

Brushless DC-Servomotors

47,1 mNm

Electronic Commutation

For combination with

Gearheads:
30/1, 32/3, 38/1, 38/2

Encoders:
5500, 5540

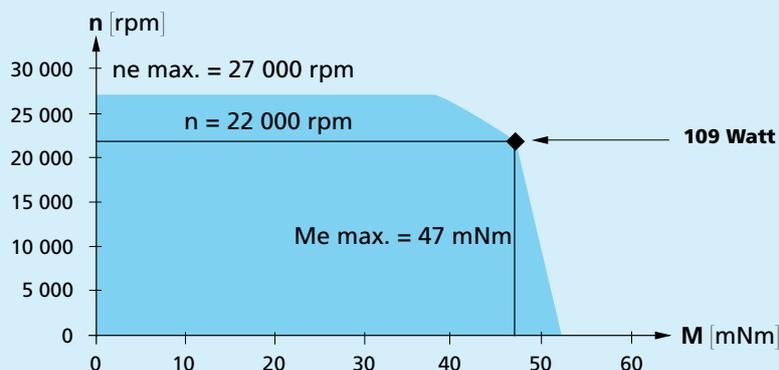
Drive Electronics:
refer to "Combination Chart", pages 14-15

Series 3564 ... B

	3564 K	012 B	024 B	036 B	048 B	
1 Nominal voltage	U_N	12	24	36	48	Volt
2 Terminal resistance, phase-phase	R	0,6	1,2	2,8	4,4	Ω
3 Output power ¹⁾	$P_{2 \text{ max.}}$	109	101	101	101	W
4 Efficiency	$\eta_{\text{max.}}$	81	81	81	82	%
5 No-load speed	n_o	7 850	11 300	11 550	12 200	rpm
6 No-load current (with shaft \varnothing 4,0 mm)	I_o	0,206	0,189	0,131	0,109	A
7 Stall torque	M_H	291	371	379	401	mNm
8 Friction torque, static	C_o	1,10	1,10	1,10	1,10	mNm
9 Friction torque, dynamic	C_v	$2,4 \cdot 10^{-4}$	$2,4 \cdot 10^{-4}$	$2,4 \cdot 10^{-4}$	$2,4 \cdot 10^{-4}$	mNm/rpm
10 Speed constant	k_n	658	475	324	258	rpm/V
11 Back-EMF constant	k_E	1,521	2,107	3,089	3,877	mV/rpm
12 Torque constant	k_M	14,52	20,12	29,50	37,02	mNm/A
13 Current constant	k_i	0,069	0,050	0,034	0,027	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	27	31	31	31	rpm/mNm
15 Terminal inductance, phase-phase	L	96	194	427	678	μH
16 Mechanical time constant	τ_m	10	11	11	11	ms
17 Rotor inertia	J	34	34	34	34	gcm ²
18 Angular acceleration	$\alpha_{\text{max.}}$	86	109	111	118	$\cdot 10^3 \text{rad/s}^2$
19 Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	2,5 / 6,3				K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	23 / 1 175				s
21 Operating temperature range		- 30 ... +125				$^{\circ}\text{C}$
22 Shaft bearings		ball bearings, preloaded				
23 Shaft load max.:						
– radial at 3 000/20 000 rpm (7,4 mm from mounting flange)		108 / 73				N
– axial at 3 000/20 000 rpm (push-on only)		50 / 30				N
– axial at standstill (push-on only)		131				N
24 Shaft play:						
– radial	\leq	0,015				mm
– axial	$=$	0				mm
25 Housing material		aluminium, black anodized				
26 Weight		310				g
27 Direction of rotation		electronically reversible				
Recommended values - mathematically independent of each other						
28 Speed up to ²⁾	$n_{e \text{ max.}}$	27 000	27 000	27 000	27 000	rpm
29 Torque up to ^{1) 2)}	$M_{e \text{ max.}}$	47,1	44,0	43,9	44,0	mNm
30 Current up to ^{1) 2)}	$I_{e \text{ max.}}$	3,68	2,50	1,71	1,36	A

