

DC-Servomotor KN 06 M4 inch version

Characteristics

Rated Values ¹			
Nominal torque	M_N	13,7	Ncm
Nominal speed ²	n_N	3000	min ⁻¹
Nominal output ²	P_N	43	W
Terminal voltage	U_N	17,3	V
Nominal current	I_N	4,9	A

Motor Performance			
Peak torque ³	M_{max}	144	Ncm
Max. peak current ³	I_{max}	48	A
Acceleration at peak torque	a_{max}	240	10 ³ rad/s ²
Stall torque ⁴	M_0	12,3	Ncm
Current at stall torque ⁴	I_0	4,4	A
Max. load speed	n_{max}	4500	min ⁻¹
Max. no load speed	n_0	5000	min ⁻¹

Intrinsic Motor Constants			
Torque constant	k_T	3,0	Ncm/A
Back E.M.F constant	k_E	3,15	V/10 ³ min ⁻¹
Viscous damping constant	k_D	0,11	Ncm/10 ³ min ⁻¹
Speed regulation at const. Voltage	k_n	85	min ⁻¹ /Ncm
Average Friction Torque	M_F	1	Ncm
Terminal resistance (+25 °C)	R_A	1,2	?
Armature (Cu) resistance (+25 °C)	R_{Cu}	0,94	?
Armature Inductance (10 ³ Hz)	L_A	<0,08	mH
Mechanical time constant	T_m	6,2	ms
Electrical time constant	T_e	0,11	ms
Rotor inertia	J	0,1	kg cm ²

Thermal Characteristics			
Time const. armature-housing	T_{th1}	0,44	min
Time const. housing-ambient ⁵	T_{th2}	12,2	min
Resistance armature-housing	R_{th1}	2,1	K/W
Resistance housing-ambient ⁵	R_{th2}	1,5	K/W
Temp.-coeff. of back EMF	c_{th}	-0,11	%/K
Max. cont. armature temp.	th	155	°C

Physical Data			
Number of magnet poles	2p	6	pcs
Number of commutator bars	z	82	pcs
Admitted shaft load, radial	F_R	90	N
Admitted shaft load, axial	F_A	45	N
Weight without extensions	m	0,6	kg

- 1) for DC current with formfactor 1,05, uncooled execution, protection IP 54, ambient temperature +40 °C.
- 2) Continuous operation S1 (VDE 530), part 1,4. Motor can be run at all points of the torque speed curve S1, continuous speed beyond 4000 min⁻¹ is not recommended, please check the torque speed curve.
- 3) Incremental motion cycle S3, VDE 530, part 1,4. Pulse duration 50 ms, 1% of duty cycle.
- 4) Point of intersection torque speed curve S1 with torque coordinate at speed zero. Permitted at very low speed < 1min⁻¹. Works the motor with blocked shaft longer than 20 s, the stall current must be reduced to appr. 70%.
- 5) Based upon mounted motors, heat transfer from motor to equipment.

Outline dimensions motor:

