

EMRAX 207 Technical Data Table

| Type | EMRAX 207 High Voltage | | | EMRAX 207 Medium Voltage | | | EMRAX 207 Low Voltage | | |
|--|--|---|---|-------------------------------|---|---|-------------------------------|---|---|
| Technical data | | | | | | | | | |
| Air cooling = AC Liquid cooling = LC Combined cooling = Air + Liquid cooling = 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; Water Flow = WF – if inlet water temperature and/or ambient temperature are lower, then continuous power is higher) | AF speed 25 m/s; 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C | AF speed 25 m/s; 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C | AF speed 25 m/s; 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C | inlet WF 8 l/min - 40°C; ambient air 25°C |
| Weight [kg] | 9,1 | 9,4 | 9,3 | 9,1 | 9,4 | 9,3 | 9,1 | 9,4 | 9,3 |
| Diameter ϕ / width [mm] | 207 / 85 | | | | | | | | |
| Battery voltage range [Vdc] | 500 (*580 – to get 7000 RPMp) | | | 300 (*350 – to get 7000 RPMp) | | | 115 (*135 – to get 7000 RPMp) | | |
| Peak motor power (few min at cold start / few seconds at hot start) [kW] | 80 | | | | | | | | |
| Continuous motor power (depends on the motor RPM 3000 - 5000) [kW] | 20 - 32 | 20 - 32 | 25 - 40 | 20 - 32 | 20 - 32 | 25 - 40 | 20 - 32 | 20 - 32 | 25 - 40 |
| Maximal rotation speed [RPM] | 6000 (*7000 peak) | | | | | | | | |
| Maximal motor current (for 2 min if cooled as described in Manual for EMRAX motors) [Arms] | 200 | | | 320 | | | 800 | | |
| Continuous motor current [Arms] | 100 | | | 160 | | | 400 | | |
| Maximal peak motor torque [Nm] | 160 | | | | | | | | |
| Continuous motor torque [Nm] | 80 | | | | | | | | |
| Torque / motor current [Nm/1Aph rms] | 0,83 | | | 0,54 | | | 0,20 | | |
| Maximal temperature of the copper windings in the stator and also max. temp. of the magnets [°C] | 120 | | | | | | | | |
| Motor efficiency [%] | 93-98% | | | | | | | | |
| Internal phase resistance at 25 °C [m Ω] | 12,0 | | | 5,7 | | | 0,8 | | |
| Input phase wire cross-section [mm ²] | 10,2 | | | 15,2 | | | 38 | | |
| Induction Ld/Lq [μ H] | 125/130 | | | 52/56 | | | 7,2/7,5 | | |
| Controller / motor signal | sine wave | | | | | | | | |
| Specific idle speed (no load RPM) [RPM/1Vdc] | 15 | | | 22 | | | 58 | | |
| Specific load speed (depends on the controller settings) [RPM/1Vdc] | 11 – 15 | | | 18 – 22 | | | 50 – 58 | | |
| Magnetic field weakening (for higher RPM at low torque) [%] | up to 100 | | | | | | | | |
| Magnetic flux – axial [Vs] | 0,0393 | | | 0,0257 | | | 0,095 | | |
| Temperature sensor in the motor | kty 81/210 | | | | | | | | |
| Number of pole pairs | 10 | | | | | | | | |
| Rotor Inertia (mass dia=160mm, m=4,0kg) [kg*cm ²] | 256 | | | | | | | | |
| Bearings SKF _ FAG | R/R 6206/6206 or R/AR 6206/7206 or AR/AR 7206/7206 («O» orientation) | | | | | | | | |

*For a few seconds.

Maximal battery voltage is 600 Vdc (EMRAX 207 High Voltage). Maximal RPM must not be exceeded.

It is possible to weaken the magnetic field (up to 100%) to get higher RPM at existing battery voltage. Maximal RPM must not be exceeded.

These data are valid for the motors, which were sold after January 2014.

EMRAX motors that had been made before May 2012 have 30% lower power/torque and RPM than new generation of EMRAX motors.