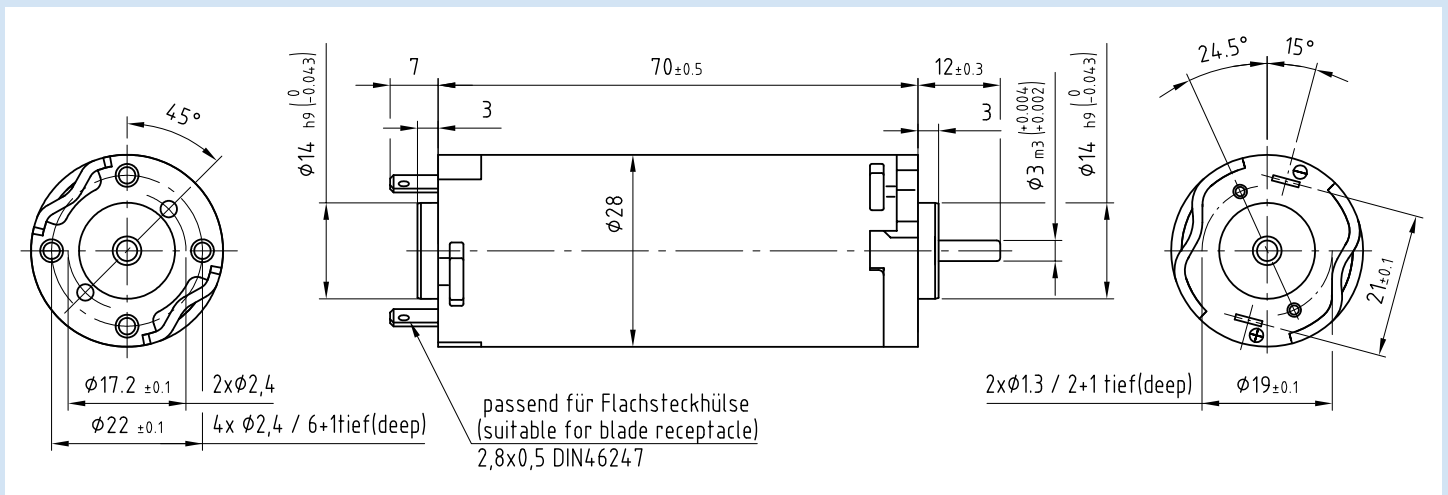


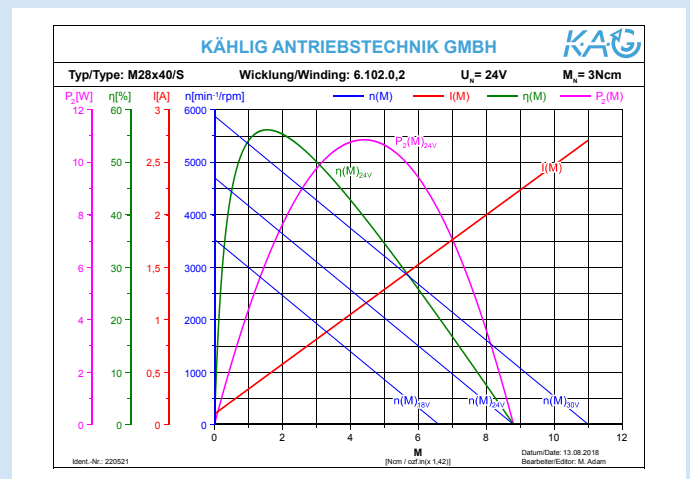
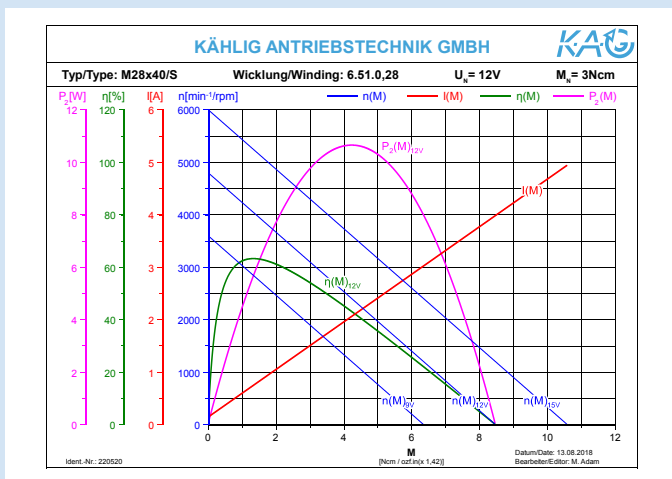
DC-Motor M28x40/S

