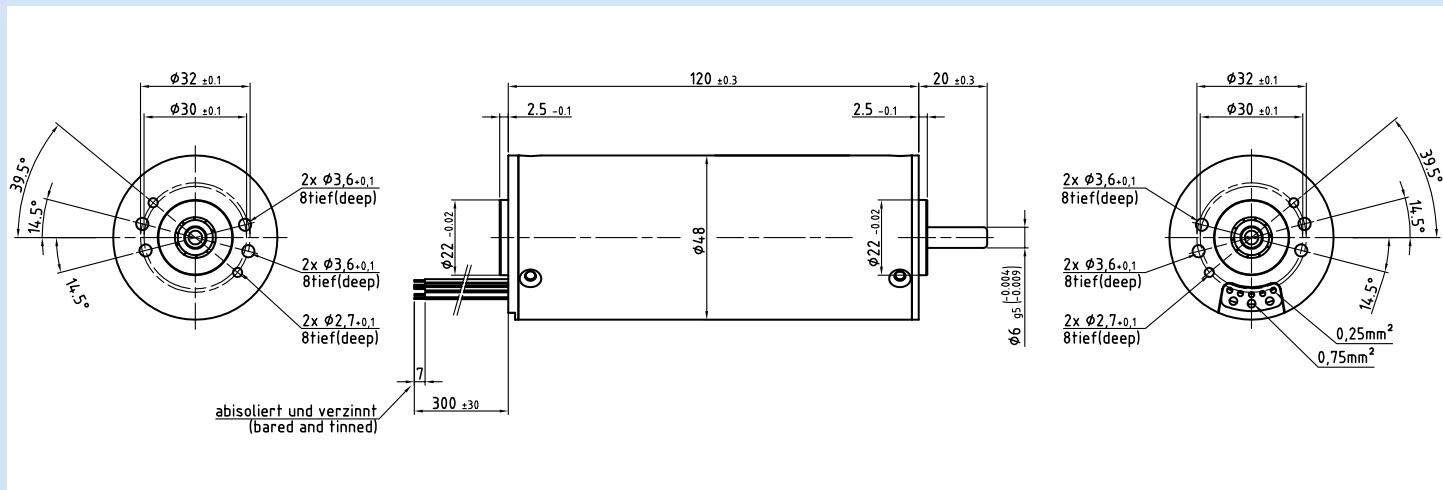


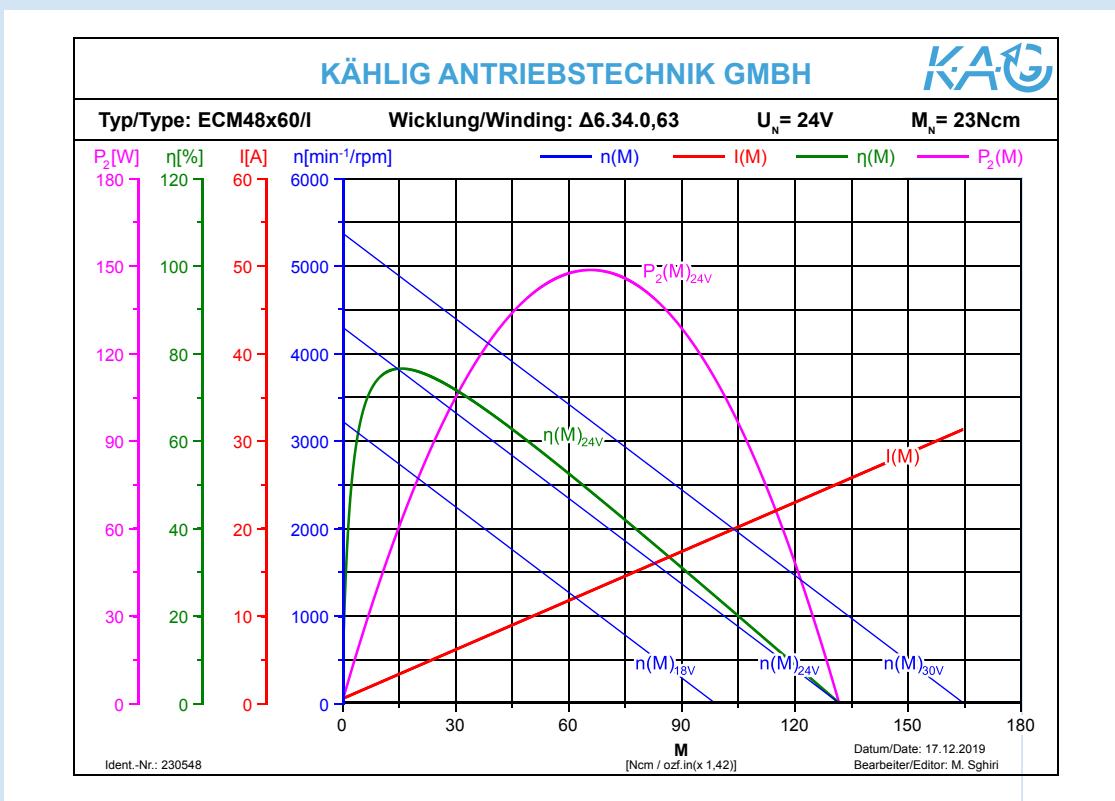
EC-Motor ECM48x60

Id.-Nr. 230548 (24V)

- 4-pole rotor with plastic-bonded magnets NeFeB
- Threefold winding connected in delta
- 3 internal Hall sensors for rotor position detection offset by 120°
- Lead wires (standard), other connections on request
- Closed aluminium housing with aluminium 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

EC-Motor ECM48x60

Id.-Nr. 230548 (24V)

Performence

	Sign	Unit	Value	Tolerance
Rated voltage	U_N	V	24	
Rated torque ¹⁾	M_N	Ncm	23	
Rated speed ¹⁾	n_N	min ⁻¹	3550	±10%
Rated current ¹⁾	I_N	A	4.76	±20%
No load speed ¹⁾	n_0	min ⁻¹	4300	±15%
No load current ¹⁾	I_0	A	0.46	±50%
Rated power output ¹⁾	P_{2N}	W	85.5	
Rated power input ¹⁾	P_{IN}	W	114.2	
Rated efficiency ¹⁾	η_N	%	74.8	
Maximum power output ²⁾⁽³⁾	P_{2max}	W	148.4	
Maximum continous torque ²⁾⁽³⁾	M_{max}	Ncm	23	
Maximum continous current ²⁾⁽³⁾	I_{max}	A	4.76	
