

DC Motor Ø 31

1.13.021.XXX



Design	
Commutator	Copper/7-segments
RFI Protection	2 chokes (not 1.13.021.701)
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 sintered bronze bearings, drive end with ball bearings on model 1.13.021.605
Housing	Steel, corrosion protected
End shields	brush end plastic drive end zinc die-cast

Type 1.13.021.XXX			343	344	318	605	701
Characteristics*							
Rated voltage	V	V	12	24	24	12	12
Rated power	P_N	W	6.3	6.3	8.8	10.1	2.8
Rated torque	T_N	mNm	20	20	21	32	10
Rated speed	n_N	rpm	3000	3000	4000	3000	2650
Rated current	I_N	A	0.90	0.50	0.54	1.2	0.45

No load characteristics*							
No load speed	n_o	rpm	4400	4200	5250	4100	4100
No load current	I_o	A	0.10	0.07	0.07	0.07	0.07

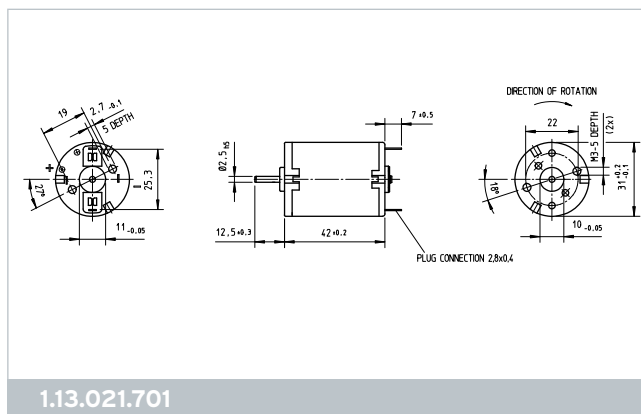
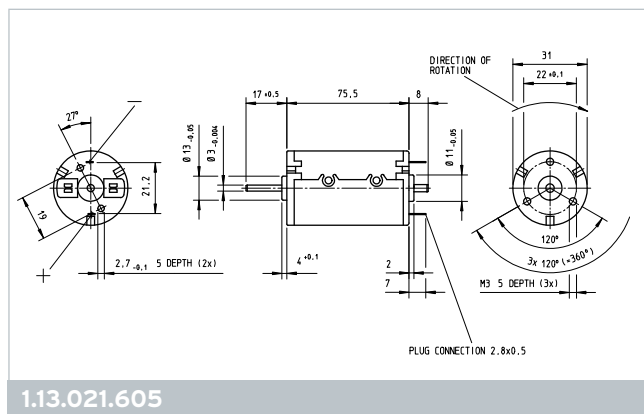
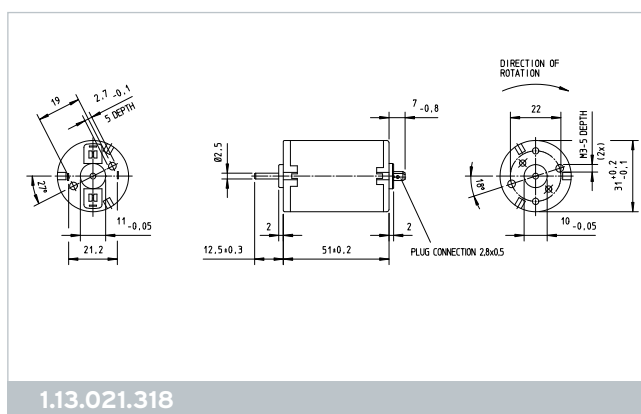
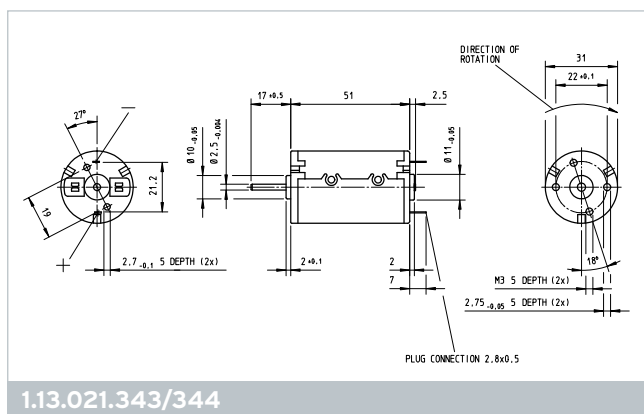
Starting characteristics*							
Starting torque	T_s	mNm	61	61	85	120	28
Starting current	I_s	A	2.50	1.30	2.00	4.80	1.15

Performance characteristics							
max. Output power	P_{max}	W	7.0	6.7	10	13	3.0
max. Constant torque	T_{max}	mNm	1.1	1.1	1.4	1.9	0.6

Motor parameters*							
Weight	G	g	135	135	135	235	105
Rotor inertia	J	gcm ²	16	16	16	33	9.1
Terminal resistance	R	Ohm	4.8	19	12	11	10
Mech. time constant	τ_m	ms	11	11	11	11	11
Electr. time constant	τ_e	ms	0.8	0.8	0.8	0.8	0.8
Speed regulation constant	R_m	rpm/mNm	71	65	61	35	146
Torque constant	k_t	mNm/A	25	48	42	51	25
Thermal resistance	R_{th1}	K/W	10	10	10	5.1	13
Thermal resistance	R_{th2}	K/W	11	11	11	7.8	13
Axial play		mm	0.05 - 0.7	0.05 - 0.7	0.05 - 0.7	0.05 - 0.7	0.05 - 0.7
Direction of rotation	bidirectional						

Operational conditions			
Temperature range	T	°C	-10 - +70
Humidity at room temperature	rel. F.	%	15 - 55
No condensation		g H ₂ O/m ³	2 - 25
Axial force	F _A	N	5
Radial force, 15 mm from mounting surface	F _R	N	20/1.13.021.605=40
Operating mode at P _{max}			S5
Operating mode at T _{max}			S1

* at 25° C



Customized versions

The following modifications are available upon request:

- ▶ Encoder
- ▶ Chokes and/or 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 1.61.046.xxx, 1.61.042.xxx and 1.61.077.xxx