

## TDP 13, TDPZ 13

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

With own bearings

### Overview

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



### Technical data

#### Technical data - electrical ratings

Reversal tolerance	$\leq 0.1 \%$
Linearity tolerance	$\leq 0.15 \%$
Temperature coefficient	$\pm 0.05 \%/K$ (open-circuit)
Isolation class	B
Calibration tolerance	$\pm 3 \%$
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	TDP: 40 W (speed $\geq 2000$ rpm) TDPZ: 2x 20 W (speed $\geq 2000$ rpm)
Armature-circuit time-constant	$< 0.4 \mu s$ (TDP) $< 0.2 \mu s$ (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)	$\varnothing 120$ mm $\varnothing 165$ mm $\varnothing 175$ mm
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#### Technical data - mechanical design

Shaft type	$\varnothing 14 \dots 18$ mm solid shaft
Flange	B5, B5k, B5s, B10 and B10w flange
Protection EN 60529	IP 55
Operating speed	$\leq 6000$ rpm
Torque	2.5 Ncm (TDP) 4.1 Ncm (TDPZ)
Rotor moment of inertia	17 kgcm <sup>2</sup> (TDP) 20 kgcm <sup>2</sup> (TDPZ)
Admitted shaft load	$\leq 80$ N axial $\leq 100$ N radial
Material	Housing: steel Shaft: stainless steel
Operating temperature	$-30 \dots +130$ °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)

# TDP 13, TDPZ 13

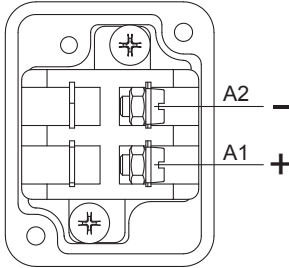
Solid shaft  $\varnothing 14 \dots 18$  mm with flange

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## Terminal assignment

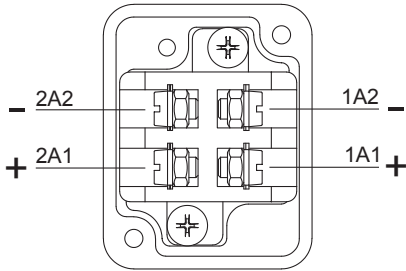
### View A (see dimension)

Connecting terminal tachogenerator TDP  
Polarity for positive rotating direction



### View A (see dimension)

Connecting terminal twin tachogenerator TDPZ  
Polarity for positive rotating direction

