

Tachogenerators

Solid shaft $\varnothing 11$ to $\varnothing 14$ mm with flange

With own bearings

GMP 1,0, GMPZ 1,0



GMP 1,0

Features

- Low response time
- Open circuit voltage 40...175 mV per rpm
- Redundant output (GMPZ)
- Solid shaft $\varnothing 11$...14 mm
- High signal quality due to patented LongLife technology
- With own bearings

Optional

- Second shaft end (B14)

Technical data - electrical ratings

Reversal tolerance	≤ 0.1 %
Linearity tolerance	≤ 0.5 %
Temperature coefficient	± 0.05 %/K (open-circuit)
Isolation class	B
Calibration tolerance	± 3 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	GMP: 30 W (speed ≥ 3000 rpm) GMPZ: 2x 30 W (speed ≥ 3000 rpm)
Armature-circuit time-constant	< 0.55 μ s (GMP) < 0.27 μ s (GMPZ)
Open-circuit voltage	40...175 mV per rpm
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

Technical data - mechanical design

Size (flange)	135 x 135 mm $\varnothing 120$ mm $\varnothing 165$ mm $\varnothing 115$ mm
Shaft type	$\varnothing 11$...14 mm solid shaft
Flange	EURO flange B10 B5, B5k, B5n und B5s flange
Protection DIN EN 60529	IP 55
Operating speed	≤ 6000 rpm
Torque	2 Ncm (GMP) 3.3 Ncm (GMPZ)
Rotor moment of inertia	4.5 kgcm ² (GMP) 8.5 kgcm ² (GMPZ)
Admitted shaft load	≤ 80 N axial ≤ 100 N radial
Materials	Housing: aluminium die-cast 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.	4.5 kg (GMP), 7 kg (GMPZ)
Connection	Terminal box



Part number

GMP 1,0LT-

Open-circuit voltage

10	40 mV per rpm
7	65 mV per rpm
4	100 mV per rpm
1	175 mV per rpm

Design

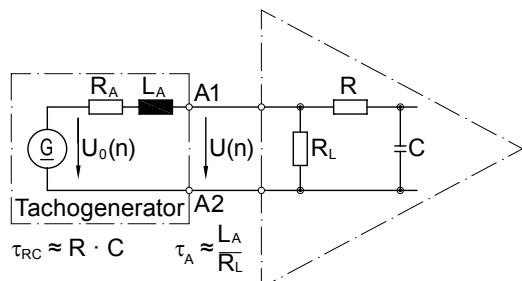
Tachogenerator

Z Twin tachogenerator

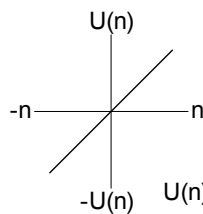
Data according to type

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 [k Ω]	R_L [k Ω]	R_L [k Ω]	$n_{\max}$ [rpm]	$R_A(20^\circ\text{C})$ [Ω]	L_A [mH]
GMP1,0LT-10	40	≥ 0.15	≥ 0.5	≥ 2	6000	12	90
GMP1,0LT-7	65	≥ 0.4	≥ 1.3	≥ 5	6000	33	225
GMP1,0LT-4	100	≥ 1	≥ 3	≥ 12	6000	81	550
GMP1,0LT-1	175	≥ 3	≥ 10	≥ 12	3400	275	1650
Twin tachogenerator with redundant output (The data refer to each of the two tachogenerator outputs)							
GMPZ1,0LT-10	40	≥ 0.15	≥ 0.5	≥ 2	6000	9	40
GMPZ1,0LT-7	65	≥ 0.4	≥ 1.3	≥ 5	6000	23	110
GMPZ1,0LT-4	100	≥ 1	≥ 3	≥ 12	6000	56	270
GMPZ1,0LT-1	175	≥ 3	≥ 10	≥ 12	3400	175	745
Superimposed ripple (for $\tau_{RC} = 1$ ms):		≤ 1.0 % (peak-peak)			≤ 0.5 % (rms)		

Replacement switching diagram



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



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

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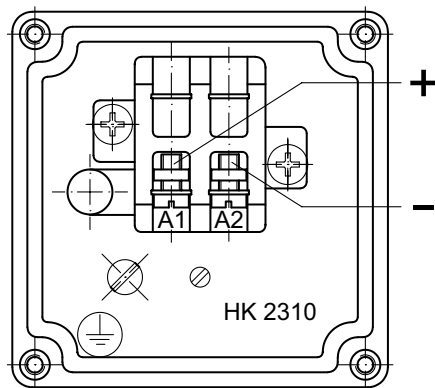
With own bearings

