MC 17-BL – MC 23-BL

mattkeag
ANTRIEBSTECHNIK & MECHATRONISCHE SYSTEME

Brushless servo motors as replacements for conventional disk armature motors

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General information:

The Brushless servo motors series MCxx-BL from Mattke are permanent magnet synchronous motors designed in a very short mounting form. Thanks to the special construction of the motor flange they replace the formerly common disk armature motors from

PARVEX / AXEM / SERVALCO / ABB / BBC

without any further mechanical modifications.
A very high power density is achieved by utilization of high quality materials. Excellent dynamic performances with high maximum speed also characterise these motors. The standard version is equipped with resolver; the motors are also available with incremental or absolute encoder upon request.

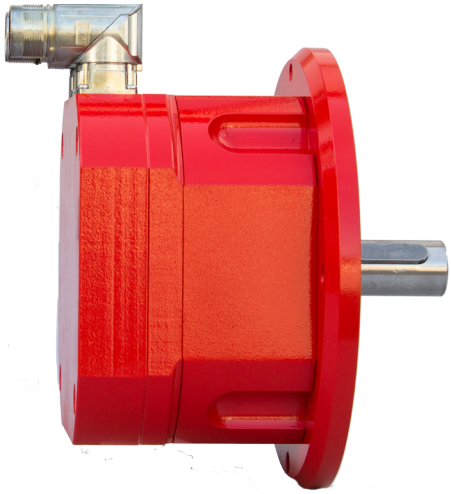
The main characteristics are:

- Rare earth magnets for high temperatures
- 8-pole construction
- Sinusoidal commutation
- Integrated thermal protection with PTC
- Rotatable angled connectors
- Compact design
- High protection, smooth surface
- High performance
- Flange and shaft dimensions compatible with disk armature motors

The values in this catalog are valid for the following conditions:

- Max. ambient temperature 40° C
- Min. ambient temperature 0° C
- Installation altitude up to 1000 m above mean sea level without restriction
- Isolation class F
- Effective values (RMS)
- Protection class IP65 (shaft excluded)

Comparison:

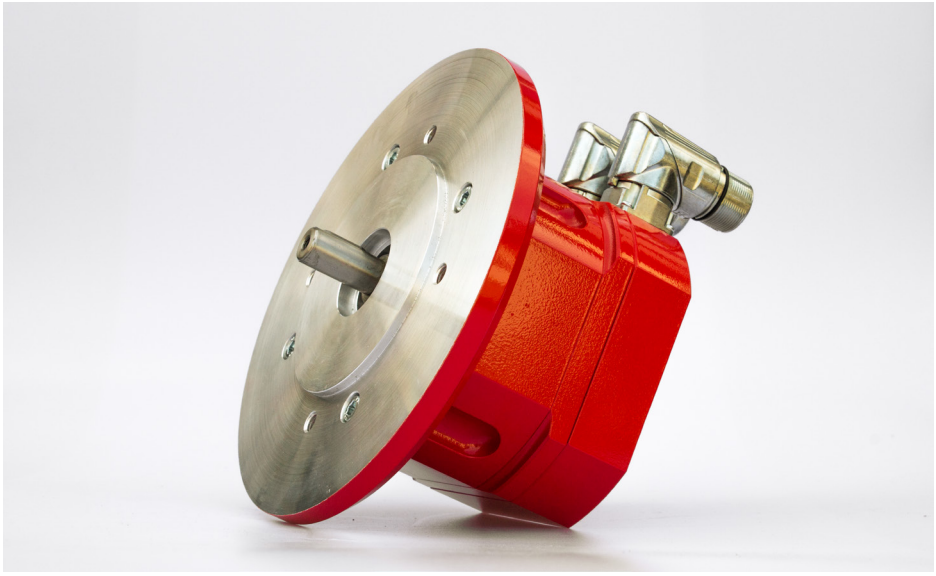


The following table shows the conventional disk armature motors and the equivalent brushless replacement:

Disk armature motors	Disk armature replacement
MC 17 H, MC 17 B	MC 17-BL
MC 19 P, MC 19 S, MC 19 B	MC 19-BL
MC 23 S	MC 23-BL

MC 17-BL

NEW



Description	Symbol	Unit	MC 17-BL
Stall torque	M_0	Nm	2.1
Max. voltage	U_{max}	V	330
Stall current	I_0	A	2.1
Nominal current	I_N	A	1.8
Nominal torque	M_N	Nm	1.8
Nominal power	P_N	W	570
Nominal speed	N_N	min^{-1}	3000
Max. speed	N_{max}	min^{-1}	5000
Peak current	I_{max}	A	8
Voltage constant	K_E	V/Krpm	61
Torque constant	K_T	Nm/A	1
Rotor inertia	J_R	kg cm^2	2.8
Winding resistance at 20°C	R_{U-V}	Ohm	8.6
Winding inductance at 1 kHz	L_{U-V}	mH	16
Weight	m	kg	4.2