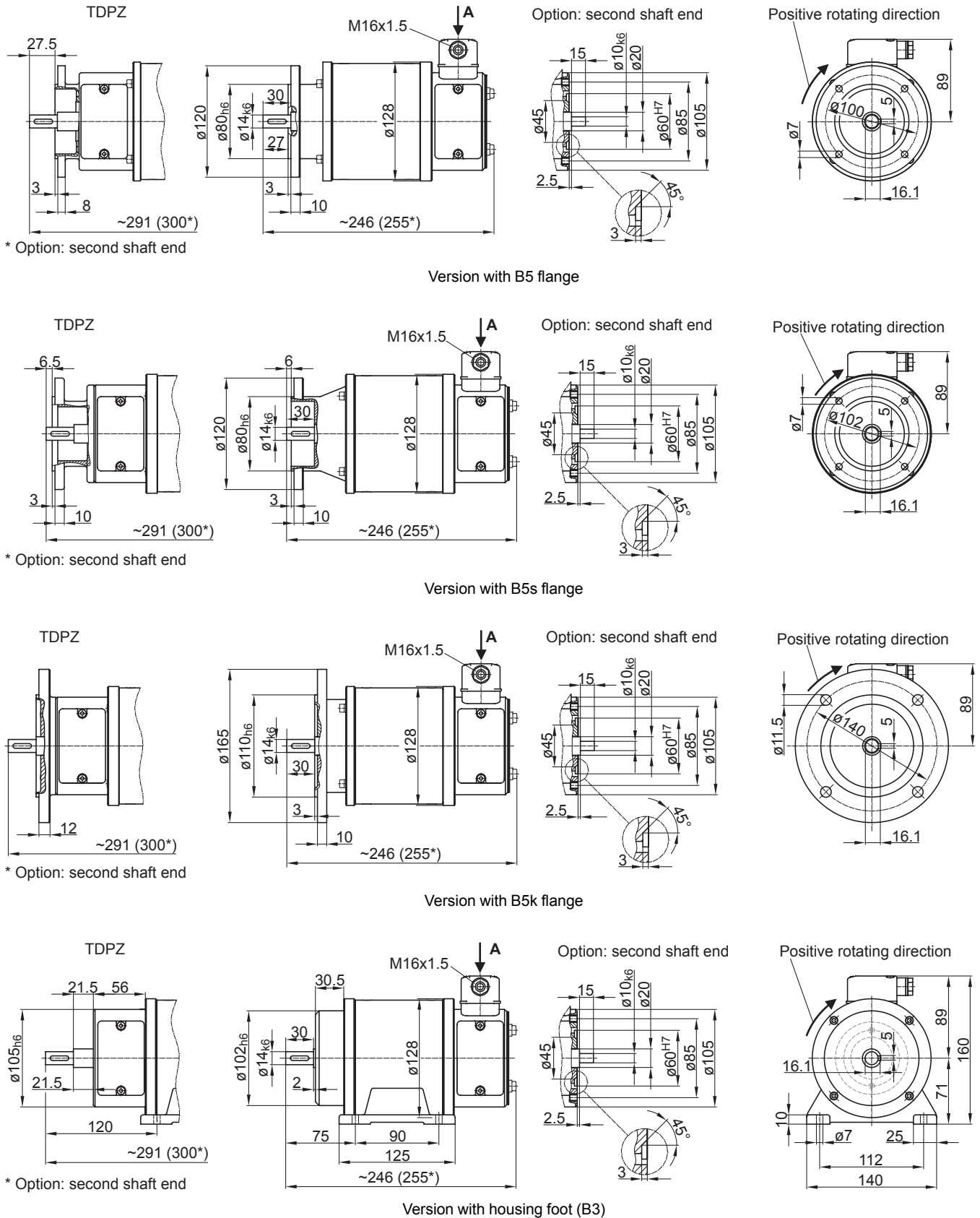


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Solid shaft  $\varnothing 14 \dots 18$  mm with flange

With own bearings

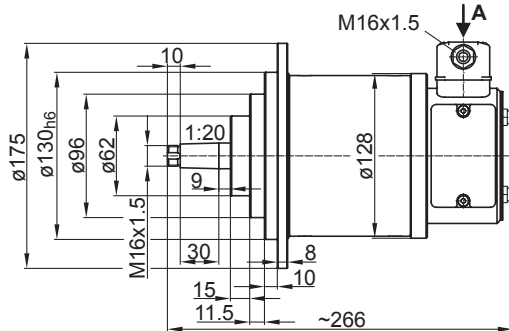
## Dimensions



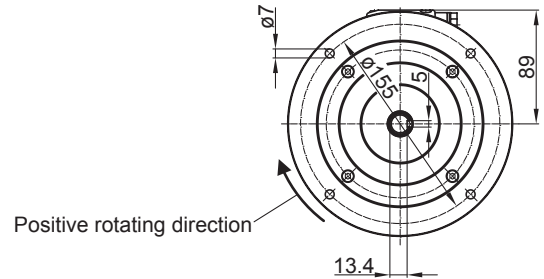
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Solid shaft  $\varnothing 14 \dots 18$  mm with flange  
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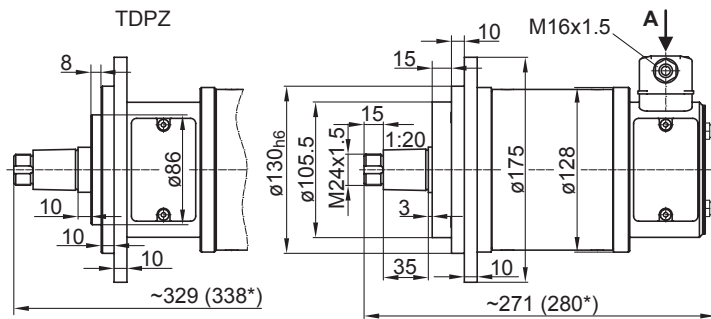
## Dimensions



