

DC Motor Ø 52

1.13.044.XXX



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Design	
Commutator	Copper/12-segments
RFI Protection	-
Insulation class	Winding H, otherwise A
Protection class	IP40
Commutation	carbon brushes
Armature	skewed slot
Magnet system	Permanent magnets, 2-pole
Bearings	2 preloaded ball bearings
Housing	Steel, corrosion protected
End shields	zinc die-cast on both sides

Type 1.13.044.XXX			235	236	413	414
Characteristics*						
Rated voltage	V	V	12	24	12	24
Rated power	P_N	W	47	47	56	56
Rated torque	T_N	mNm	150	150	180	180
Rated speed	n_N	rpm	3000	3000	3000	3000
Rated current	I_N	A	6.2	3.1	7.3	3.5

No load characteristics*						
No load speed	n_o	rpm	3900	3900	3900	3800
No load current	I_o	A	0.40	0.20	0.40	0.20

Starting characteristics*						
Starting torque	T_s	mNm	640	640	840	940
Starting current	I_s	A	24	12	31	16

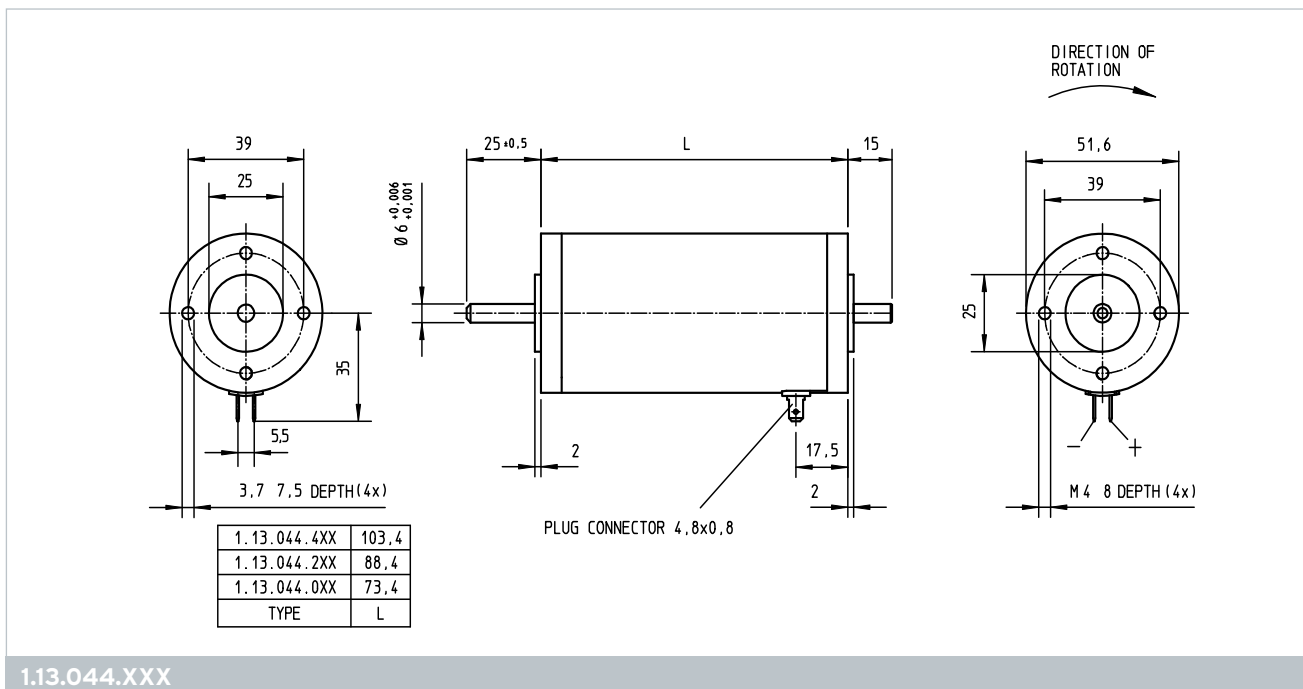
Performance characteristics*						
max. Output power	P_{max}	W	65	65	85	85
max. Constant torque	T_{max}	mNm	100	100	120	120

Motor parameters*						
Weight	G	g	765	765	940	940
Rotor inertia	J	gcm ²	180	180	250	250
Terminal resistance	R	Ohm	0.5	2.0	0.40	1.4
Mech. time constant	τ_m	ms	13	13	13	13
Electr. time constant	τ_e	ms	1.0	1.0	1.0	1.0
Speed regulation constant	R_m	rpm/mNm	6	6	4.7	4.1
Torque constant	k_t	mNm/A	28	56	27	57
Thermal resistance	R_{th1}	K/W	5.0	5.0	3.5	3.5
Thermal resistance	R_{th2}	K/W	4.5	4.5	4.0	4.0
Axial play		mm	< 0.01	< 0.01	< 0.01	< 0.01
Direction of rotation	bidirectional					

Operational conditions

Temperature range	T	°C	-10 - +70
Axial force	F_A	N	30
Radial force, 15 mm from mounting surface	F_R	N	120

* at 25° C



Customized versions

The following modifications are available upon request:

- ▶ Encoder possible
- ▶ Internal chokes and/or capacitors
- ▶ Speed adjustment by winding change
- ▶ Addition of wire harnesses
- ▶ Modification of shaft length on both ends
- ▶ Modification of shaft configuration (flat, groove, etc.)
- ▶ Assembly of gears, pinions, worms, etc.
- ▶ Assembly of adapters and mounting plates

Note: Is used with Bühler gear motor types 1.61.050.xxx, 1.61.090.xxx