GMP 1,0, GMPZ 1,0

Terminal assignment

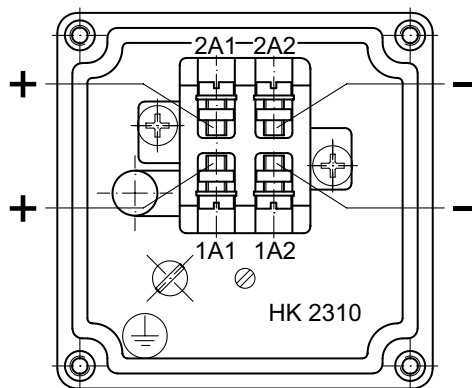
View A - Connecting terminal GMP 1,0

Polarity for positive rotating direction



View A - Connecting terminal GMPZ 1,0

Polarity for positive rotating direction



Accessories

Carbon brushes

Mounting accessories

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



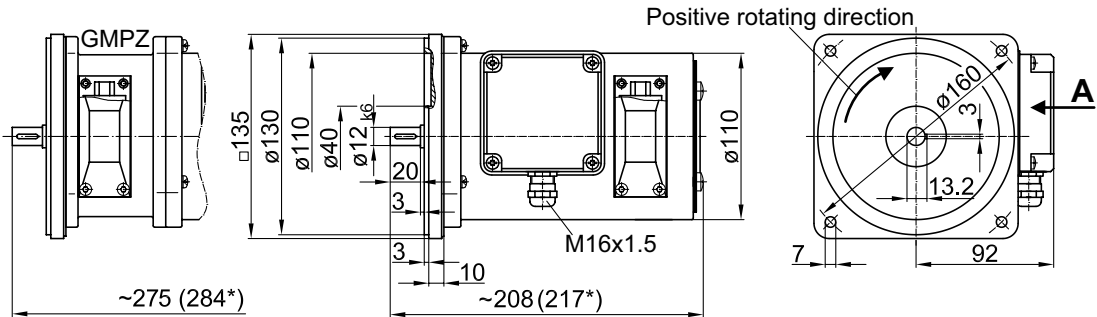
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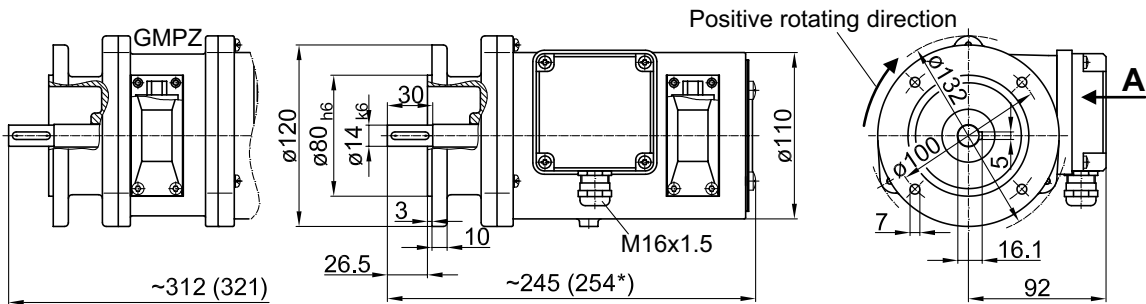
GMP 1,0, GMPZ 1,0

