ELECTROMAG

Powerfully quiet motors for podiatry drills

Since 2003, Electromag has been developing ultra-quiet high speed brushless DC motors for healthcare applications. The powerful 16 mm series offers manufacturers of podiatry drills a highly efficient, reliable and cost-effective solution that is designed and assembled in Switzerland according to ISO13485 quality management system.

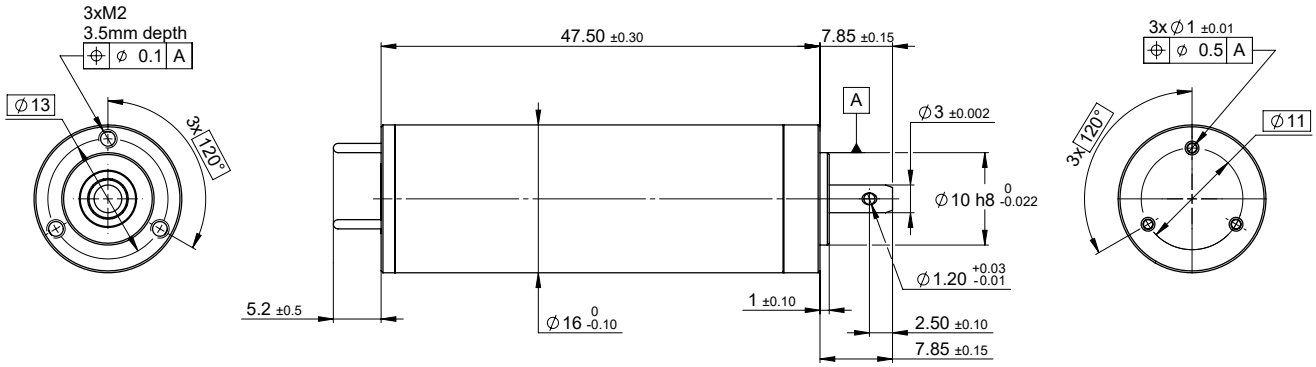
Benefits

- Lowest vibration and noise level for a optimal practitioner comfort and patient experience
- High torque density
- Increased device lifetime thanks to reliable design and protection against ingress of dust
- Design and test procedure according to IEC-60601-1 standard for the safety of medical electrical equipment

Options

- Adaptable motor specifications
- Hall sensors, temperature sensors (NTC)
- Connectivity using lead wires, integrated contacts or connector

Technical data



MOTOR PARAMETERS (25°C)

	Phase-Phase resistance	ohm	1.42
	Torque constant	mNm/A	7.46
	Back EMF constant	V/Krpm	0.78
	Phase-Phase inductance	mH	0.12
	Motor constant	mNm/√W	6.3
	Rotor inertia	10-7 Kg.m²	0.76
	Mechanical time constant	ms	1.9
	Electrical time constant	ms	0.08

DYNAMIC PARAMETERS AT NOMINAL VOLTAGE (25°C)

	NOMINAL VOLTAGE	VDC	30
NO LOAD	Current	mA	130
	Speed	rpm	38'400
	Electrical input power	W	3.9
PEAK EFFICIENCY	Current	A	1.7
	Torque	mNm	11.4
	Speed	rpm	35'400
	Electrical input power	W	50
	Mechanical output power	W	42
	Efficiency	%	85%
STALL	Current	A	21
	Torque	mNm	158
	Electrical input power	W	634

MOTOR SPECIFICATIONS

Number of pole pairs	-	1
Number of phases	-	3
Motor Mass	g	46
Thermal resistance	°C/W	14
Max permissible winding temperature	°C	155

- Other configurations available on request.
- Please contact us for more detailed information.

Notes

Specified numbers are typical values.

Efficiency and temperature maps are obtained using a heat sink that reduces the motor thermal resistance by 50% (typical case).

Continuous operation is allowed until the maximum winding temperature has been reached. Beyond this point, intermittent operation or additional cooling should be considered.

Specifications subject to change without prior notice.

ultra-quiet high-speed motors

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