

Voltage and frequency

Motors are normally wound for a rated supply of 380-415Volts and a frequency of 50Hz. However, motors for any standard supply from 110V to 660V at frequencies of 50Hz and 60Hz may be supplied on request.

Motors will operate satisfactorily with a voltage band of $\pm 6\%$ of the rated voltage. In case of continuous operation at the extreme voltage limits specified above, the temperature rise limits permitted for various insulation classes may be exceeded by 10K maximum.

Motors wound for 50Hz may generally be connected to a 60Hz supply. In this case the speed will increase by 20% with reference to rated voltages at 50Hz, the approximate multipliers to obtain the new performance values at 60Hz are given in the following table.

50Hz	60Hz						
Rated voltage V	Supply voltage V	New performance data at full load					
		Rated output power P_N kW	Full-load speed n_N min^{-1}	Rated current I_N A	Full-load torque M_N	Starting current I_S/I_N	Starting torque M_A/M_N
230 Eurovolt (220-240)	220	1	1.2	1	0.83	0.83	0.72
	240					0.91	0.78
	255	1.1			0.92	0.96	0.90
	265	1.15			0.96	1	0.93
	277	1.2			1	1.03	0.98
400 Eurovolt (380-415)	380	1	1.2	1	0.83	0.83	0.72
	415					0.91	0.78
	440	1.1			0.92	0.96	0.90
	460	1.15			0.96	1	0.93
	480	1.2			1	1.06	0.98

Environmental conditions

If our standard range motors are operated at an ambient temperature beyond 40°C and altitude over 1000m above sea level, their rated outputs will change at the ratios given below.

Ambient temp	°C	≤30	30..40	45	50	55	60
Rated output	%	107	100	95	90	85	80

Altitude	M	1000	2000	3000	4000
Rated output	%	100	95	90	80

If ambient temperature and altitude both vary, multiply the rated output with its respective factors to obtain the new permitted output. If the output reduction exceeds 15%, please consult us as the operating characteristics of the motor will become unfavourable due to its utilization factor.

At altitudes over 1000m, the rated output of a motor will remain unchanged if the ambient temperature of 35°C drops by 1.0°C for insulation class F, 1.25°C for insulation class H for every 100m increment of altitude.