Dimensions

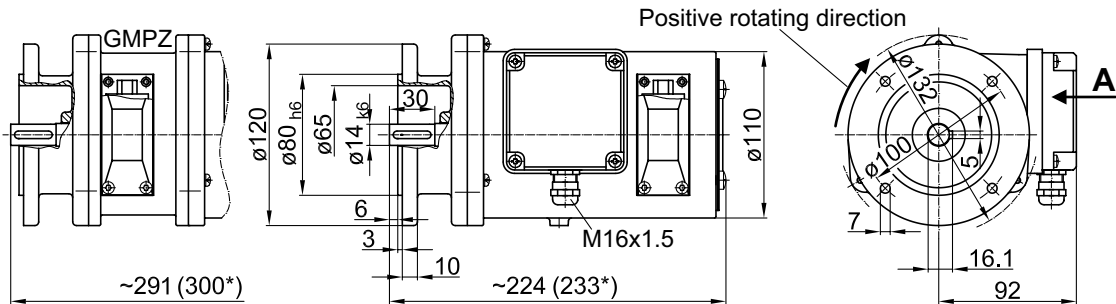
Version with B5 flange



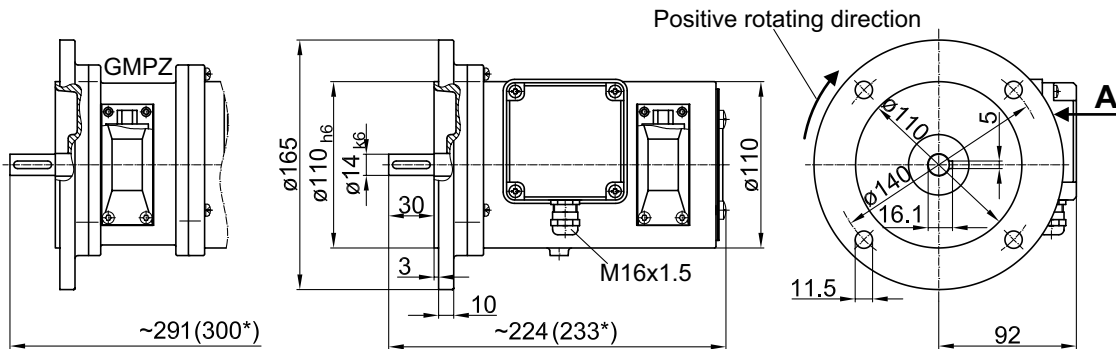
Version with B5n flange



Version with B5s flange



Version with B5k flange



* Option with second shaft end

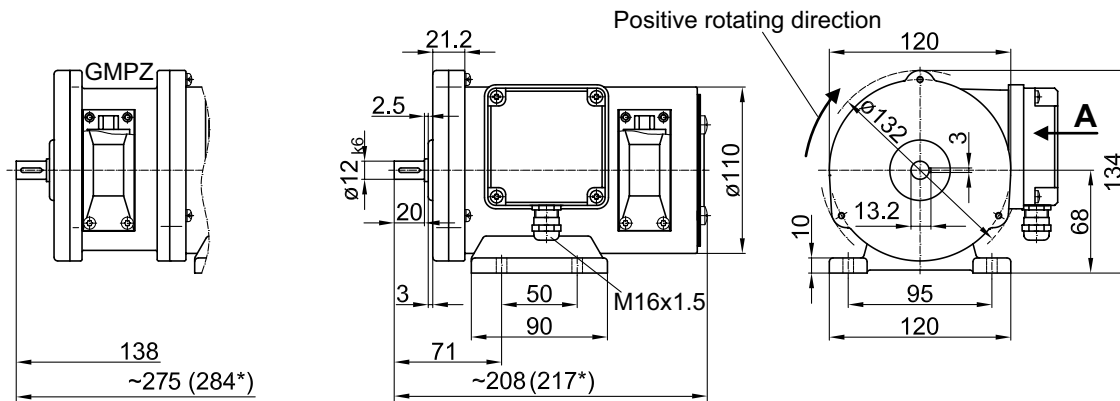
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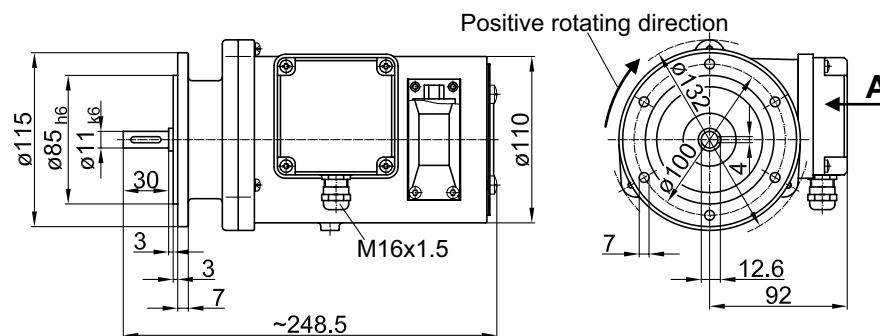
With own bearings

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Version with housing foot (B3)



Version with B10 Euro flange



Option second shaft end

