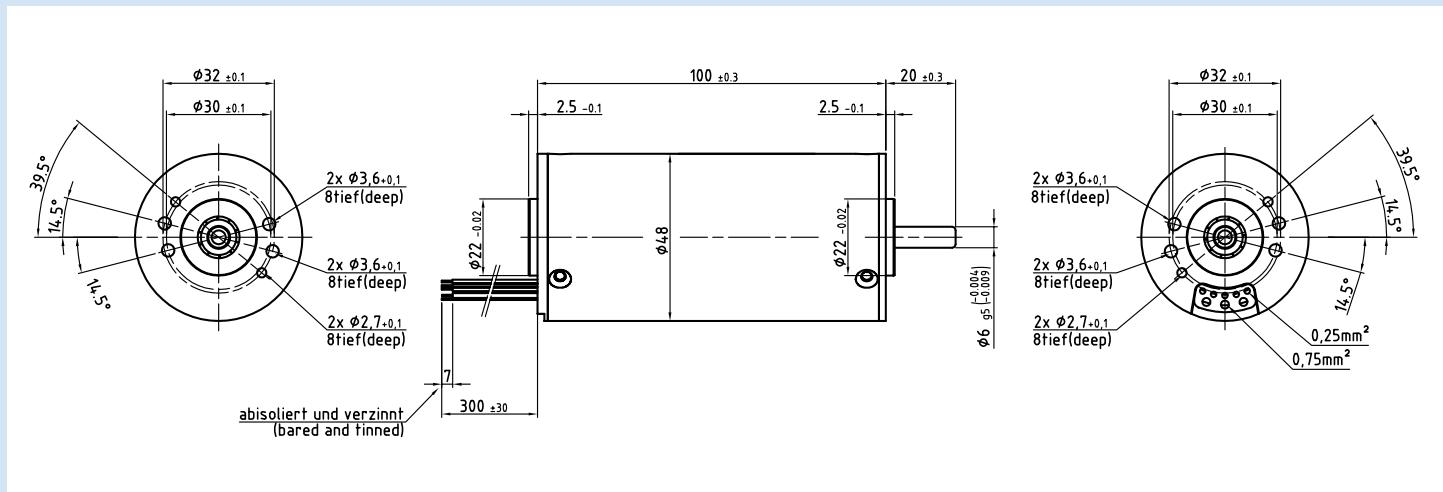


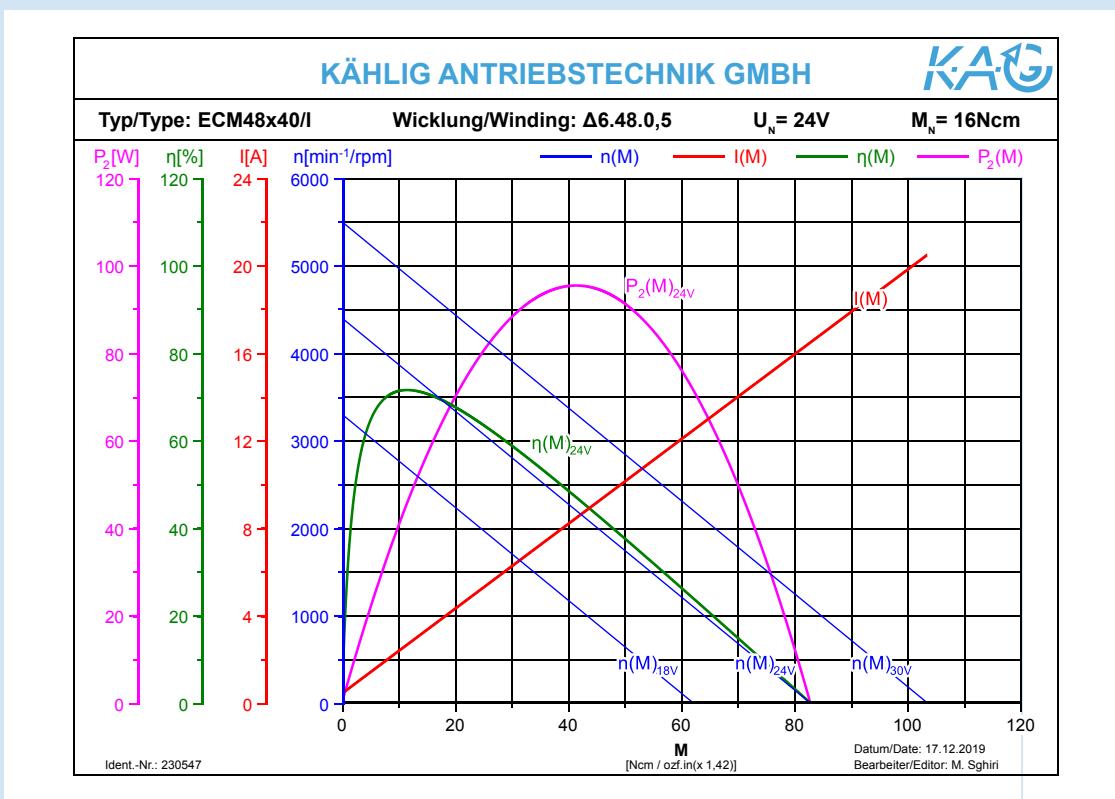
# EC-Motor ECM48x40

Id.-Nr. 230547 (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



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# EC-Motor ECM48x40

## Id.-Nr. 230547 (24V)

### Performence

	Sign	Unit	Value	Tolerance
Rated voltage	$U_N$	V	24	
Rated torque <sup>1)</sup>	$M_N$	Ncm	16	
Rated speed <sup>1)</sup>	$n_N$	min <sup>-1</sup>	3550	±10%
Rated current <sup>1)</sup>	$I_N$	A	3,53	±20%
No load speed <sup>1)</sup>	$n_0$	min <sup>-1</sup>	4400	±15%
No load current <sup>1)</sup>	$I_0$	A	0,43	±50%
Rated power output <sup>1)</sup>	$P_{2N}$	W	59,48	
Rated power input <sup>1)</sup>	$P_{IN}$	W	84,72	
Rated efficiency <sup>1)</sup>	$\eta_N$	%	70,2	
Maximum power output <sup>2)(3)</sup>	$P_{2max}$	W	95,41	
Maximum continous torque <sup>2)(3)</sup>	$M_{max}$	Ncm	16	
Maximum continous current <sup>2)(3)</sup>	$I_{max}$	A	3,53	
Maximum speed <sup>1)(3)</sup>	$n_{max}$	min <sup>-1</sup>	12000	
Stall torque <sup>1)</sup>	$M_H$	Ncm	82,82	