¹⁾ at 22 000 rpm

²⁾ thermal resistance $R_{\text{th} 2}$ by 55% reduced



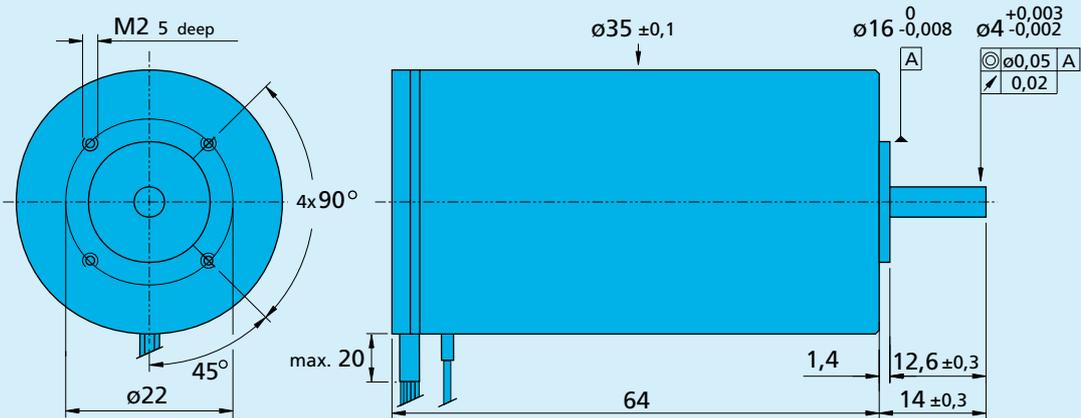
Recommended area for continuous operation

Options

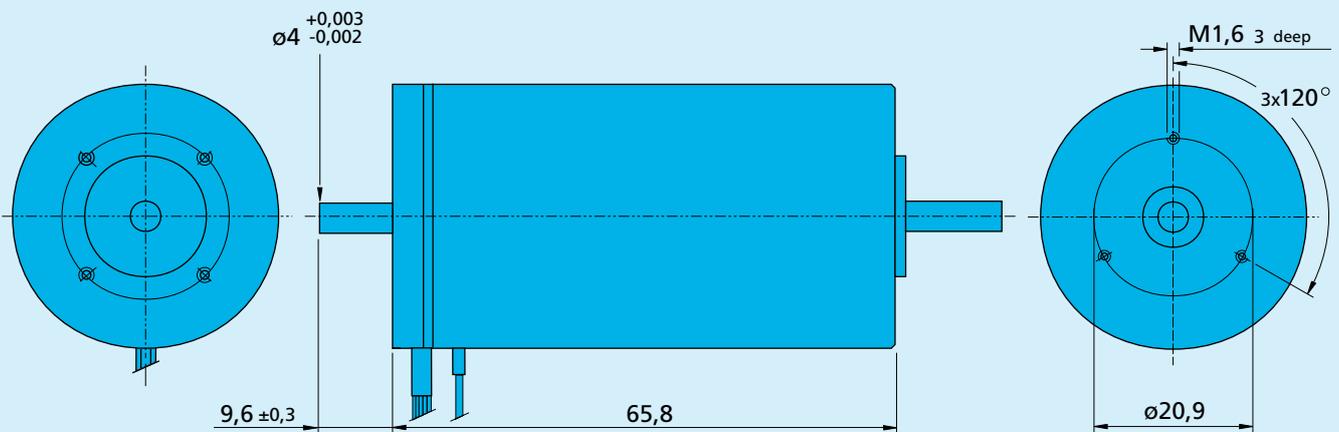
K1000:
Motors in autoclavable version.

K1155:
Motors for operation with Motion Controllers
MCBL 3003/06 S, MCBL 3003/06 C.

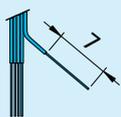
3564 K ... B



3564 K ... B - K312 with rear end shaft

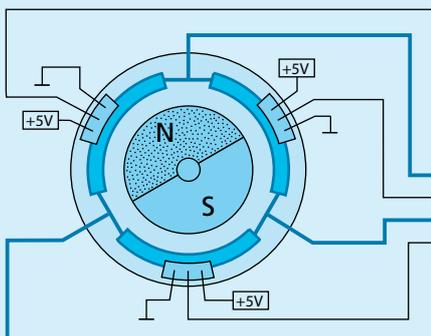


Cable and connection information



Cable

Single wires, material PTFE
Length 300 mm \pm 15 mm
3 conductors, AWG 20
5 conductors, AWG 26



Δ Coil winding 3 x 120°

Connection

Function	Colour
A Hall sensor	green
A Phase	brown
B Hall sensor	blue
B Phase	orange
C Hall sensor	grey
C Phase	yellow
+5V Logical supply	red
GND Logical	black