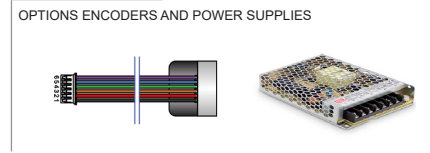


- 1 = empty → sleeve bearing
- 1B = ball bearing
- 2F = emc filter varistor / capacitor
- 3E = magnetic encoder
- 4 = empty → no encoder rear cover cap
- 4C = magnetic encoder rear cover cap



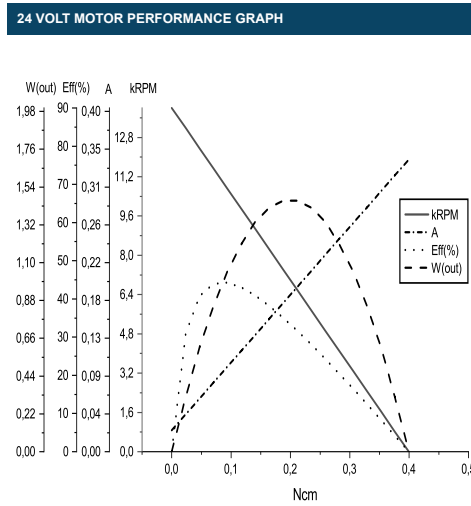
● C = customizations are offered on demand even for smaller quantities. Typical customizations indicated with green dot at column end. Please contact us for any customization request

GEAR MOTOR DATA																					C		
Gear reduction		1:4	1:14	1:19	1:29	1:62	1:72	1:84	1:104	1:128	1:157	1:231	1:316	1:370	1:455	1:561	1:690	1:1024	1:1621	1:1996	1:3027		
Nominal torque ^ gear box limit	mNm	3.0	8.3	11.8	17.7	32.4	37.3	44.1	54.9	67.7	83.4	98.1	137	157	196	196	235 ^A	235 ^A	235 ^A	235 ^A	235 ^A	235 ^A	
Nominal speed	rpm	2400	760	555	365	170	150	130	105	85	69	47	34	29	24	19.5	15.9	11	7.2	6.1	4.1		
Peak torque ^ gear box limit	mNm	235	353	353 ^A	353 ^A	471	471 ^A	471 ^A	471 ^A	471 ^A	471 ^A	588	588 ^A	588 ^A	588 ^A	588 ^A	588 ^A	706	706 ^A	706 ^A	706 ^A		
Mechanical power	W	0.613	0.466	0.480	0.474	0.347	0.352	0.361	0.363	0.362	0.362	0.242	0.245	0.239	0.247	0.201	0.196	0.109	0.071	0.060	0.041		
Efficiency gear head	%	80	70	70	70	60	60	60	60	60	60	50	50	50	50	50	50	40	40	40	40		
Length gear box = L	mm	15.05	18.7	18.7	18.7	22.35	22.35	22.35	22.35	22.35	22.35	26	26	26	26	26	26	29.65	29.65	29.65	29.65		
Weight	g	37	41	41	41	45	45	45	45	45	45	49	49	49	49	49	49	53	53	53	53		

GEAR MOTOR COMBINED DATA		C
Service life brush wear	500 h continuous operation	●
Performance tolerances	% ± 15	
Operating temperature	-10...+60 °C	●
IP code	30	
Manufacturing standard	ISO9001 ISO 14001 TS16949	
Compliance	RoHS and REACH	
Label CE UL	CE no UL no	

GEAR BOX SHAFT DATA		C
Radial play thrust play	mm ≤ 0.08 ≤ 0.2	
Shaft axial load	N 4.9	
Radial load	N 4.9	
Press fit force max.	N 14.7	
Backlash no load	° ≤ 3	
Bearing type shaft material	Sleeve bearing JIS SUJ2	
Motor pinion material shape	Steel straight	●

GEAR BOX SPECIFIC DATA		C
Material gear stage	Ratio 1:4 steel	●
Material > 1:4 ratio / stage	POM first + steel	●
Direction of rotation	CW or CCW by reversed V polarity	
Assembly front bell	mm Maximum screw depth 3.0	



MOTOR SPECIFIC DATA		C
Nominal voltage	V 24 (12V separate data sheet)	●
No load speed	rpm 14000	
Nominal speed	rpm 10920	
Nominal torque	Ncm 0.096	
Nominal current	A ≤ 0.085	
Nominal mechanical power	W 1.1	
Stall torque	Ncm 0.43	
Starting current	A 0.34	
Motor commutation	Carbon brush	●
Motor rotor stator	Iron rotor Ferrit magnet	
Varistor emc	V 40	●
Capacitor emc	No	
Resistance	ohm 70.5	
Inductance	mH 15	
Insulation class	A	●

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 see below

ACCESSORIES

Power supplies LRS	V 3.3 - 48	separate data sheet
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ENCODER OPTIONS		MAGNETIC HALL SENSOR		C
Pulses per revolution		3 x 2		●
Channels phase shift		2 90° ±(1/6)T		
Encoder rear cover		No cover		
Sensor technical data	Refer externally to brand and part UTC-SK1816			
Size	Ø 9.5 x 6 mm			
Harness connector	JST ZHR-6 P=1.5-6P			●
Harness cable	UL1061 AWG26 100 mm			●
Connection	BLK M- RED M+ BRN Vcc GRN GND BLU A VIO B			
Supply voltage Vcc	min.3.5 ref - max. 20 V			
Supply Current Ice	Vcc 20V open output min. - ref. 5 max. 10 mA			
Open collector output	Requires external output resistors			