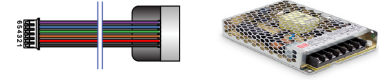


OPTIONS ENCODERS AND POWER SUPPLIES



MODEL NO. DESIGNATION EXAMPLE



1 - 2 - 3 - 4

- 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

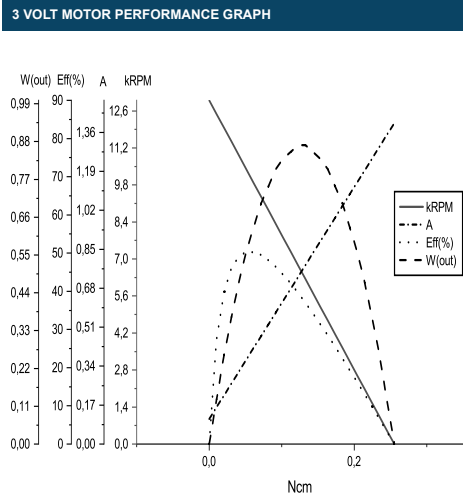
● C = customizations are offered on demand even for smaller quantities. Typical customizations indicated with green dot at column end. Please contact us for any customization request

GEAR MOTOR DATA								C
Gear reduction		1:4	1:16	1:64	1:256	1:1024	1:4096	
Nominal torque   ^ gear box limit	mNm	1.9	6.4	22	76	196^	196^	
Nominal speed	rpm	2400	610	150	39	10	2.8	
Peak torque   ^ gear box limit	mNm	235	353	471	530	588^	588^	
Mechanical power	W	0.399	0.306	0.231	0.172	0.093	0.023	
Efficiency gear head	%	85	75	65	55	45	40	
Length gear box = L	mm	12.8	16.1	19.4	22.7	26.0	29.3	
Weight	g	25.1	27.2	29.3	31.4	33.5	35.6	

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   SUS303	
Motor pinion material   shape	Brass   straight	●

GEAR BOX SPECIFIC DATA		C
Material gear stage	Ratio 1:4 brass	●
Material > 1:4 ratio / stage	POM first + brass	●
Direction of rotation	CW or CCW by reversed V polarity	
Assembly front bell	mm Maximum screw depth 2.5	



MOTOR SPECIFIC DATA		C
Nominal voltage	V 3.0 (2.4V separate data sheet)	●
No load speed	rpm 13000	
Nominal speed	rpm 10140	
Nominal torque	Ncm 0.056	
Nominal current	A ≤ 0.39	
Nominal mechanical power	W 0.59	
Stall torque	Ncm 0.25	
Starting current	A 1.4	
Motor commutation	Metal brush	●
Motor rotor   stator	Iron rotor   Ferrit magnet	
Varistor emc	V 2.0 - 4.0	●
Capacitor emc	No	
Resistance	ohm 1.1 - 1.5	
Inductance	mH 0.5	
Insulation class	B	●

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

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 7 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		