

# 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	Graphite/copper-carbon brushes
Armature	sintered, straight slot
Magnet system	Permanent magnets, 2-pole
Bearings	2 preloaded ball bearings
Housing	Steel, corrosion protected
End shields	on both sides zinc die-cast

Type 1.13.044.XXX			235	236	413	414
<b>Characteristics*</b>						
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

<b>No load characteristics*</b>						
No load speed	$n_o$	rpm	3900	3900	3900	3800
No load current	$I_o$	A	0.93	0.46	0.86	0.41

<b>Starting characteristics*</b>						
Starting torque	$T_s$	mNm	640	640	840	940
Starting current	$I_s$	A	24	12	31	17

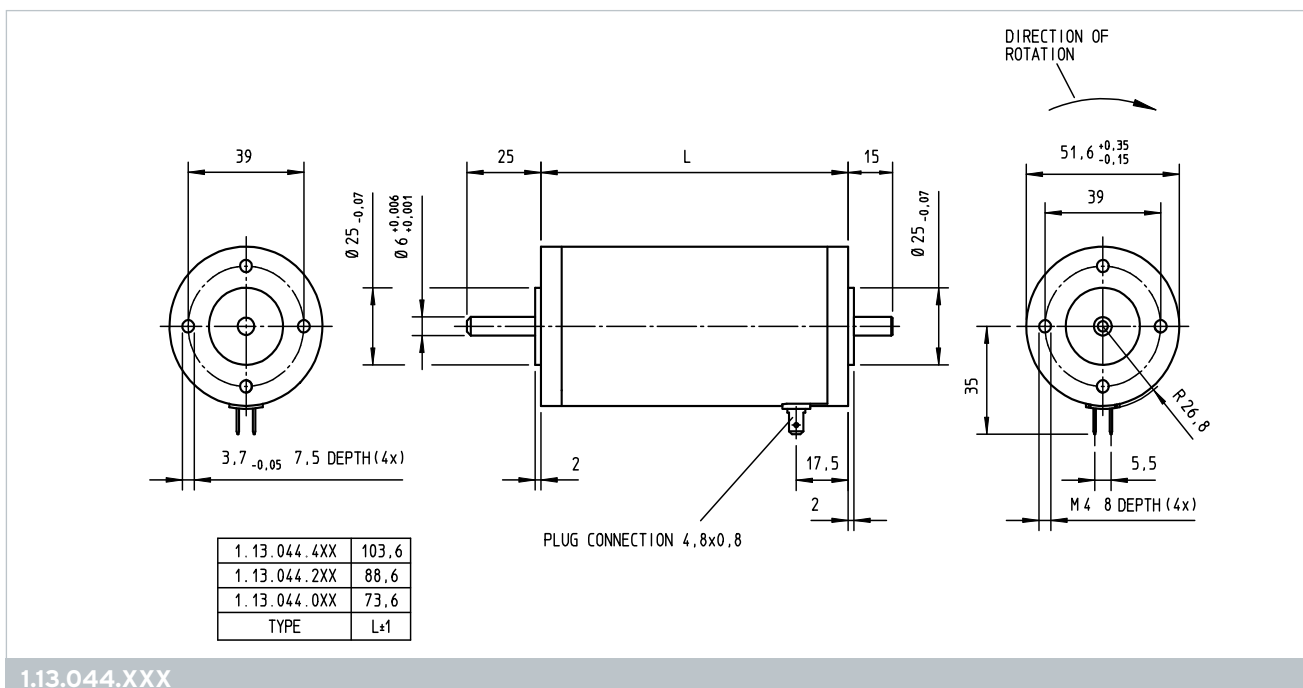
<b>Performance characteristics</b>						
max. Output power	$P_{max}$	W	65	65	85	85
max. Constant torque	$T_{max}$	mNm	100	100	120	120

<b>Motor parameters*</b>						
Weight	G	g	765	765	940	940
Rotor inertia	J	gcm <sup>2</sup>	180	180	250	250
Terminal resistance	R	Ohm	0.5	2.0	0.38	1.4
Mech. time constant	$\tau_m$	ms	13	13	13	13
Electr. time constant	$\tau_e$	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	4.8	4.8	3.4	3.4
Thermal resistance	$R_{th2}$	K/W	4.6	4.6	4.3	4.3
Axial play		mm	< 0.01	< 0.01	< 0.01	< 0.01
Direction of rotation	bidirectional					

## Operational conditions

Temperature range	T	°C	-10 - +70
Humidity at room temperature	rel. F.	%	15 - 55
No condensation		g H <sub>2</sub> O / m <sup>3</sup>	2 - 25
Axial force	F <sub>A</sub>	N	30
Radial force, 15 mm from mounting surface	F <sub>R</sub>	N	120
Operating mode at P <sub>max</sub>			S5
Operating mode at T <sub>max</sub>			S1

\* at 25° C



## Customized versions

The following modifications are available upon request:

- ▶ Encoder with resolution of 400 or 1000 pulses
- ▶ Chokes and capacitors
- ▶ Speed adjustment through winding change
- ▶ Lead sets
- ▶ Shaft length on both ends
- ▶ Shaft configuration (flat, grooved, etc.)
- ▶ Drive configuration
- ▶ Adapters and mounting plates

Note: Can be used with Bühler gear motor types 1.61050.xxx, 1.61.090.xx