

Tachogenerators

Solid shaft $\varnothing 14$ to $\varnothing 18$ mm with flange

With own bearings

TDP 13, TDPZ 13



TDP 13

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)
Open-circuit voltage	20...200 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approvals	CE, RoHS

TDP 13

Performance	40 W (speed ≥ 2000 rpm)
Armature-circuit time-constant	< 0.4 μ s

TDPZ 13

Performance	2x 20 W (speed ≥ 2000 rpm)
Armature-circuit time-constant	< 0.2 μ s

Features

- Low response time
- Open circuit voltage 20...200 mV per rpm
- Solid shaft $\varnothing 14$ -18 mm with flange
- High signal quality due to patented LongLife technology
- With own bearings
- No auxiliary energy source required

Optional

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

Technical data - mechanical design

Size (flange)	$\varnothing 120$ mm $\varnothing 165$ mm $\varnothing 175$ mm
Shaft type	$\varnothing 14$...18 mm solid shaft
Flange	B5, B5k, B5s, B10 and B10w flange
Protection DIN EN 60529	IP 55
Operating speed	≤ 6000 rpm
Shaft loading	≤ 80 N axial ≤ 100 N radial
Materials	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
Connection	Terminal box

TDP 13

Torque	2.5 Ncm
Rotor moment of inertia	0.4 kgcm ²
Weight approx.	8.5 kg

TDPZ 13

Torque	4.1 Ncm
Rotor moment of inertia	0.6 kgcm ²
Weight approx.	10 kg

Tachogenerators

Solid shaft $\varnothing 14$ to $\varnothing 18$ mm with flange

With own bearings

TDP 13, TDPZ 13

Part number

Tachogenerator

TDP13.06LT-

	<u>Open-circuit voltage</u>
15	20 mV per rpm
17	65 mV per rpm
6	100 mV per rpm
3	175 mV per rpm
2	200 mV per rpm

Twin tachogenerator

TDPZ13.06LT-

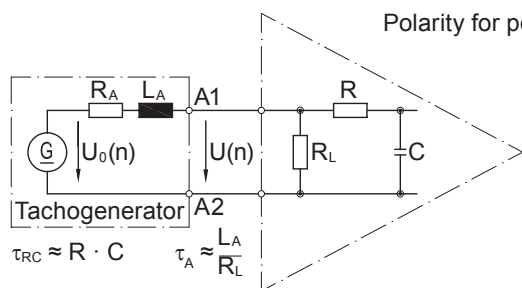
	<u>Open-circuit voltage</u>
15	20 mV per rpm
17	65 mV per rpm
6	100 mV per rpm
3	175 mV per rpm
2	200 mV per rpm

Data according to type

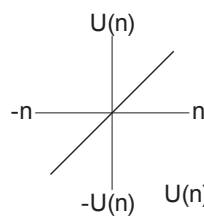
Type	Off-load voltage U_0 [mV/rpm]	Minimum load required depending on speed range [rpm]			Maximum operating speed n_{max} [rpm]	Armature resistance $R_A(20^\circ C)$ [Ω]	Armature inductance L_A [mH]
		0-1000	0-3000	0- n_{max}			
		R_L [k Ω]	R_L [k Ω]	R_L [k Ω]			
TDP13.06LT-15	20	≥ 0.02	≥ 0.09	≥ 0.4	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
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 $\tau_{RC} = 0.7$ ms): $\leq 0.5\%$ (peak-peak) $\leq 0.25\%$ (rms)

Replacement switching diagram



Polarity for positive rotating direction: A1 (1A1*, 2A1*): + A2 (1A2*, 2A2*): – (VDE)
* with option Z