Id.-Nr. 220520 (12V) 220521 (24V)

- Brushed DC motor with permanent magnets
- Sintered bearings
- Clip connection
- Closed zinc-plated housing with plastic bearing flanges
- Direction of rotation CW / CCW



Application on request



Stand: 23. Juli 2020 – changes reserved

DC-Motor M28x40/S

Id.-Nr. 220520 (12V) 220521 (24V)

Performance

	Sign	Unit	Value 12V	Value 24V	Tolerances
Rated Voltage	U_N	V	12	24	
Rated torque ¹⁾	M_N	Ncm	3	3	
Rated speed ¹⁾	n_N	min ⁻¹	3100	3100	±10%
Rated current ¹⁾	I_N	A	1,5	0,81	±20%
No load speed ¹⁾	n_0	min ⁻¹	4800	4700	±15%
No load current ¹⁾	I_0	A	0,14	0,1	±50%
Rated power output ¹⁾	P_{2N}	W	9,7	9,7	
Rated power input ¹⁾	P_{IN}	W	18	19,4	
Rated efficiency ¹⁾	η_N	%	54,1	50,1	
Maximum power output ²⁾³⁾	P_{2max}	W	10,6	10,8	
Maximum continuous torque ²⁾³⁾	M_{max}	Ncm	3	3	
Maximum continuous current ²⁾³⁾	I_{max}	A	1,5	0,81	
Maximum speed ¹⁾³⁾	n_{max}	min ⁻¹	12000	12000	
Anhaltmoment ¹⁾	M_H	Ncm	8,5	8,8	
Stall torque ¹⁾	I_H	A	4	2,2	
Demagnetization current	I_E	A	6,2	3,61	
Connecting resistance	R	Ω	3,02	10,98	
Armature resistance ¹⁾	R_A	Ω	2,55	10,1	±5%
Armature inductance [1 kHz] ¹⁾	L_A	mH	2,01	8,23	
Rise of speed-characteristic ¹⁾	k_D	Ncm/min	- 566,7	- 533,33	
Torque constant ¹⁾	k_M	Ncm/A	2,2	4,23	
Voltage constant ¹⁾	k_E	V/10 ³ min ⁻¹	2,4	4,87	
Friction torque ¹⁾	M_R	Ncm	- 0,3	- 0,42	
Mechanical time constant ¹⁾	T_M	ms	10,7	10,19	
Electrical time constant ¹⁾	T_e	ms	0,7	0,75	
Rotor inertia	J_R	gcm ²	24	24	
Maximum case temperature ²⁾	ϑ_G	°C	80	80	
Starting voltage ¹⁾	U_A	V	2	2	
Permissible axial shaft loads ³⁾	F_{axial}	N	5	5	
Permissible radial shaft loads ³⁾	F_{radial}	N	20	20	
Protection class DIN VDE 0530			IP30		
Duty cycle DIN VDE 0530			S1		
Insulation class DIN VDE 0530			E		
Lifetime at rated torque _N			≥ 1500 h		
Ambient temperature			-15°C to +40°C		
Bearing			2 Sintered bearings		
Interference suppression			feasible		

1) ϑ_w Winding temperature ≈ 20°C 2) $\Delta\vartheta_w$ allowable = 100K
 3) The operating at maximum levels reduces the lifespan

Stand: 23. Juli 2020 – changes reserved