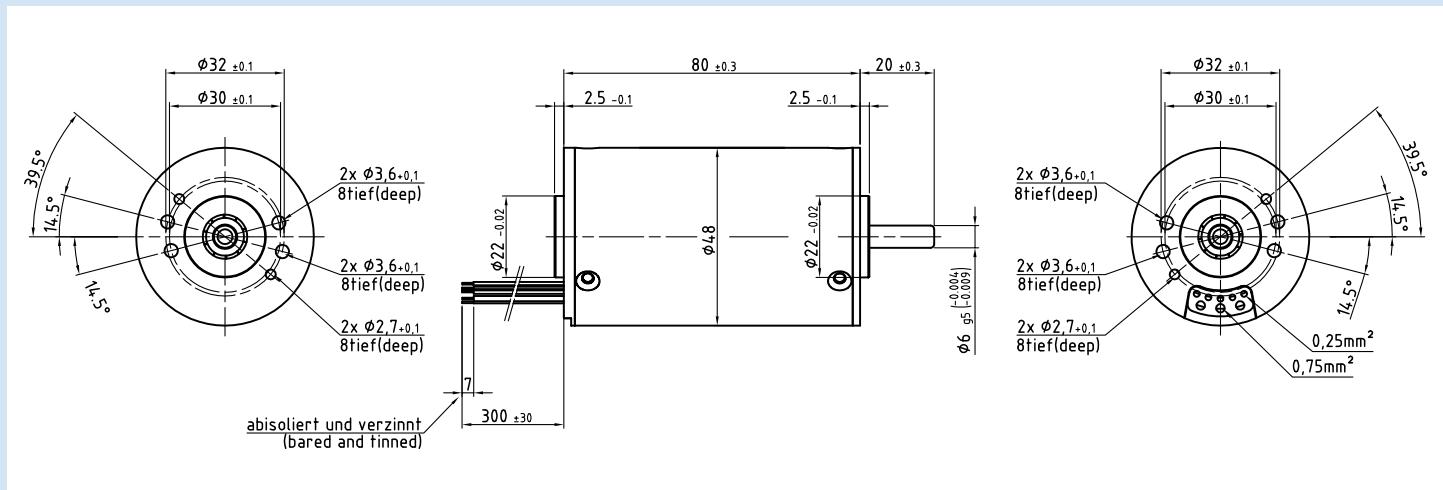


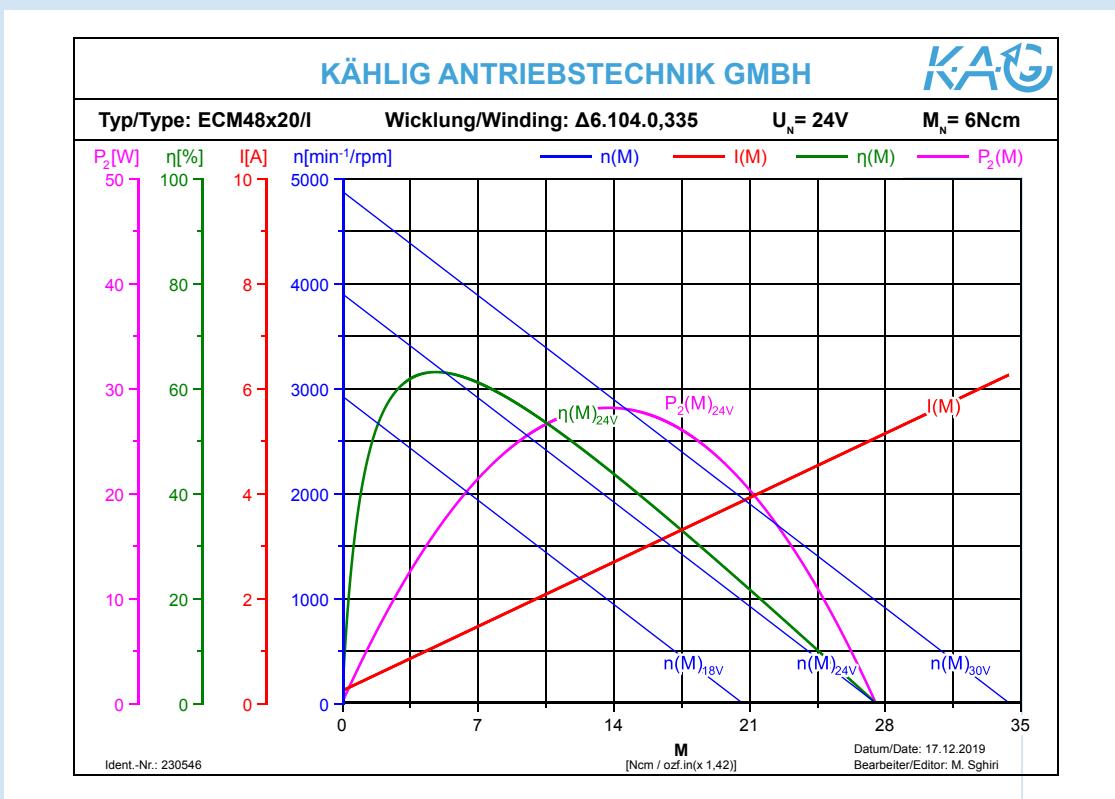
# EC-Motor ECM48x20

Id.-Nr. 230546 (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 ECM48x20

## Id.-Nr. 230546 (24V)

### Performence

	Sign	Unit	Value	Tolerance
Rated voltage	$U_N$	V	24	
Rated torque <sup>1)</sup>	$M_N$	Ncm	6	
Rated speed <sup>1)</sup>	$n_N$	min <sup>-1</sup>	3050	±10%
Rated current <sup>1)</sup>	$I_N$	A	1,28	±20%
No load speed <sup>1)</sup>	$n_0$	min <sup>-1</sup>	3900	±15%
No load current <sup>1)</sup>	$I_0$	A	0,23	±50%
Rated power output <sup>1)</sup>	$P_{2N}$	W	19,2	
Rated power input <sup>1)</sup>	$P_{1N}$	W	30,7	
Rated efficiency <sup>1)</sup>	$\eta_N$	%	62,4	
Maximum power output <sup>2)(3)</sup>	$P_{2max}$	W	28,1	
Maximum continous torque <sup>2)(3)</sup>	$M_{max}$	Ncm	6	
Maximum continous current <sup>2)(3)</sup>	$I_{max}$	A	1028	
Maximum speed <sup>1)(3)</sup>	$n_{max}$	min <sup>-1</sup>	12000	
Stall torque <sup>1)</sup>	$M_H$	Ncm	27,5	
Stall current <sup>1)</sup>	$I_H$	A	5	
Stator resistance <sup>1)</sup>	$R_A$	Ω	3,45	±5%
Stator inductance[1 kHz] <sup>1)</sup>	$L_A$	mH	2,17	
Rise of speed-characteristics <sup>1)</sup>	$k_D$	Ncm/min <sup>-1</sup>	-141,7	
Torque constant <sup>1)</sup>	$k_M$	Ncm/A	5,7	
Voltage constant <sup>1)</sup>	$k_E$	V/10 <sup>3</sup> min <sup>-1</sup>	5,9	
Friction torque <sup>1)</sup>	$M_R$	Ncm	-1,3	
Mechanical time constant <sup>1)</sup>	$T_M$	ms	5,2	
Electrical time constant <sup>1)</sup>	$T_e$	ms	0,63	
Rotor inertia	$J_R$	gcm <sup>2</sup>	52	
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)  $\Delta\vartheta_w$  allowable = 100K

3) The operating at maximum levels reduces the lifespan

Stand: 23. Juli 2020 – changes reserved