Motors and drives

DC Brushless torque motor

Key features

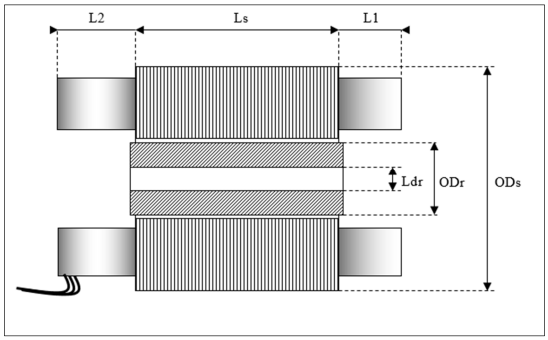
- Low maintenance
- Reduced friction torque and cogging
- Customised designs

Applications

- Conventional radar antennae
- Electro-optical systems
- Remote control weapon systems (RCWS)
- Targeting gimbals rotation

Extensive range of electric motors, from a few Watts to more than 200 kW. These motors are intended to fit on-board aerospace, defence, and other demanding environments. They are available as a line replaceable unit (housed) or frameless that can be integrated by the customer. These low friction motors power high torque drives while preventing the need for a reduction gear.

General outline



Outside dia. Stator (ODs)
Outside dia. Rotor (ODr)
Stack lamination length (Ls)
End turns length (L1)
End turns length wires output side (L2)
Inside dia. Rotor (Ldr)

Model	ODs	ODr	Ls	L1	L2	Ldr	Weight	Rotor inertia
	mm	mm	mm	mm	mm	mm	g	$Kg.m^2$
BMB414C01	168.3	122.8	14	8.5	12.5	105	2550	1.2E-03

Contact

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Specifications

	Symbol	Unit	BMB414C01
Size constants			
Continuous stall torque	Tc	Nm	6.100
Motor constant	Km	Nm/√W	0.67742
Cogging Torque (peak/peak)	Cogg	Nm	0.0600
Motor friction torque	T_f	Nm	0.150
Viscous friction torque	F_i	Nm/rad/s	3.5E-03
Max. winding temperature		°C	155
Ultimate temperature rise/Watt	TPR	°C/W	0.75
Number of poles	2p	-	26
Winding constants (alternate windings available)			
Terminal DC voltage	U_{dc}	V DC	150
Peak torque	T_p	Nm	41.833
Peak current	I_P	A	25.42
Torque Sensitivity Ph to N at max. current	Kt Ph/N	Nm/A	0.95000
Back EMF peak Ph to N	Kb Ph/N	V/(rad/s)	0.95000
Resistance Phase to neutral @ 25°C	R Ph/N	Ohm	2.95
Inductance Phase to neutral	L Ph/N	mH	4.85
No Load Speed	Ω_0	Rpm	855
Winding Connection	/	/	Star
Mechanical Time Constant	τ_m	ms	4.06
Electrical Time Constant	τ_e	ms	1.64

Note: Due to continuous process improvement, specifications are subject to change without notice

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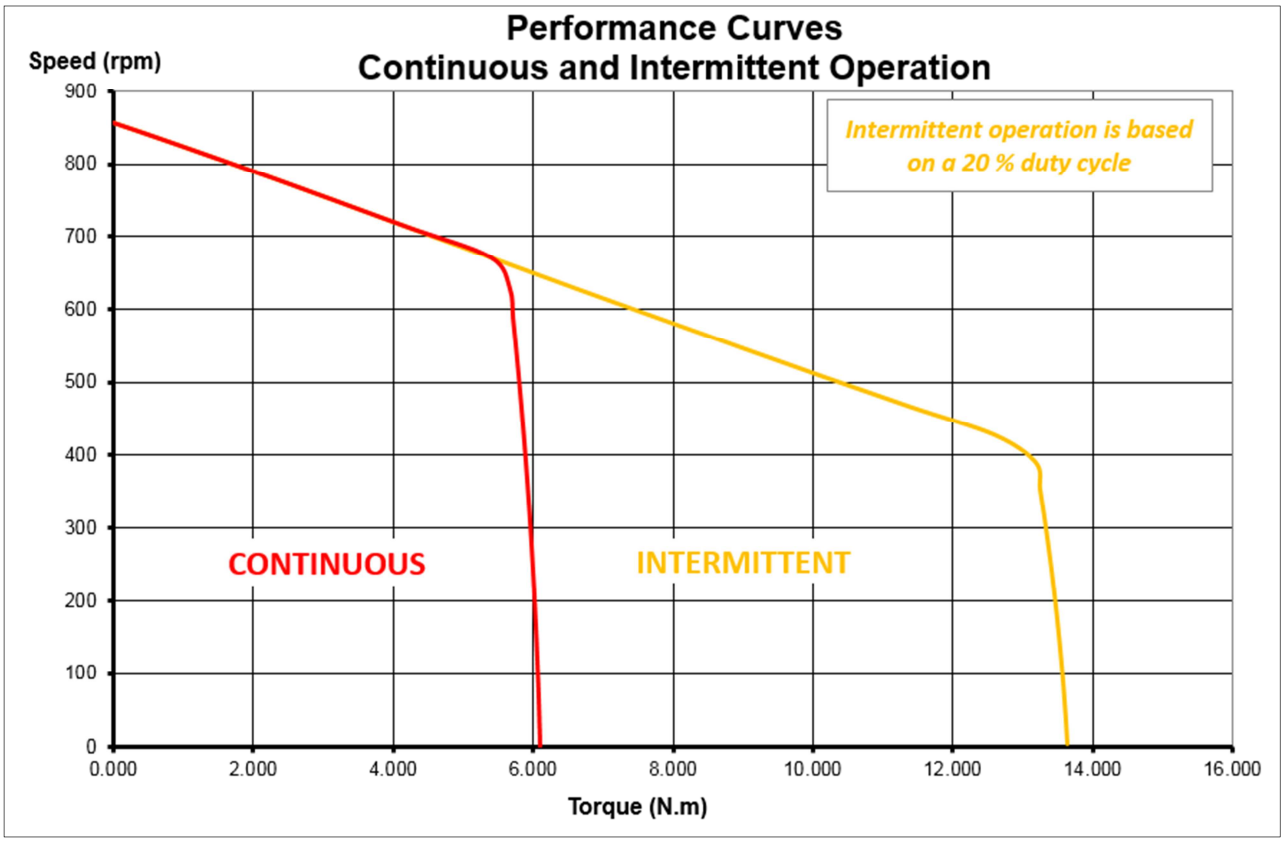
Performance curves



BMB414C01

Performance curves and TPR assume with housed motor mounted to (170 x 170 x 6) mm

Notes:

1. *Typical electrical specification at 25 °C*
2. *Many other custom mechanical options are available – for assistance please contact our applications engineer*
3. *Many other winding options are available - for assistance please contact our applications engineer*
4. *Housed or frameless designs are available*