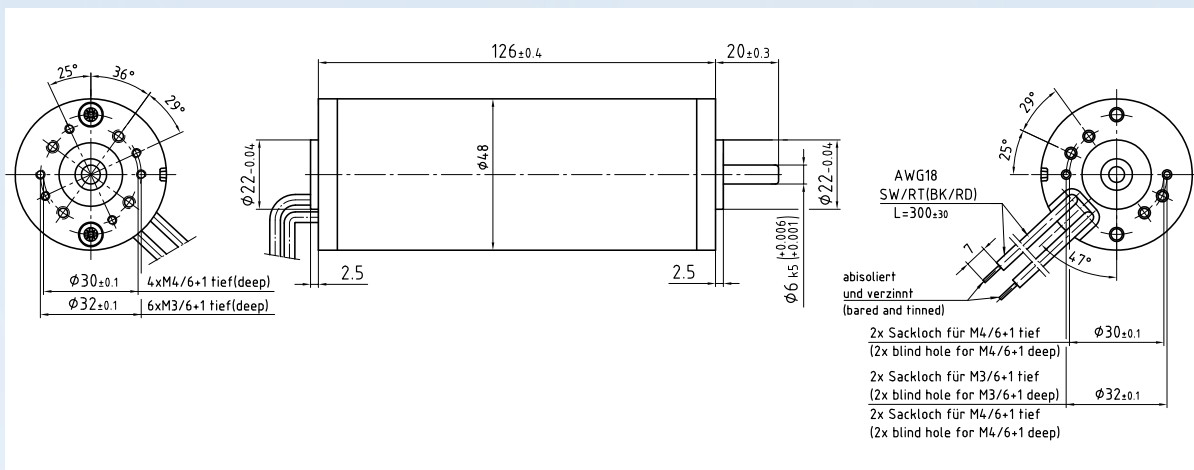


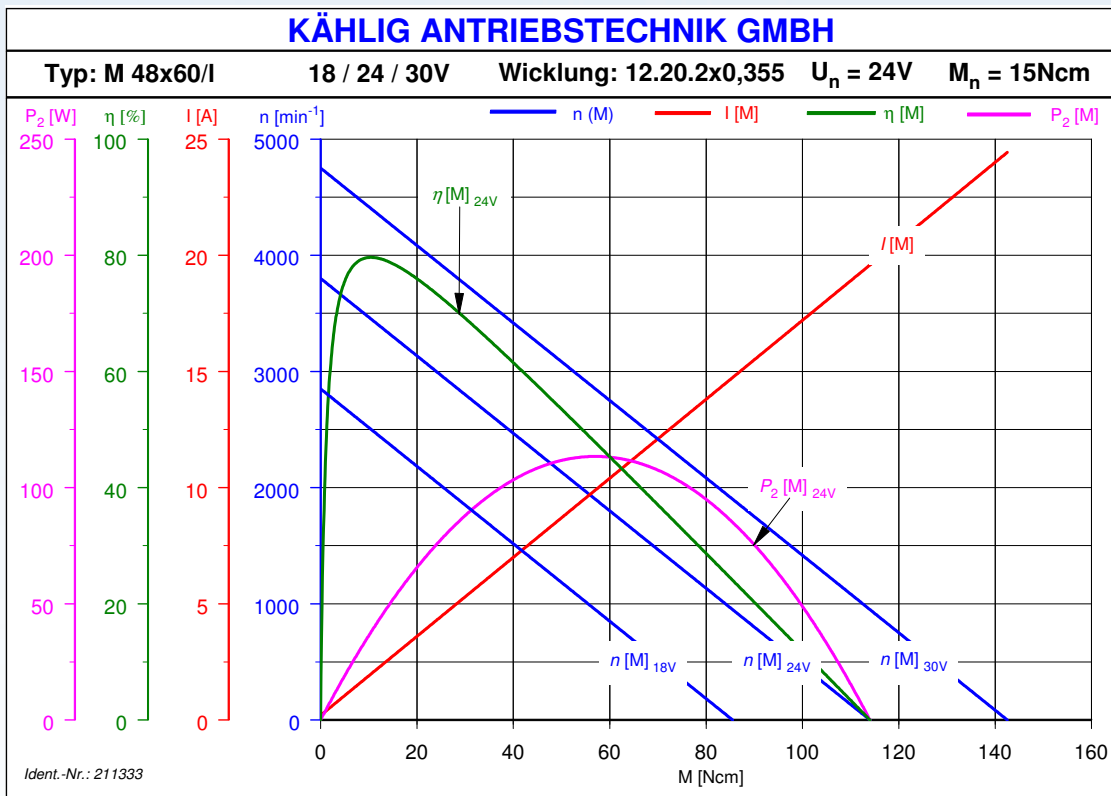
DC-Motor M48x60/I (24V)

Ident-Nr. 211333

- Brushed DC motor with permanent magnet
- Ball bearings
- Lead wires
- Closed zinc-plated housing with zinc-die-cast bearing flanges
- Direction of rotation CW / CCW
- Power output in rated operation: 51.8 Watt
- Multiple combination possibilities with gears, encoders and brakes



Application on request



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Performance

	Sign	Unit	Value	Tolerances
Rated voltage	U_N	V	24	
Rated torque ¹⁾	M_N	Ncm	15	
Rated speed ¹⁾	n_N	min ⁻¹	3300	±10%
Rated current ¹⁾	I_N	A	2.75	±20%
No load speed ¹⁾	n_o	min ⁻¹	3800	±15%
No load current ¹⁾	I_o	A	0.2	±50%
Rated power output ¹⁾	P_{2N}	W	51.8	
Rated power input ¹⁾	P_{1N}	W	66.0	
Rated efficiency ¹⁾	η_N	%	78.5	
Maximum power output ²⁾³⁾	P_{2max}	W	113.4	
Maximum continuous torque ²⁾³⁾	M_{max}	Ncm	15	
Maximum continuous current ²⁾³⁾	I_{max}	A	2.75	
Maximum speed ¹⁾³⁾	n_{max}	min ⁻¹	10000	
Stall torque ¹⁾	M_H	Ncm	114	
Stall current ¹⁾	I_H	A	19.6	
Demagnetization current	I_E	A	25.5	
Connecting resistance ¹⁾	R	Ω	1.23	
Armature resistance ¹⁾	R_A	Ω	1.03	±5%
Armature inductance [1 kHz] ¹⁾	L_A	mH	1.42	
Rise of speed-characteristic ¹⁾	k_D	min ⁻¹ /Ncm	33.3	
Torque constant ¹⁾	k_M	Ncm/A	5.9	
Voltage constant ¹⁾	k_E	V/10 ³ min ⁻¹	6.3	
Friction torque ¹⁾	M_R	Ncm	1.2	
Mechanical time constant ¹⁾	T_M	ms	12.0	
Electrical time constant ¹⁾	T_e	ms	1.2	
Rotor inertia	J_R	gcm ²	383	
Maximum case temperature ²⁾	ϑ_G	°C	80	
Starting voltage ¹⁾	U_A	V	2	
Permissible axial shaft loads ³⁾	F_{axial}	N	40	
Permissible radial shaft loads ³⁾	F_{radial}	N	100	
Protection class DIN VDE 0530			IP 40	
Duty cycle DIN VDE 0530			S1	
Insulation class DIN VDE 0530			E	
Lifetime at rated torque [h] ¹⁾			3000	
Ambient temperature			-30°C to +40°C	
Bearing			2 ball bearings	
Interference suppression			optional	

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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