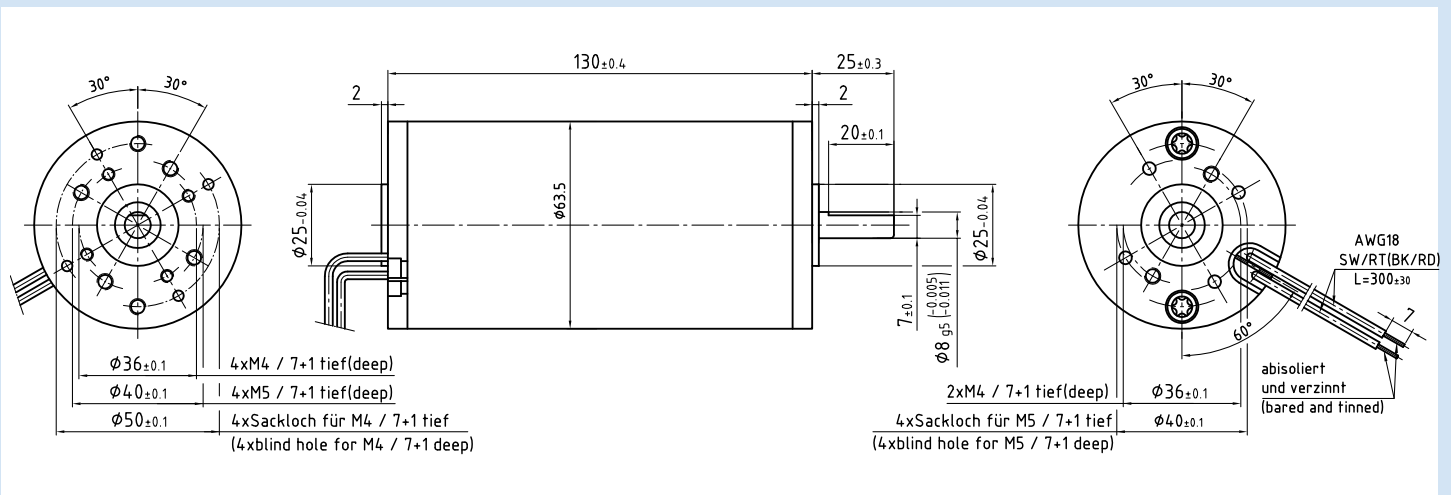


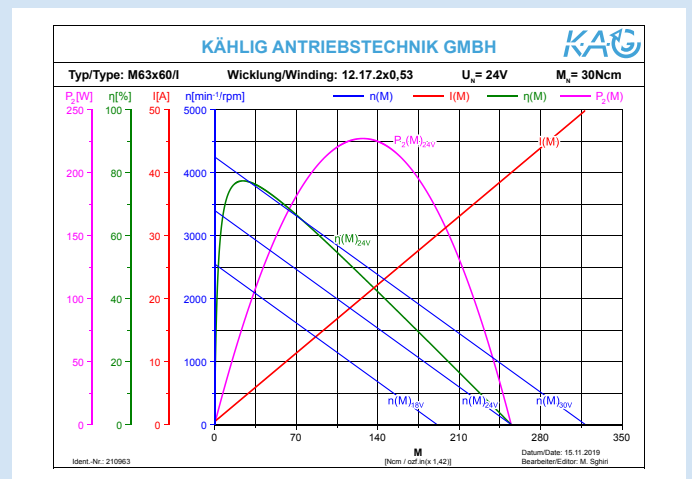
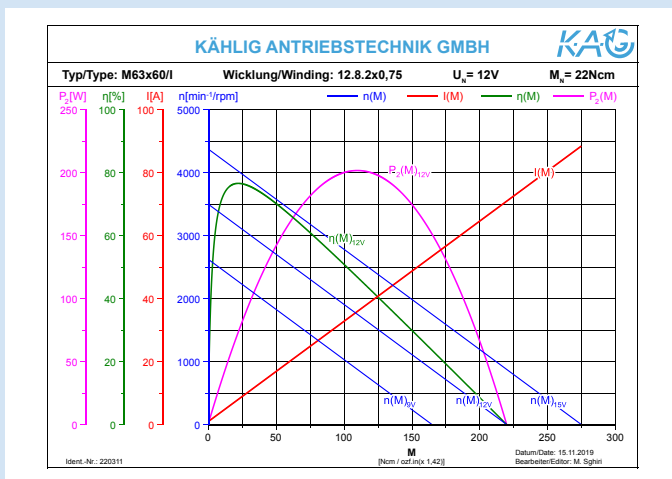
DC-Motor M63x60/I

Id.-Nr. 220311 (12V) 210963 (24V)

- Brushed DC motor with permanent magnets
- Ball bearings
- Lead wires
- Chromatised housing with zinc-die-cast bearing flanges
- Direction of rotation CW / CCW
- Multiple combination possibilities with gears, encoders, brakes and control electronics



Application on request



Stand: 23. Juli 2020 – changes reserved

DC-Motor M63x60/I

Id.-Nr. 220311 (12V) 210963 (24V)

Performance

	Sign	Unit	Value 12V	Value 24V	Tolerances
Rated Voltage	U_N	V	12	24	
Rated torque ¹⁾	M_N	Ncm	22	30	
Rated speed ¹⁾	n_N	min ⁻¹	3150	3000	±10%
Rated current ¹⁾	I_N	A	7.9	5.1	±20%
No load speed ¹⁾	n_0	min ⁻¹	3500	3400	±15%
No load current ¹⁾	I_0	A	0.9	0.45	±50%
Rated power output ¹⁾	P_{2N}	W	72.6	94.2	
Rated power input ¹⁾	P_{IN}	W	94.8	122.4	
Rated efficiency ¹⁾	η_N	%	76.6	77	
Maximum power output ²⁾³⁾	P_{2max}	W	201.6	227	
Maximum continuous torque ²⁾³⁾	M_{max}	Ncm	22	30	
Maximum continuous current ²⁾³⁾	I_{max}	A	7.9	5.1	
Maximum speed ¹⁾³⁾	n_{max}	min ⁻¹	8000	8000	
Anhaltmoment ¹⁾	M_H	Ncm	220	255	
Stall torque ¹⁾	I_H	A	70.9	40	
Demagnetization current	I_E	A	55.7	37.2	
Connecting resistance	R	Ω	0.17	0.6	
Armature resistance ¹⁾	R_A	Ω	0.1	0.42	±5%
Armature inductance [1 kHz] ¹⁾	L_A	mH	0.2	0.96	
Rise of speed-characteristic ¹⁾	k_D	Ncm/min	- 15.9	- 13.3	
Torque constant ¹⁾	k_M	Ncm/A	3.1	6.5	
Voltage constant ¹⁾	k_E	V/10 ³ min ⁻¹	3.4	7	
Friction torque ¹⁾	M_R	Ncm	- 2.8	- 2.9	
Mechanical time constant ¹⁾	T_M	ms	11.3	11.18	
Electrical time constant ¹⁾	T_e	ms	1.2	1.6	
Rotor inertia	J_R	gcm ²	1209	1209	
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	110	110	
Permissible radial shaft loads ³⁾	F_{radial}	N	300	300	
Protection class DIN VDE 0530			IP40		
Duty cycle DIN VDE 0530			S1		
Insulation class DIN VDE 0530			E		
Lifetime at rated torque _N			≥ 3000 h		
Ambient temperature			-30°C to +40°C		
Bearing			2 ball 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

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