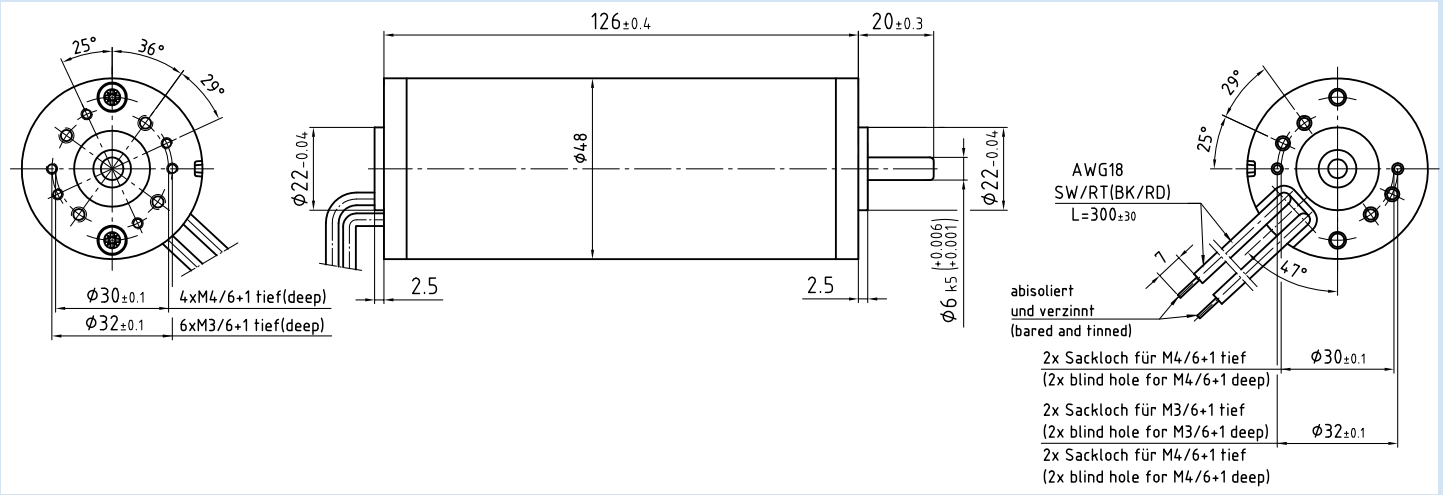
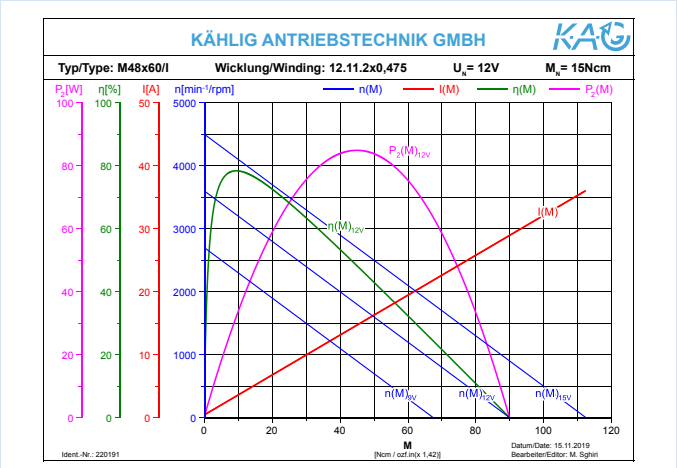
DC-Motor M48x60/I
Id.-Nr. 220191 (12V) 211333 (24V)

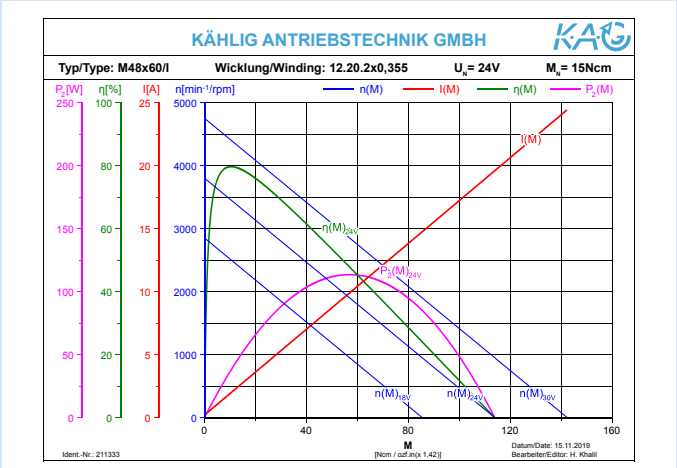
excellent drives

- Brushed DC motor with permanent magnets
- Ball earings
- 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





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DC-Motor M48x60/I
Id.-Nr. 220191 (12V) 211333 (24V)

KAG excellent drives

Performance

	Sign	Unit	Value 12V	Value 24V	Tolerances
Rated Voltage	U_N	V	12	24	
Rated torque [1]	M_N	Ncm	15	15	
Rated speed [1]	n_N	min^{-1}	3000	3300	±10%
Rated current [1]	I_N	A	5,15	2,75	±20%
No load speed [1]	n_0	min^{-1}	3600	3800	±15%
No load current [1]	I_0	A	0,4	0,2	±50%
Rated power output [1]	P_{2N}	W	47,1	51,8	
Rated power input [1]	P_{1N}	W	61,8	66	
Rated efficiency [1]	η_N	%	76,3	78,5	
Maximum power output [2)3)]	P_{2max}	W	84,8	113,4	
Maximum continous torque [2)3)]	M_{max}	Ncm	15	15	
Maximum continous current [2)3)]	I_{max}	A	5,15	2,75	
Maximum speed [1)3)]	n_{max}	min^{-1}	10000	10000	
Anhaltemoment [1]	M_H	Ncm	90	114	
Stall torque [1]	I_H	A	28,9	19,6	
Demagnetization current	I_E	A	27,8	15,3	
Connecting resistance	R	Ω	0,42	1,23	
Armature resistance [1]	R_A	Ω	0,30	1,03	±5%
Armature inductance [1 kHz] [1]	L_A	mH	0,39	1,42	
Rise of speed-characteristic [1]	k_D	Ncm/min	- 40	- 33,3	
Torque constant [1]	k_M	Ncm/A	3,2	5,9	
Voltage constant [1]	k_E	$V/10^3 min^{-1}$	3,3	6,3	
Friction torque [1]	M_R	Ncm	- 1,3	- 1,2	
Mechanical time constant [1]	T_M	ms	11,3	10,8	
Electrical time constant [1]	T_e	ms	0,9	1,2	
Rotor inertia	J_R	gcm^2	383	383	
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	40	40	
Permissible radial shaft loads [3)]	F_{radial}	N	100	100	
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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