

Brushless DC-Servomotors

21,5 mNm

Electronic Commutation

For combination with

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

Encoders:
5500, 5540

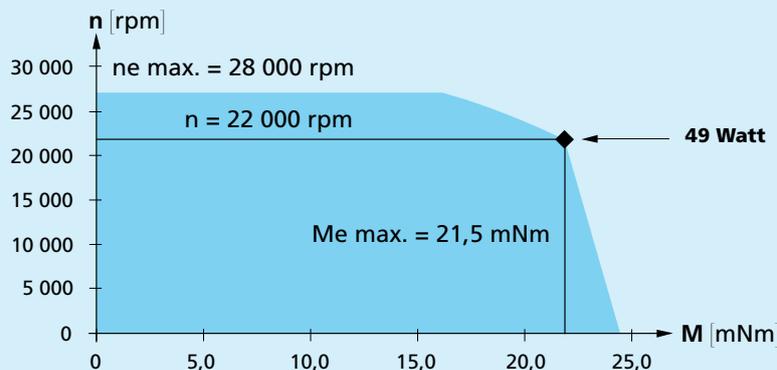
Drive Electronics:
refer to "Combination Chart", pages 14-15

Series 3056 ... B

	3056 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	1,6	7,0	13,7	24,5	Ω
3 Output power ¹⁾	$P_{2 \max}$	48	49	49	49	W
4 Efficiency	η_{\max}	73	73	74	74	%
5 No-load speed	n_o	8 790	8 200	8 840	8 740	rpm
6 No-load current (with shaft \varnothing 4,0 mm)	I_o	0,168	0,075	0,056	0,042	A
7 Stall torque	M_H	95	93	99	100	mNm
8 Friction torque, static	C_o	0,91	0,91	0,91	0,91	mNm
9 Friction torque, dynamic	C_v	$1,4 \cdot 10^{-4}$	$1,4 \cdot 10^{-4}$	$1,4 \cdot 10^{-4}$	$1,4 \cdot 10^{-4}$	mNm/rpm
10 Speed constant	k_n	750	350	251	186	rpm/V
11 Back-EMF constant	k_E	1,334	2,861	3,981	5,374	mV/rpm
12 Torque constant	k_M	12,74	27,32	38,02	51,32	mNm/A
13 Current constant	k_i	0,078	0,037	0,026	0,019	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	94	90	91	89	rpm/mNm
15 Terminal inductance, phase-phase	L	160	720	1 400	2 520	μH
16 Mechanical time constant	τ_m	13	13	13	12	ms
17 Rotor inertia	J	13,6	13,6	13,6	13,6	gcm ²
18 Angular acceleration	α_{\max}	70	68	73	73	10^3rad/s^2
19 Thermal resistance	$R_{th 1} / R_{th 2}$	3,3 / 9,4				K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	19 / 1 034				s
21 Operating temperature range		- 30 ... +125				$^{\circ}C$
22 Shaft bearings		ball bearings, preloaded				
23 Shaft load max.:						
– radial at 3 000/20 000 rpm (7,4 mm from mounting flange)		72 / 51				N
– axial at 3 000/20 000 rpm (axial push-on only)		18 / 12				N
– axial at standstill (axial push-on only)		62				N
24 Shaft play:						
– radial	\leq	0,015				mm
– axial	$=$	0				mm
25 Housing material		aluminium, black anodized				
26 Weight		190				g
27 Direction of rotation		electronically reversible				
Recommended values - mathematically independent of each other						
28 Speed up to ²⁾	$n_{e \max}$	28 000	28 000	28 000	28 000	rpm
29 Torque up to ^{1) 2)}	$M_{e \max}$	20,7	21,4	21,2	21,5	mNm
30 Current up to ^{1) 2)}	$I_{e \max}$	1,94	0,93	0,66	0,50	A