Version with B10 flange

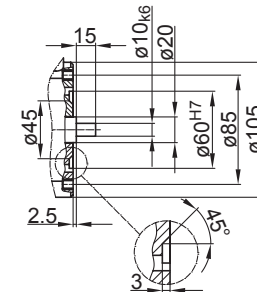


Positive rotating direction

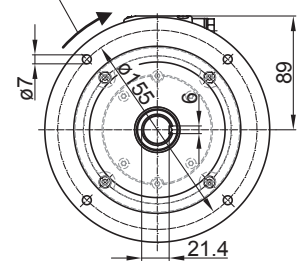


Version with B10w flange

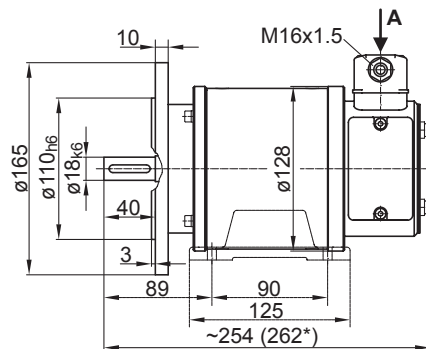
Option: second shaft end



Positive rotating direction

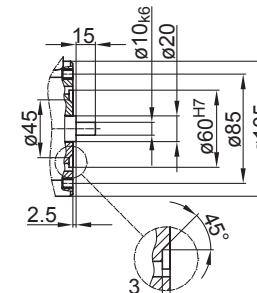


\* Option: second shaft end

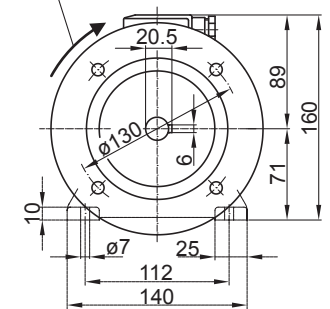


Version with B5kd flange

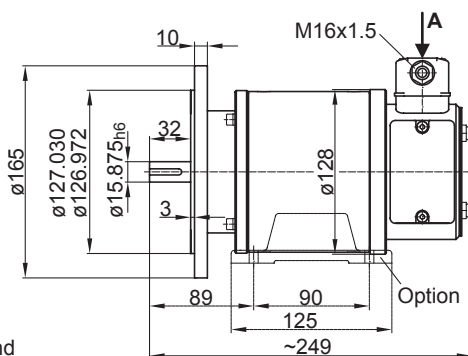
Option: second shaft end



Positive rotating direction

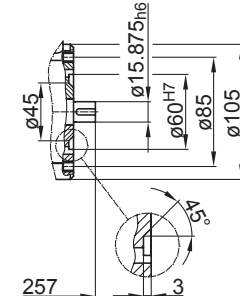


\* Option: second shaft end

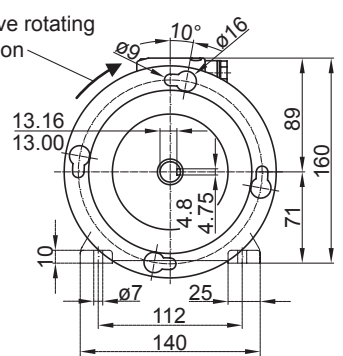


Version with B5km flange

Option: second shaft end



Positive rotating direction



\* Option: second shaft end

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## Ordering reference

		<b>TDP #</b>	<b>#####</b>
<b>Product</b>	Tachogenerator	TDP	
<b>Design</b>	Tachogenerator		
	Twin tachogenerator		Z
<b>Open-circuit voltage</b>	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 $U_0$ [mV/rpm]	Minimum load required depending on speed range [rpm]			Maximum operating speed $n_{max}$ [rpm]	Armature resistance $R_A$ (20°C) [ $\Omega$ ]	Armature inductance $L_A$ [mH]