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

Tachogenerators

Solid shaft $\varnothing 14$ to $\varnothing 18$ mm with flange

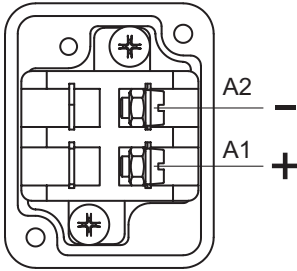
With own bearings

TDP 13, TDPZ 13

Terminal assignment

View A - Connecting terminal

Polarity for positive direction of rotation



Accessories

Carbon brushes

Mounting accessories

K 50	Spring disk coupling for solid shaft $\varnothing 11 \dots 16$ mm
K 60	Spring disk coupling for solid shaft $\varnothing 11 \dots 22$ mm

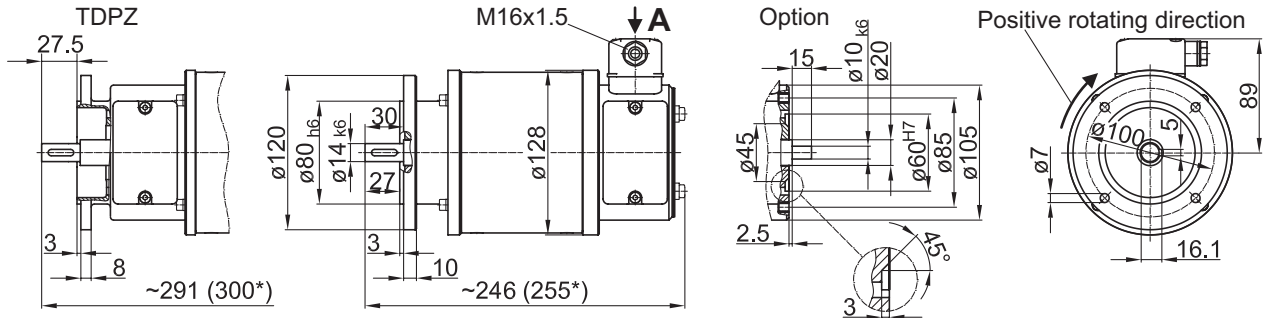
Tachogenerators

Solid shaft $\varnothing 14$ to $\varnothing 18$ mm with flange
With own bearings