¹⁾ at 22 000 rpm

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



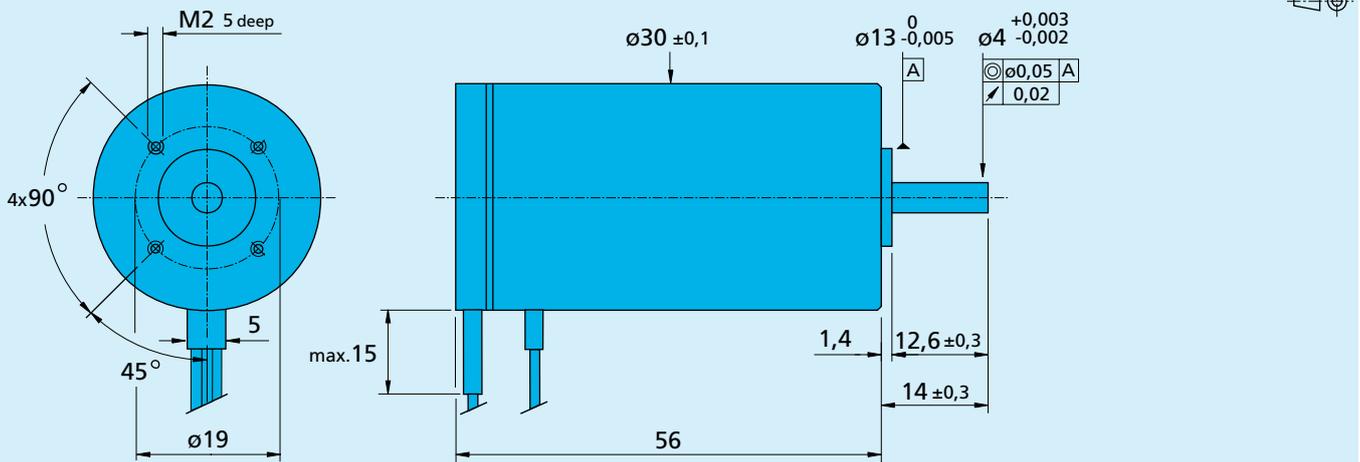
Recommended area for continuous operation

Options

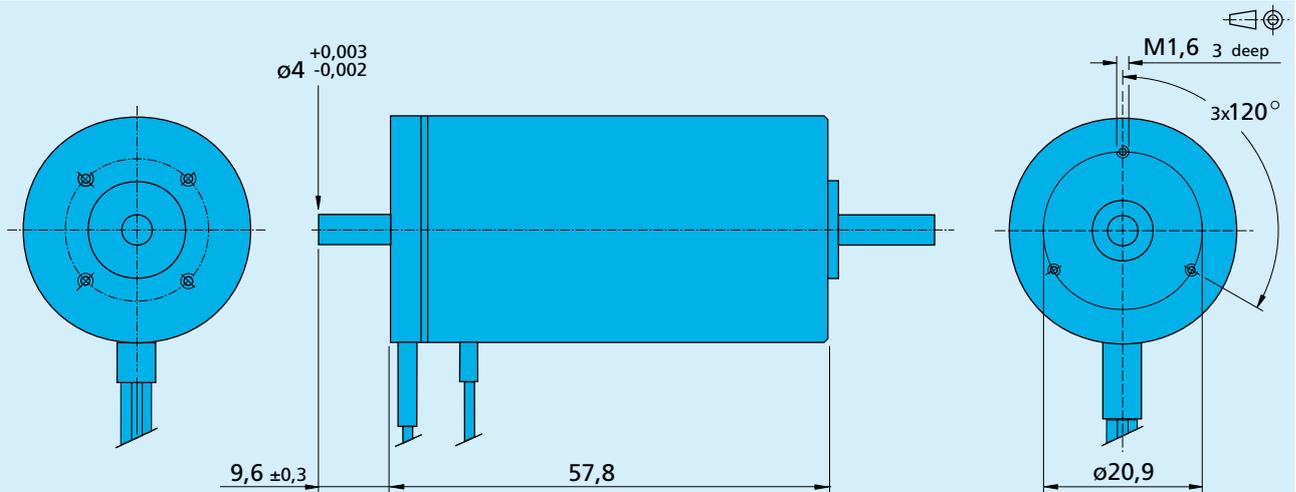
K1000:
Motors in autoclavable version.

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

3056 K ... B



3056 K ... B - K312 with rear end shaft



Cable and connection information

