

NEW

Brushless DC-Servomotors

6 / 12 mNm

Electronic Commutation

For combination with

Gearheads:

22F

Encoders:

IE3 (3-Kanal Encoder)

Drive Electronics:

SC 2804 (Speed Controller)

Series 2232 ... BX4

	2232 S	012 BX4 S	024 BX4 S	012 BX4	024 BX4	
1 Nominal voltage	U _N	12	24	12	24	Volt
2 Terminal resistance, phase-phase	R	3,5	12,4	3,5	12,4	Ω
3 Output power ^{1) 2)}	P _{2 max.}	3,4	3,4	6,5	6,6	W
4 Efficiency	η _{max.}	60,9	61,7	66,9	67,6	%
5 No-load speed	n ₀	13 180	13 980	6 600	7 000	rpm
6 No-load current (with shaft ø 3,0 mm)	I ₀	0,163	0,088	0,112	0,061	A
7 Stall torque	M _H	27,3	29,4	55,7	59,9	mNm
8 Friction torque, static	C ₀	0,6	0,6	0,85	0,85	mNm
9 Friction torque, dynamic	C _v	5,5 · 10 ⁻⁵	5,5 · 10 ⁻⁵	1,5 · 10 ⁻⁴	1,5 · 10 ⁻⁴	mNm/rpm
10 Speed constant	k _n	1 174	616	579	304	rpm/V
11 Back-EMF constant	k _E	0,852	1,623	1,728	3,288	mV/rpm
12 Torque constant	k _M	8,14	15,50	16,50	31,40	mNm/A
13 Current constant	k _I	0,123	0,065	0,061	0,032	A/mNm
14 Slope of n-M curve	Δn/ΔM	505	493	123	120	rpm/mNm
15 Terminal inductance, phase-phase	L	130	470	120	440	μH
16 Mechanical time constant	τ _m	22	22	7	7	ms
17 Rotor inertia	J	4,2	4,2	5,2	5,2	gcm ²
18 Angular acceleration	α _{max.}	65	70	107	115	· 10 ³ rad/s ²
19 Thermal resistance	R _{th 1} / R _{th 2}	2 / 17		2 / 17		K/W
20 Thermal time constant	τ _{w1} / τ _{w2}	4 / 510		4 / 527		s
21 Operating temperature range		- 40 ... + 85		- 40 ... + 100		°C
22 Shaft bearings		ball bearings, preloaded				
23 Shaft load max.:						
– radial at 3 000 rpm (4 mm from mounting flange)		20				N
– axial at 3 000 rpm		2				N
– axial at standstill		20				N
24 Shaft play:						
– radial	≤	0,015				mm
– axial	=	0				mm
25 Housing material		stainless steel				
26 Weight		70				g
27 Direction of rotation		electronically reversible				
28 Number of pole pairs		2				

Recommended values - mathematically independent of each other

29 Speed up to ²⁾	n _{e max.}	14 100	14 100	10 400	10 400	rpm
30 Torque up to ^{1) 2)}	M _{e max.}	6	6	12	12	mNm
31 Current up to ^{1) 2)}	I _{e max.}	0,85	0,45	0,90	0,48	A

¹⁾ at 5 000 rpm

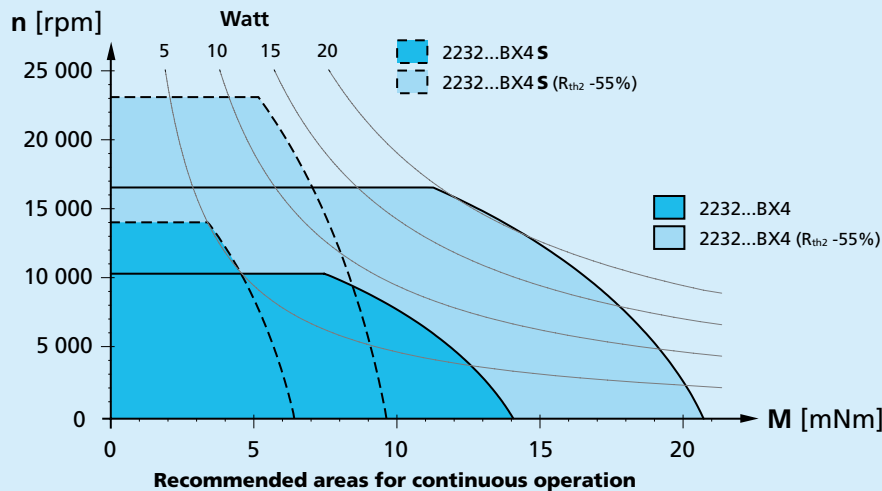
²⁾ thermal resistance R_{th2} not reduced

Note:

The diagram indicates the maximum speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

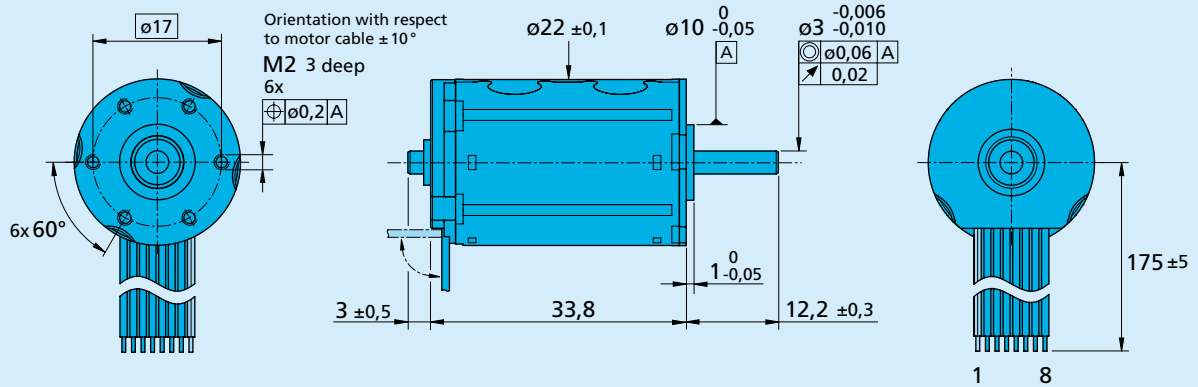
The motor can provide more power with adequate cooling (for ex. R_{th2} reduction of -55%).

The maximum available torque and speed will be reduced if the ambient temperature is higher than 22°C and/or the motor is thermally insulated to the ambient environment.



2232 ... BX4 and BX4 S

M 1:1



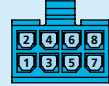
2232 S ... BX4 and BX4 S

Options

- connector variants

Motor:

AWG 26 / PVC ribbon cable (8-conductors),
with connector MicroFit



Order information

- Ordering examples:

2232S024BX4 IE3-256

2232S012BX4S IE3-32

Cable and connection information

