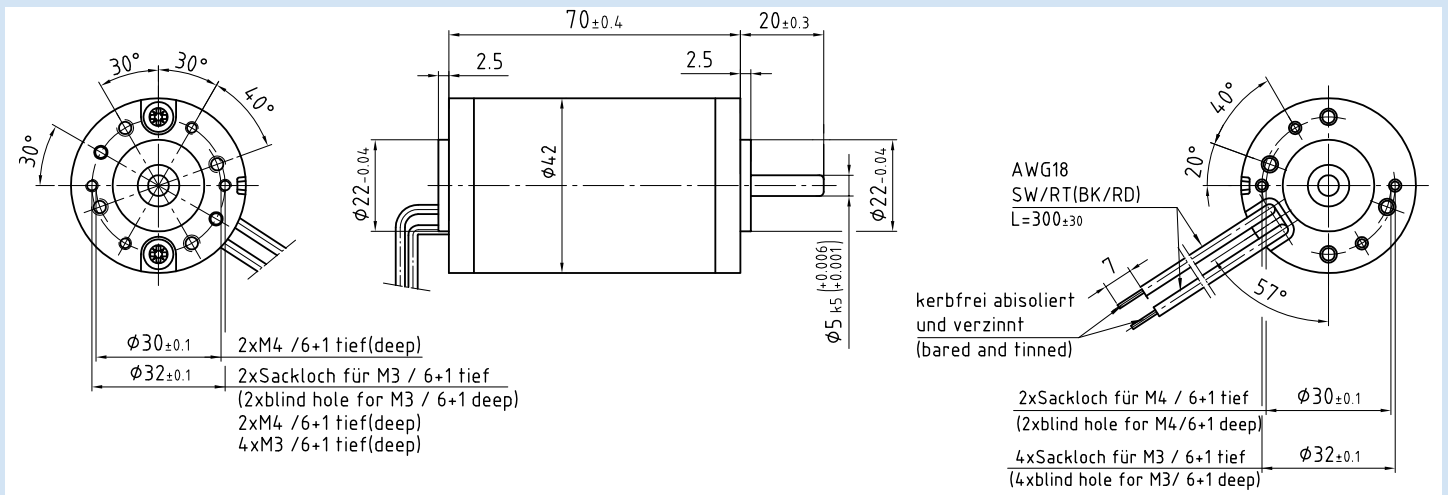
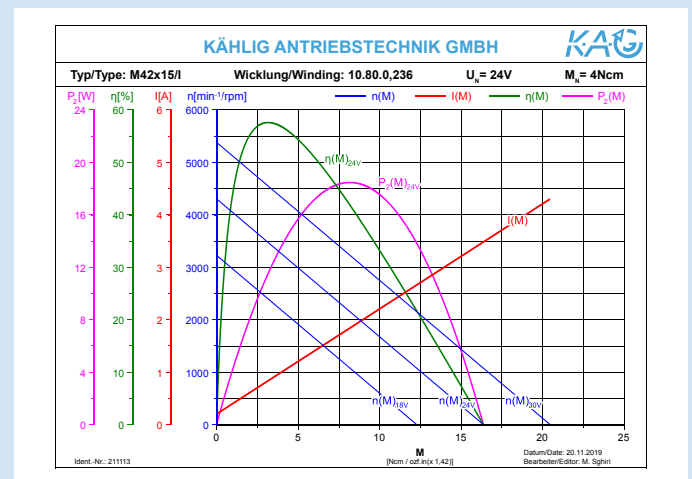
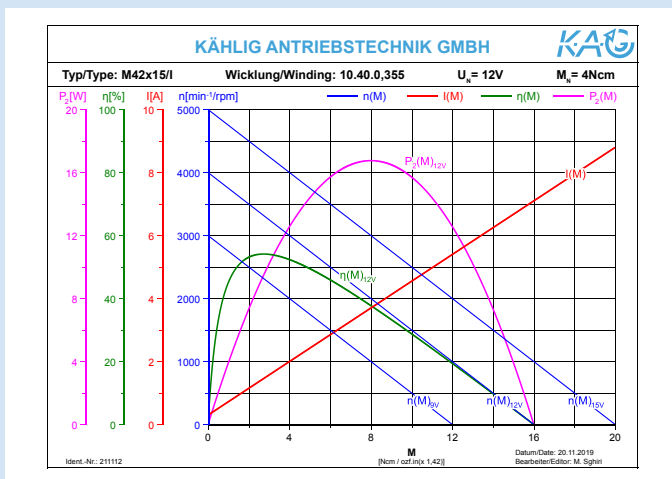