Maximum speed ¹⁾⁽³⁾	n_{max}	min ⁻¹	12000	
Stall torque ¹⁾	M_H	Ncm	131.9	
Stall current ¹⁾	I_H	A	25.1	
Stator resistance ¹⁾	R_A	Ω	0.59	±5%
Stator inductance[1 kHz] ¹⁾	L_A	mH	0.57	
Rise of speed-characteristics ¹⁾	k_D	Ncm/min ⁻¹	-32.6	
Torque constant ¹⁾	k_M	Ncm/A	5.3	
Voltage constant ¹⁾	k_E	V/10 ³ min ⁻¹	5.5	
Friction torque ¹⁾	M_R	Ncm	-2.5	
Mechanical time constant ¹⁾	T_M	ms	3.24	
Electrical time constant ¹⁾	T_e	ms	0.97	
Rotor inertia	J_R	gcm ²	156	
Maximum case temperature ²	ϑ_G	°C	100	
Starting voltage ¹⁾	U_A	V	20	
Permissible axial shaft loads ³⁾	F_{axial}	N	40	
Permissible radial shaft loads ³⁾	F_{radial}	N	100	
Protection class DIN VDE 0530			IP50	
Duty cycle DIN VDE 0530			S1	
Insulation class DIN VDE 0530			F	
Lifetime at rated torque			≥ 20000 h	
Ambient temperature			-30°C to +40°C	
Bearing			2 ball bearings	

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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