Stall current <sup>1)</sup>	$I_H$	A	16,48	
Stator resistance <sup>1)</sup>	$R_A$	Ω	0,97	±5%
Stator inductance[1 kHz] <sup>1)</sup>	$L_A$	mH	0,79	
Rise of speed-characteristics <sup>1)</sup>	$k_D$	Ncm/min <sup>-1</sup>	-53,125	
Torque constant <sup>1)</sup>	$k_M$	Ncm/A	5,161	
Voltage constant <sup>1)</sup>	$k_E$	V/10 <sup>3</sup> min <sup>-1</sup>	5,45	
Friction torque <sup>1)</sup>	$M_R$	Ncm	-2,22	
Mechanical time constant <sup>1)</sup>	$T_M$	ms	3,72	
Electrical time constant <sup>1)</sup>	$T_e$	ms	0,54	
Rotor inertia	$J_R$	gcm <sup>2</sup>	104	
Maximum case temperature <sup>2</sup>	$\vartheta_G$	°C	100	
Starting voltage <sup>1)</sup>	$U_A$	V	20	
Permissible axial shaft loads <sup>3)</sup>	$F_{axial}$	N	40	
Permissible radial shaft loads <sup>3)</sup>	$F_{radial}$	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)  $\vartheta_w$  Winding temperature ≈ 20°C    2)  $\Delta\vartheta_w$  zul. = allowable

3) The operating at maximum levels reduces the lifespan

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