		0-1000 $R_L$ [k $\Omega$ ]	0-3000 $R_L$ [k $\Omega$ ]	0- $n_{max}$ $R_L$ [k $\Omega$ ]			
TDP13.06LT-15	20	$\geq 0.02$	$\geq 0.09$	$\geq 0.4$	6000	2.1	9
TDP13.06LT-17	65	$\geq 0.2$	$\geq 0.9$	$\geq 4$	6000	21	85
TDP13.06LT-6	100	$\geq 0.5$	$\geq 2.5$	$\geq 9$	6000	46	200
TDP13.06LT-3	175	$\geq 1.5$	$\geq 7$	$\geq 10$	3500	150	610
TDP13.06LT-2	200	$\geq 2$	$\geq 9$	–	3000	208	800

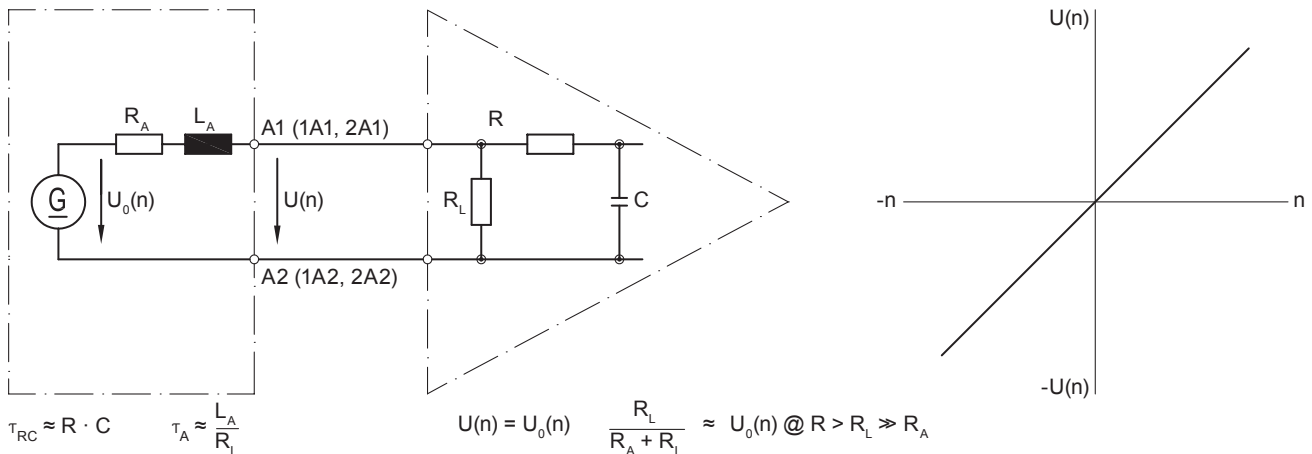
Twin tachogenerator with redundant output  
(The data refer to each of the two tachogenerator outputs)

TDPZ13.06LT-15	20	$\geq 0.04$	$\geq 0.2$	$\geq 0.8$	6000	3.4	9
TDPZ13.06LT-17	65	$\geq 0.4$	$\geq 2$	$\geq 8$	6000	34	85
TDPZ13.06LT-6	100	$\geq 1$	$\geq 5$	$\geq 18$	6000	76	200
TDPZ13.06LT-3	175	$\geq 3$	$\geq 14$	$\geq 20$	3500	250	610
TDPZ13.06LT-2	200	$\geq 4$	$\geq 18$	–	3000	328	800

Superimposed ripple (for  $\tau_{RC} = 0.7$  ms):  $\leq 0.5\%$  (peak-peak)  $\leq 0.25\%$  (rms)

## Equivalent circuit diagram

Tachogenerator



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  $\varnothing 11 \dots 16$  mm)

Spring disk coupling K 60 (shaft  $\varnothing 11 \dots 22$  mm)