EMRAX 188 Technical Data Table

Type / Technical data	EMRAX 188 High Voltage			EMRAX 188 Medium Voltage			EMRAX 188 Low Voltage		
Air cooled = AC Liquid cooled = LC Combined cooled = Air + Liquid cooled = CC	**AC**	**LC**	**CC**	**AC**	**LC**	**CC**	**AC**	**LC**	**CC**
Ingress protection	IP21	IP65	IP21	IP21	IP65	IP21	IP21	IP65	IP21
Cooling medium specification (Air Flow = AF; Inlet Water/glycol Flow = WF; Ambient Air = AA) If inlet WF temperature and/or AA temperature are lower, then continuous power is higher.	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C	AF=20m/s; AA=25°C	WF=8l/min at 50°C; AA=25°C	WF=8l/min at 50°C; AA=25°C
Weight [kg]	6,8	7,0	7,0	6,8	7,0	7,0	6,8	7,0	7,0
Diameter ø / width [mm]	188 / 77								
Maximal battery voltage [Vdc] and full load/no load RPM	400 Vdc (6400/7600 RPM)			270 Vdc (6750/7830 RPM)			100 Vdc (7000/7800 RPM)		
Peak motor power at max RPM (few min at cold start / few seconds at hot start) [kW]	**70**								
Continuous motor power (at 3000-6000 RPM) depends on the motor RPM [kW]	**15 - 28**	**15 - 30**	**17 - 35**	**15 - 28**	**15 - 30**	**17 - 35**	**15 - 28**	**15 - 30**	**17 - 35**
Maximal rotation speed [RPM]	**7000 (8500 peak for few seconds)**								
Maximal motor current (for 2 min if cooled as described in Manual) [Arms]	200			300			800		
Continuous motor current [Arms]	100			150			400		
Maximal peak motor torque [Nm]	**100**								
Continuous motor torque [Nm]	**50**								
Torque / motor current [Nm/1Aph rms]	0,60			0,39			0,15		
Maximal temperature of the copper windings in the stator and max. temperature of the magnets [°C]	120								
Motor efficiency [%]	92-98%								
Internal phase resistance at 25 °C [mΩ]	/			/			/		
Input phase wire cross-section [mm²]	10,2			15,2			38		
Wire connection	star								
Induction Ld/Lq [µH]	/			/			/		
Controller / motor signal	sine wave								
AC voltage between two phases [Vrms/1RPM]	0,0384			0,0252			0,0055		
Specific idle speed (no load RPM) [RPM/1Vdc]	19			29			78		
Specific load speed (depends on the controller settings) [RPM/1Vdc]	16 – 19			25 – 29			70 – 78		
Magnetic field weakening (for higher RPM at the same power and lower torque) [%]	up to 100								
Magnetic flux – axial [Vs]	/			/			/		
Temperature sensor on the stator windings	kty 81/210								
Number of pole pairs	10								
Rotor Inertia (mass dia=160mm, m=3,0kg) [kg*cm²]	/								
Bearings (front:back) - SKF/FAG	6204:6204 (for radial forces) or 6204:7204 (for axial-radial forces; for pull mode; focusing on very high axial load, e.g. for air propeller) or 6204:3204 (for axial-radial forces; for pull-push mode, α=25°); other bearings are possible (exceptionally)								