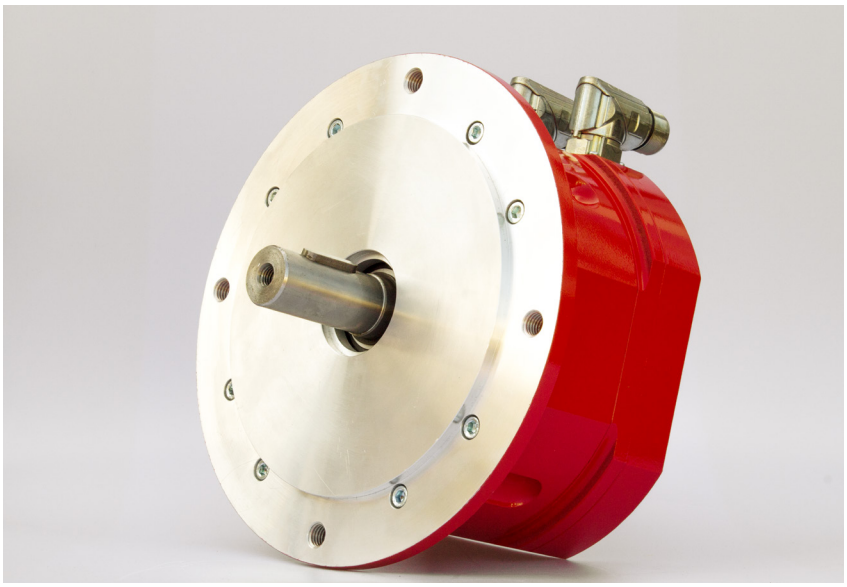
MC 19-BL

NEW

Description	Symbol	Unit	MC 19-BL
Stall torque	M_0	Nm	5
Max. voltage	U_{max}	V	350
Stall current	I_0	A	4.6
Nominal current	I_N	A	3.4
Nominal torque	M_N	Nm	3.6
Nominal power	P_N	W	1100
Nominal speed	N_N	min^{-1}	3000
Max. speed	N_{max}	min^{-1}	5000
Peak current	I_{max}	A	14
Voltage constant	K_E	V/Krpm	66
Torque constant	K_T	Nm/A	1.1
Rotor inertia	J_R	kg cm^2	12
Winding resistance at 20°C	R_{U-V}	Ohm	2.3
Winding inductance at 1 kHz	L_{U-V}	mH	6.8
Weight	m	kg	6.4

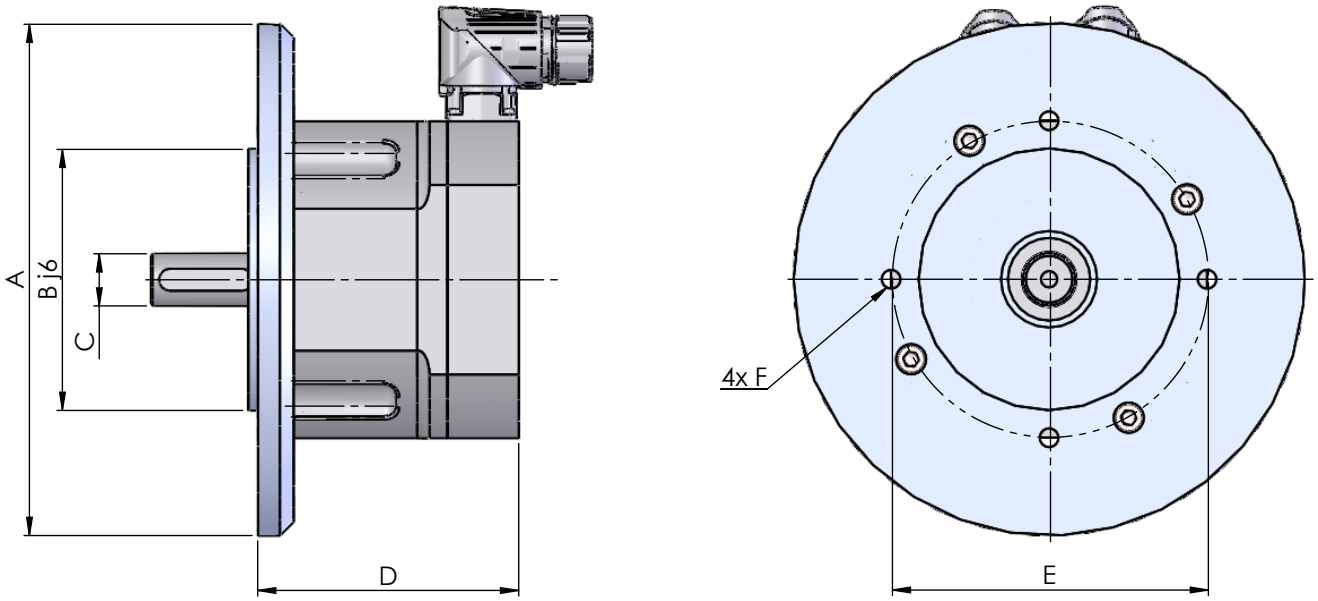
MC 23-BL

NEW



Description	Symbol	Unit	MC 23-BL
Stall torque	M_0	Nm	8
Max. voltage	U_{max}	V	350
Stall current	I_0	A	6
Nominal current	I_N	A	5
Nominal torque	M_N	Nm	6.5
Nominal power	P_N	W	2000
Nominal speed	N_N	min^{-1}	3000
Max. speed	N_{max}	min^{-1}	4000
Peak current	I_{max}	A	18
Voltage constant	K_E	V/Krpm	80
Torque constant	K_T	Nm/A	1.32
Rotor inertia	J_R	kg cm^2	27
Winding resistance at 20°C	R_{U-V}	Ohm	2.3
Winding inductance at 1 kHz	L_{U-V}	mH	10
Weight	m	kg	11

Dimensions



Dimensions in mm

	MC 17-BL	MC 19-BL	MC 23-BL
A	ø186	ø186	ø242
Bj6	ø95	ø130	ø180
C	ø14	ø24	ø28
D	95	106.5	118
E	115	165	215
F	M8	M8	M12

Questions? Call us:

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