# DC-Motor M42x15/I Id.-Nr. 21112 (12V) 21113 (24V)

- 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 M42x15/I

## Id.-Nr. 21112 (12V) 21113 (24V)

### Performance

	Sign	Unit	Value 12V	Value 24V	Tolerances
Rated Voltage	$U_N$	V	12	24	
Rated torque <sup>1)</sup>	$M_N$	Ncm	4	4	
Rated speed <sup>1)</sup>	$n_N$	min <sup>-1</sup>	3000	3250	±10%
Rated current <sup>1)</sup>	$I_N$	A	2	1	±20%
No load speed <sup>1)</sup>	$n_0$	min <sup>-1</sup>	4000	4300	±15%
No load current <sup>1)</sup>	$I_0$	A	0.3	0.2	±50%
Rated power output <sup>1)</sup>	$P_{2N}$	W	12.6	13.6	
Rated power input <sup>1)</sup>	$P_{IN}$	W	24	24	
Rated efficiency <sup>1)</sup>	$\eta_N$	%	52.4	56.7	
Maximum power output <sup>2)3)</sup>	$P_{2max}$	W	16.8	18.4	
Maximum continuous torque <sup>2)3)</sup>	$M_{max}$	Ncm	4	4	
Maximum continuous current <sup>2)3)</sup>	$I_{max}$	A	2	1	
Maximum speed <sup>1)3)</sup>	$n_{max}$	min <sup>-1</sup>	10000	10000	
Anhaltmoment <sup>1)</sup>	$M_H$	Ncm	16	16.4	
Stall torque <sup>1)</sup>	$I_H$	A	7.1	3.5	
Demagnetization current	$I_E$	A	8.5	4.2	
Connecting resistance	R	Ω	1.69	6.9	
Armature resistance <sup>1)</sup>	$R_A$	Ω	1.5	6.7	±5%
Armature inductance [1 kHz] <sup>1)</sup>	$L_A$	mH	1.63	5.4	
Rise of speed-characteristic <sup>1)</sup>	$k_D$	Ncm/min	- 250	- 262.5	
Torque constant <sup>1)</sup>	$k_M$	Ncm/A	2.4	5	
Voltage constant <sup>1)</sup>	$k_E$	V/10 <sup>3</sup> min <sup>-1</sup>	2.87	5.3	
Friction torque <sup>1)</sup>	$M_R$	Ncm	- 0.7	- 1	
Mechanical time constant <sup>1)</sup>	$T_M$	ms	10.97	14.2	
Electrical time constant <sup>1)</sup>	$T_e$	ms	0.96	0.8	
Rotor inertia	$J_R$	gcm <sup>2</sup>	60	60	
Maximum case temperature <sup>2)</sup>	$\vartheta_G$	°C	80	80	
Starting voltage <sup>1)</sup>	$U_A$	V	2	2	
Permissible axial shaft loads <sup>3)</sup>	$F_{axial}$	N	40	40	
Permissible radial shaft loads <sup>3)</sup>	$F_{radial}$	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 <sub>N</sub>			≥ 3000 h		
Ambient temperature			-30°C to +40°C		
Bearing			2 ball bearings		
Interference suppression			feasible		

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

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