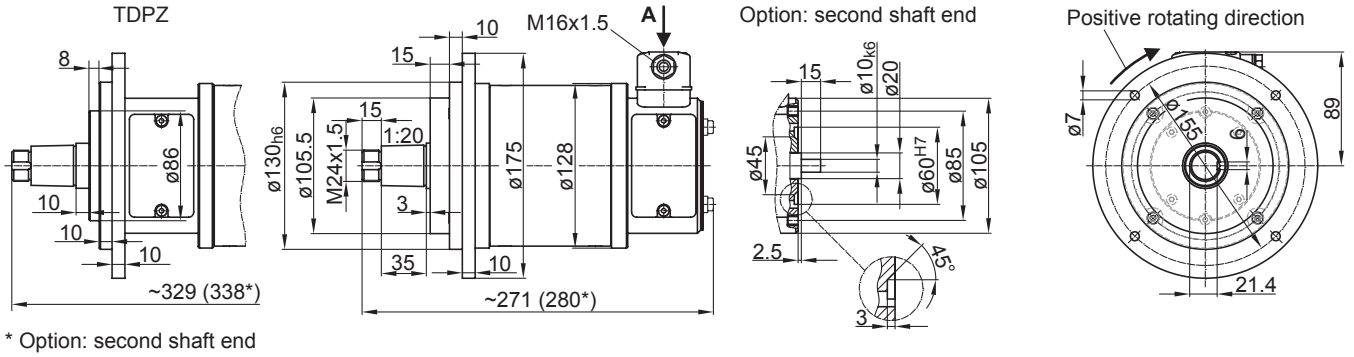
Dimensions

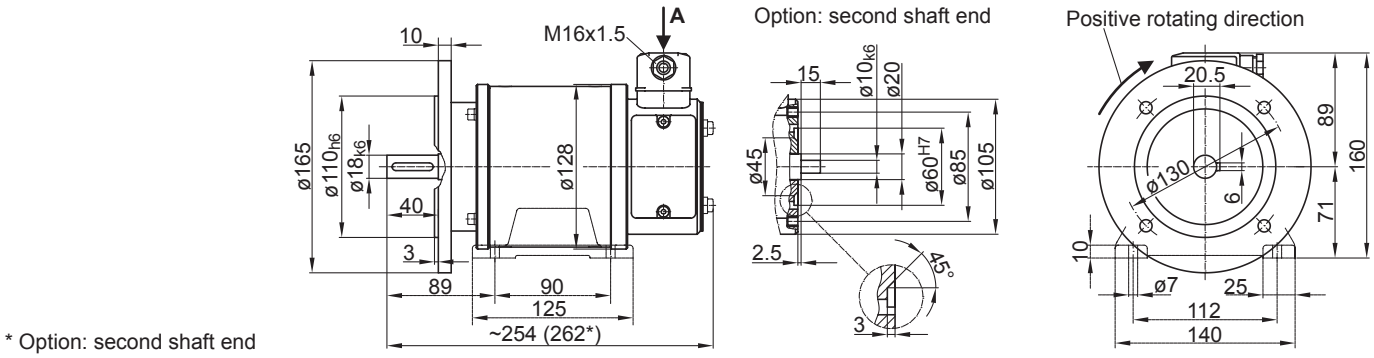


Version with B10 flange



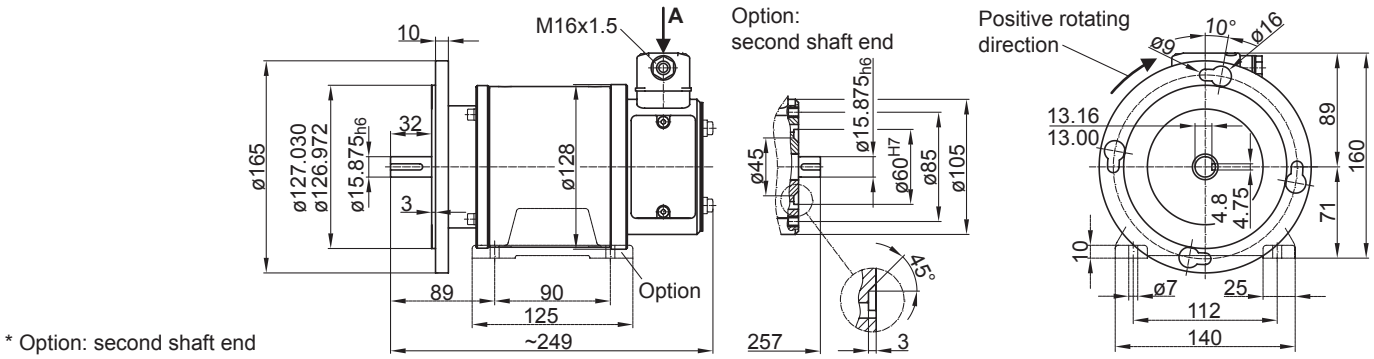
* Option: second shaft end

Version with B10w flange



* Option: second shaft end

Version with B5kd flange



* Option: second shaft end

Version with B5km flange

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Ordering reference

	TDP	#	########
Product			
Tachogenerator	TDP		
Design			
Tachogenerator			
Twin tachogenerator		Z	
Open-circuit voltage			
20 mV per rpm			13.06LT-15
65 mV per rpm			13.06LT-17
100 mV per rpm			13.06LT-6
175 mV per rpm			13.06LT-3
200 mV per rpm			13.06LT-2

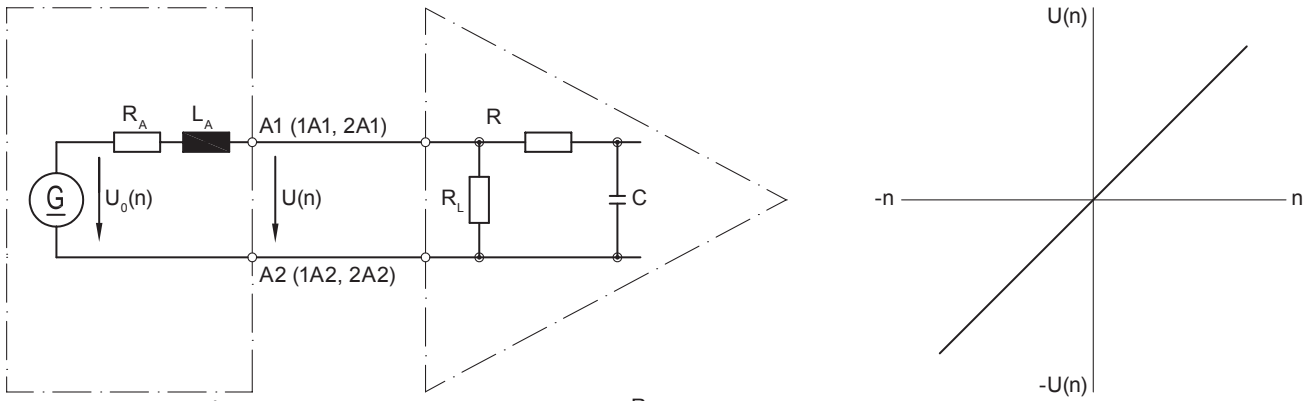
Data according to type

Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0-1000	0-3000	0-n_{max}			
	U_0 [mV/rpm]	R_L [kΩ]	R_L [kΩ]	R_L [kΩ]	n_{max} [rpm]	R_A (20°C) [Ω]	L_A [mH]
TDP13.06LT-**15**	20	≥0.02	≥0.09	≥0.4	6000	2.1	9
TDP13.06LT-**17**	65	≥0.2	≥0.9	≥4	6000	21	85
