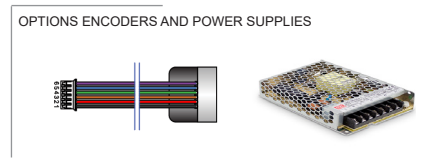


- 1 = empty → sleeve bearing
- 1B = ball bearing
- 2F = emc filter varistor / capacitor
- 3E = magnetic encoder
- 4 = empty → no encoder rear cover cap
- 4C = magnetic encoder rear cover cap



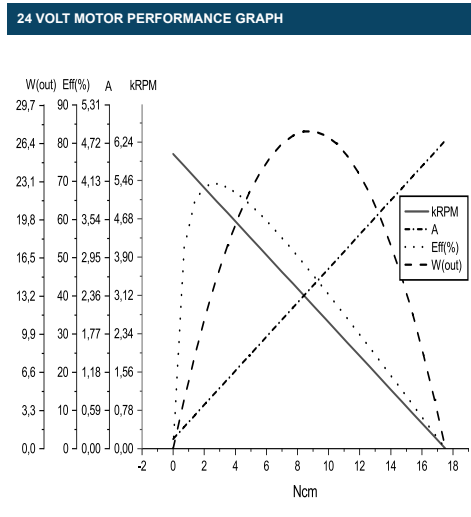
● C = customizations are offered on demand even for smaller quantities. Typical customizations indicated with green dot at column end. Please contact us for any customization request

GEAR MOTOR DATA													C
Gear reduction		1:5	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	98.1	226	314	441	716	785	981	981	1177^	1177^	1177^	1177^
Nominal speed	rpm	990	375	268	192	101	74.5	54.0	40.0	29.5	22.0	11.5	8.0
Peak torque ^ gear box limit	mNm	588	1177	1177^	1765	2354	2354^	2942	2942^	3530	3530^	3530	3530^
Mechanical power	W	8.155	6.217	6.181	6.228	4.555	3.682	3.336	2.471	1.823	1.359	0.710	0.494
Efficiency gear head	%	80	70	70	70	60	60	60	60	50	50	50	50
Length gear box = L	mm	22.1	28.5	28.5	28.5	34.9	34.9	34.9	34.9	41.3	41.3	41.3	41.3
Weight	g	328	362	362	362	396	396	396	396	430	430	430	430

GEAR MOTOR COMBINED DATA			C
Service life brush wear	500 h continuous operation		●
Performance tolerances	% ± 15		
Operating temperature	-10...+60 °C		●
IP code	20		
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	≤ 0.05 ≤ 0.3	
Shaft axial load	N	24.5	
Radial load	N	34.3	
Press fit force max.	N	98.1	
Backlash no load	°	≤ 2.5	
Bearing type shaft material		Ball bearing hardened SS	
Motor pinion material shape		Steel straight	●

GEAR BOX SPECIFIC DATA			C
Material gear stage	Ratio 1:5 sintered steel		●
Material > 1:5 ratio / stage	POM first + sintered steel		●
Direction of rotation	CCW or CW by reversed V polarity		
Assembly front bell	mm	Maximum screw depth 5.5	



MOTOR SPECIFIC DATA			C
Nominal voltage	V	24 (12 V separate data sheet)	●
No load speed	rpm	6000	
No load current	A	0.160	
Nominal speed	rpm	5150	
Nominal torque	Ncm	2.45	
Nominal current	A	≤ 0.75	
Nominal mechanical power	W	12.7	
Stall torque	Ncm	17.51	
Starting current	A	4.76	
Motor commutation		Carbon brush	●
Motor rotor stator		Iron rotor Ferrit magnet	
Varistor emc	V	27-45	●
Capacitor emc	V	24	
Resistance	ohm	5.3	
Inductance	mH	9.0	
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

ENCODER OPTIONS	MAGNETIC HALL SENSOR	OPTICAL SENSOR	C
Pulses per revolution	7 x 2	(100 200 256 360 400 500) x 2	●
Channels phase shift		2 90° ±(1/6)T	
Encoder rear cover	Cover cap in ABS plastic	Zink alloy	
Sensor technical data	Refer externally to brand and part UTC-SK1816		
Size	Ø 36 x 13.5	D19+4.5 x W30 x H40 mm	
Harness connector	JST ZHR-6 P=1.5-6P	JST SMR-05V	●
Harness cable	UL1061 AWG26 100 mm	UL2464 AWG24x4C 195 mm	●
Connection	BLK M- RED M+ BRN Vcc GRN GND BLU A VIO B	RED Vcc GRN GND BLK A WHT B	
Supply voltage Vcc	min.3.5 ref - max. 20 V	5 ±10% V	
Supply Current Ice	Vcc 20V open output min. - ref. 5 max. 10 mA		
Open collector output	Requires external output resistors		
Output current / channel		± 20 mA	