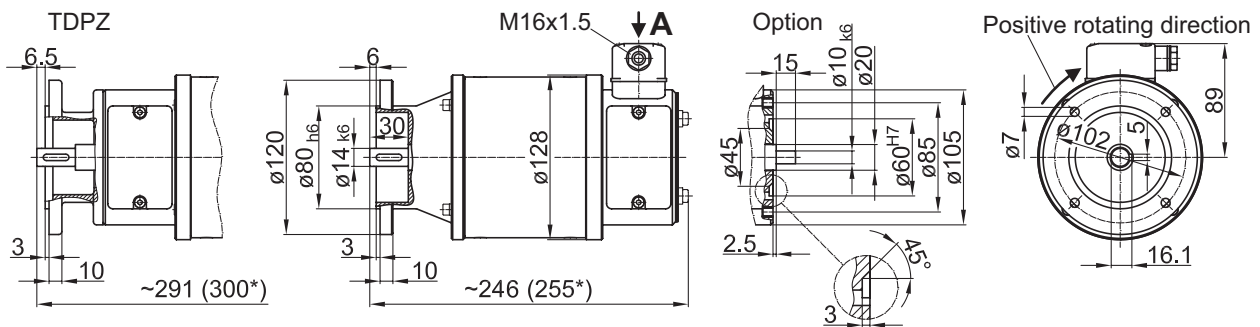
TDP 13, TDPZ 13

Dimensions

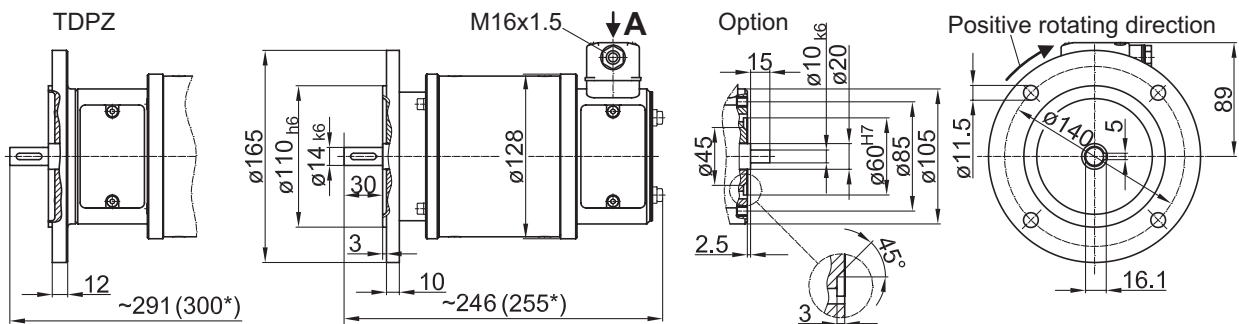
TDP 13 (TDPZ 13) - Version with B5 flange



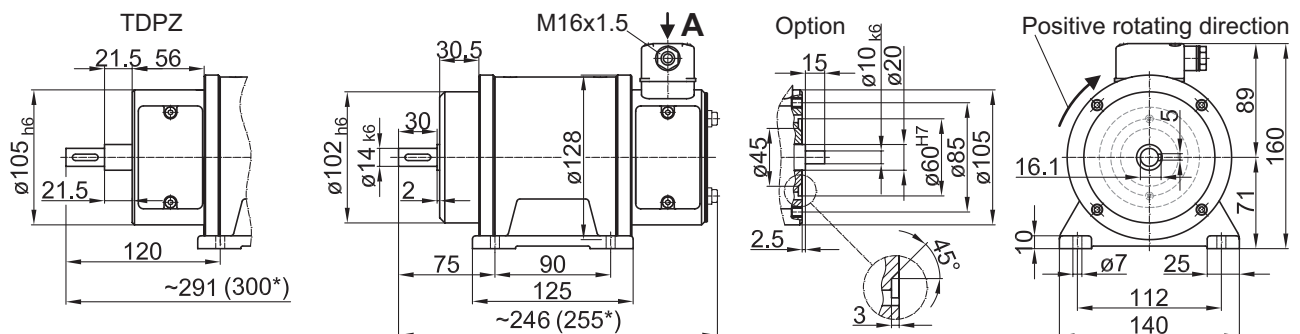
TDP 13 (TDPZ 13) - Version with B5s flange



TDP 13 (TDPZ 13) - Version with B5k flange



TDP 13 (TDPZ 13) - Version with housing foot (B3)