TDP13.06LT-**6**	100	≥0.5	≥2.5	≥9	6000	46	200
TDP13.06LT-**3**	175	≥1.5	≥7	≥10	3500	150	610
TDP13.06LT-**2**	200	≥2	≥9	–	3000	208	800
Twin tachogenerator with redundant output (The data refer to each of the two tachogenerator outputs)							
TDPZ13.06LT-**15**	20	≥0.04	≥0.2	≥0.8	6000	3.4	9
TDPZ13.06LT-**17**	65	≥0.4	≥2	≥8	6000	34	85
TDPZ13.06LT-**6**	100	≥1	≥5	≥18	6000	76	200
TDPZ13.06LT-**3**	175	≥3	≥14	≥20	3500	250	610
TDPZ13.06LT-**2**	200	≥4	≥18	–	3000	328	800

Superimposed ripple (for τ_{RC} = 0.7 ms): ≤0.5% (peak-peak) ≤0.25% (rms)

Equivalent circuit diagram

Tachogenerator



$\tau_{RC} \approx R \cdot C$ $\tau_A \approx \frac{L_A}{R_L}$ $U(n) = U_0(n) \frac{R_L}{R_A + R_L} \approx U_0(n)$ @ $R > R_L \gg R_A$

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

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Accessories	
Mounting accessories	
	Spring disk coupling K 50 (shaft ø11...16 mm)
	Spring disk coupling K 60 (shaft ø11...22 mm)