excellent drives

Here you can see the performance overview and information on the permissible continuous output power of the KAG-motors of our standard motors, designed for the maximum performance in continuous operation S1.

Output power: $P_{2N} = M_N * 2\pi * \frac{n_N}{60}$

Input power: $P_{1N} = U_N * I_N$

Efficiency: $\eta_n = \frac{P_{2N}}{P_{1N}}$

Using the formula “effective torque”, you can calculate to what extent you can overload the motor in short-time intermittent operation:

$$M_{eff} = \sqrt{\sum \frac{M_N^2 * t_n}{\sum t_n}} \qquad (for\ n = 1, 2, 3, \dots etc.)$$

$$M_{eff} \leq M_N$$

Example:

For starting up, a drive is operated for 500 msec with the 2-fold nominal torque, afterwards for driving, for 2 sec with the 0.5-fold nominal torque and for braking, for 500 msec with the 1.8-fold nominal torque. The break is 1 sec.

The nominal torque of the selected drive is Mn = 30 Ncm.

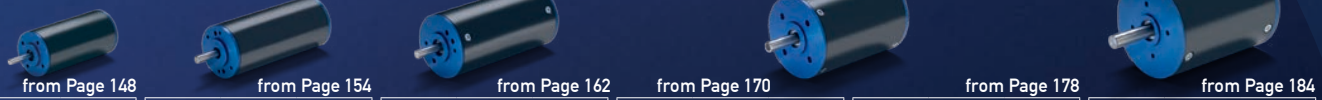
$$M_{eff} = \sqrt{\frac{M_1^2 * t_1 + M_2^2 * t_2 + M_3^2 * t_3 + M_4^2 * t_4}{t_1 + t_2 + t_3 + t_4}} = \sqrt{\frac{60^2 * 0{,}5 + 15^2 * 2 + 54^2 * 0{,}5 + 0^2 * 1}{0{,}5 + 2 + 0{,}5 + 1}}$$

$$= \sqrt{\frac{1800 + 450 + 1250 + 0}{4}} = \sqrt{875} = \underline{29{,}5\ Ncm}$$

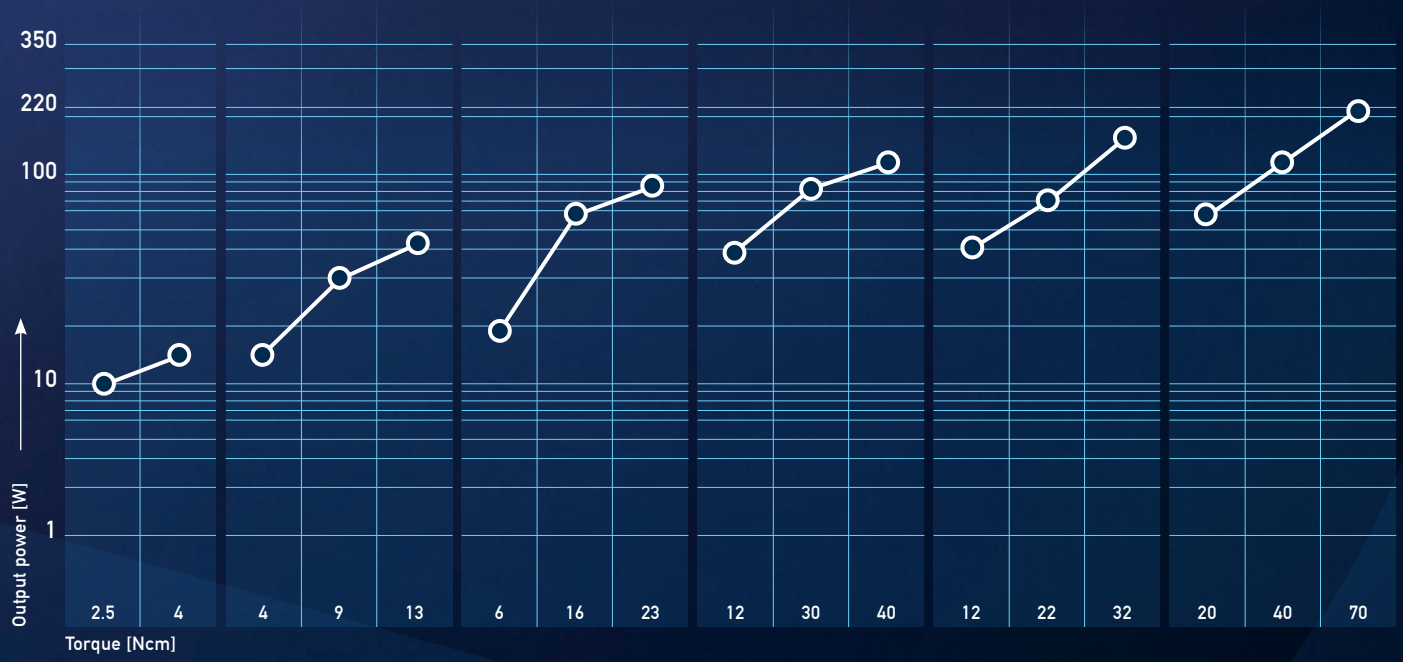
$$M_{eff} \leq M_N \quad \rightarrow \quad 29{,}5Ncm \leq 30Ncm$$

The condition that M_{eff} is equal or smaller than the nominal torque is fulfilled. Thus, the drive can be used.

Performance overview DC- and EC-motors



ECM35		ECM42			ECM48			ECM63			ECMa63			ECM75		
from Page 148		from Page 154			from Page 162			from Page 170			from Page 178			from Page 184		
x 20	x 30	x 15	x 30	x 45	x 20	x 40	x 60	x 20	x 40	x 60	x 20	x 40	x 60	x 20	x 40	x 60



M28			M36			M42					M48			M63			M80	
from Page 60			from Page 70			from Page 84					from Page 106			from Page 120			from Page 134	
x 10	x 20	x 40	x 13	x 20	x 30	x 10	x 15	x 20	x 30	x 40	x 25	x 50	x 60	x 25	x 40	x 60	x 40	x 80