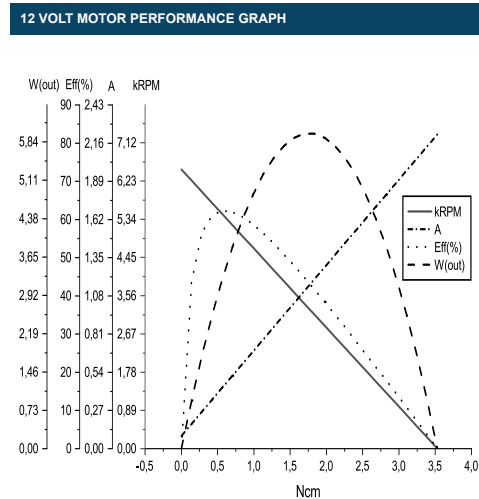


1 = empty → sleeve bearing
1B = ball bearing
2F = emc filter varistor / capacitor
3E = magnetic encoder
4 = empty → no encoder rear cover cap
4C = magnetic encoder rear cover cap

The diagram on the left shows a multi-pin connector with 12 pins, labeled 1 through 12. The pins are color-coded: 1 (purple), 2 (blue), 3 (green), 4 (red), 5 (yellow), 6 (orange), 7 (brown), 8 (grey), 9 (white), 10 (black), 11 (dark blue), and 12 (light blue). The connector is shown in a cross-section view, revealing the internal wiring and the metal housing. To the right is a photograph of a multi-pin connector module, showing the pins and the internal components.

GEAR MOTOR DATA														C
Gear reduction		1:5	1:14	1:19	1:27	1:51	1:71	1:100	1:139	1:189	1:264	1:516	1:721	
Nominal torque ^ gear box limit	mNm	29.4	73.5	98.1	137	226	324	451	637	716	981	1177^	1177^	
Nominal speed	rpm	995	373	270	195	104	74.0	53.0	38.0	28.0	20.0	11.2	8.3	
Peak torque ^ gear box limit	mNm	588	1177	1177^	1765	2354	2354^	2942	2942^	3530	3530^	3530^	3530^	
Mechanical power	W	2.459	2.016	1.946	1.968	1.478	1.509	1.506	1.526	1.052	1.030	0.692	0.513	
Efficiency gear head	%	80	70	70	70	60	60	60	60	50	50	50	50	
Length gear box = L	mm	20.6	27.0	27.0	27.0	33.4	33.4	33.4	33.4	39.8	39.8	39.8	39.8	
Weight	g	174	194	194	194	219	219	219	219	245	245	245	245	

GEAR MOTOR COMBINED DATA			C	GEAR BOX SHAFT DATA			C	GEAR BOX SPECIFIC DATA			C
Service life brush wear	500 h continous operation	●	Radial play thrust play	mm	≤ 0.05 ≤ 0.3			Material gear stage	Ratio 1:5 sintered steel	●	
Performance tolerances	% ± 15		Shaft axial load	N	24.5			Material > 1:5 ratio / stage	POM first + sintered steel	●	
Operating temperature	-10-....+60 °C	●	Radial load	N	34.3			Direction of rotation	CCW or CW by reversed V polarity		
IP code	20		Press fit force max.	N	98.1			Assembly front bell	mm	Maximum screw depth 4.0	
Manufacturing standard	ISO9001 ISO 14001 TS16949		Backlash no load	°	≤ 2.5						
Compliance	RoHS and REACH		Bearing type shaft material		Ball bearing AISI 1144						
Label CE UL	CE no UL no		Motor pinion material shape	Steel straight		●					



MOTOR SPECIFIC DATA			C
Nominal voltage	V	12 (24 V separate data sheet)	●
No load speed	rpm	6500	
Nominal speed	rpm	5290	
Nominal torque	Ncm	0.76	
Nominal current	A	≤ 0.53	
Nominal mechanical power	W	4.22	
Stall torque	Ncm	3.53	
Starting current	A	2.22	
Motor commutation	Carbon brush		●
Motor rotor stator	Iron rotor Ferrit magnet		
Varistor emc	V	13-18.4	●
Capacitor emc	V	12	
Resistance	ohm	5.67	
Inductance	mH	3.35	
Insulation class	F		●

GEAR MOTOR RANGE STANDARD AVAILABILITY			
Nominal voltage	V	2.4 - 24	separate data sheet
Nominal mechanical power	W	0.023 - 25	separate data sheet
Diameter	mm	12 - 42	separate data sheet
Feedback encoder		Hall Optical	see below

ACCESSORIES		
Power supplies LRS	V 3.3 - 48	separate data sheet

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