* Option with second shaft end

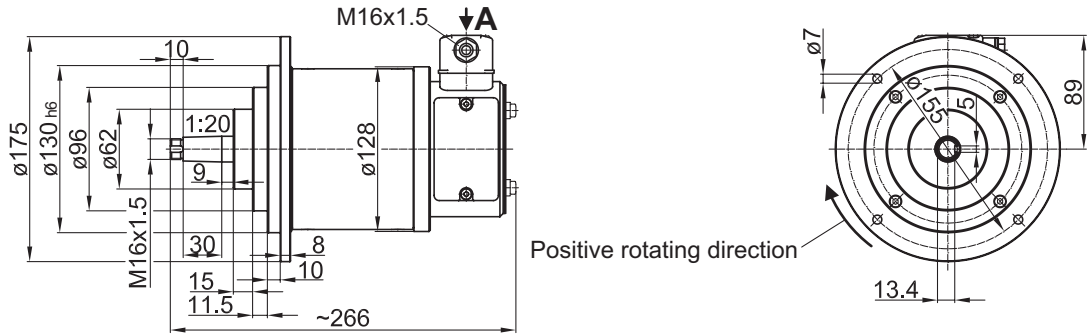
Tachogenerators

Solid shaft $\varnothing 14$ to $\varnothing 18$ mm with flange

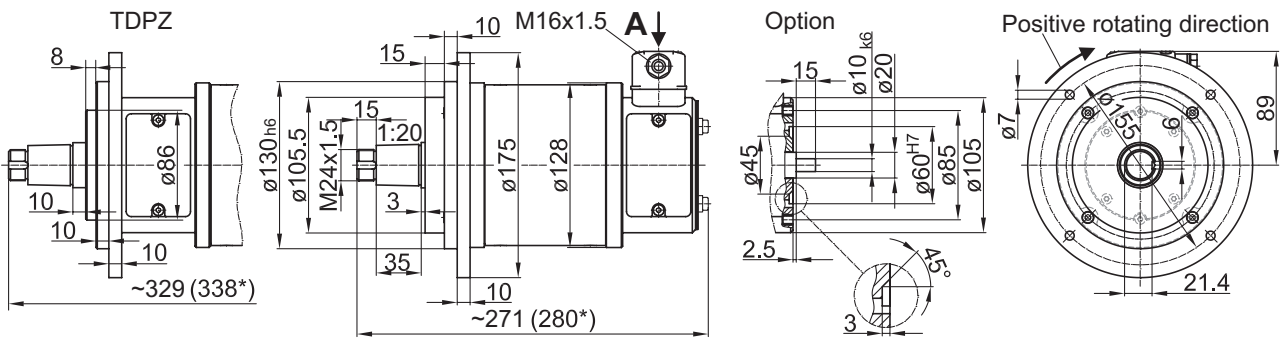
With own bearings

TDP 13, TDPZ 13

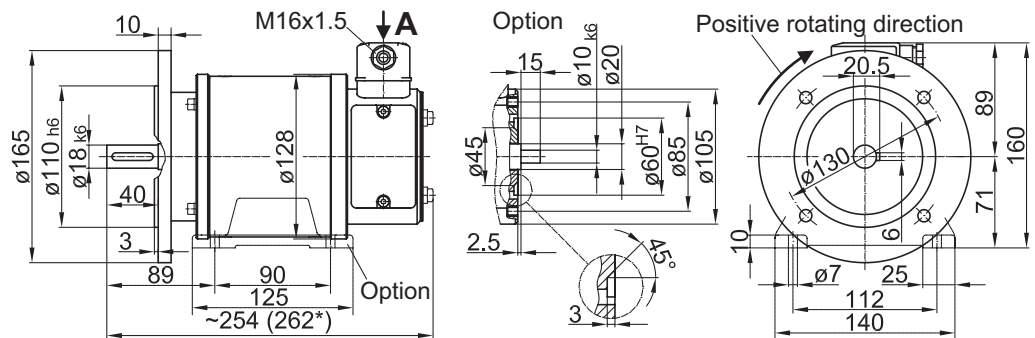
TDP 13 - Version with B10 flange



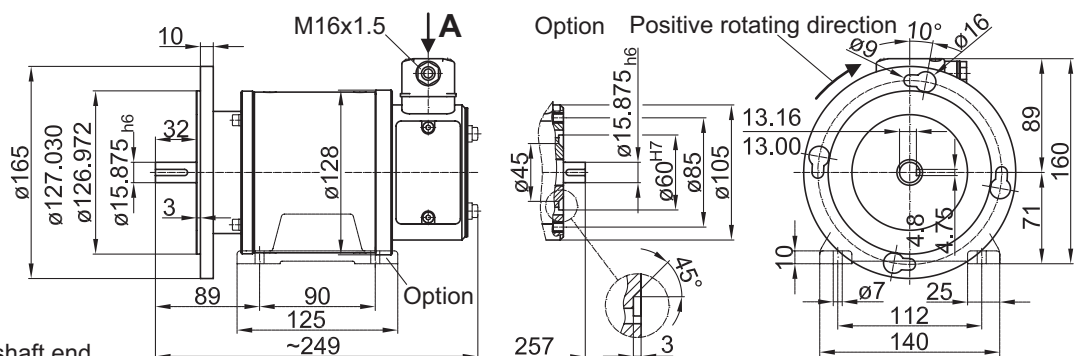
TDP 13 (TDPZ 13) - Version with B10w flange



TDP 13 - Version with B5kd flange



TDP 13 - Version with B5km flange



* Option with second shaft end