

eAir 1.2 Data sheet V1-8

Parameter	Unit	Value
Air pressure	[bar]	12.5
Max. flow rate @ 10 bar	[l/min]	325
Max. flow rate @ 6.5 bar	[l/min]	360
Rated flow rate @10 bar	[l/min]	270
Device speed range	[rpm]	1000-3500
Rated speed	[rpm]	3000
Drive type		Direct
Motor type		Permanent Magnet Synchronous Motor
Motor rated output power @ 3000 rpm	[kW]	3.8
Motor rated torque	[Nm]	12.0
Motor max. torque	[Nm]	24.0
Motor rated phase to phase voltage (Y/ Δ)	[V _{RMS}]	400 / 230
Motor rated current (Y/ Δ)	[A _{RMS}]	8.3 / 14.4
Motor max. current (Y/ Δ)	[A _{RMS}]	17 / 29.4
Overload operating mode @ 200 %	[s]	60
Safety valve setup	[bar]	14
Oil residue	[ppm]	<3
Oil Quantity	[l]	~1.5
Nominal oil temperature	[°C]	70
Maximum air/oil temperature	[°C]	105
Anti-condensing system		Automatic
Noise level (@ 2500 rpm)	[dB(A)]	68
Minimum/Maximum ambient temperature*	[°C]	-30* / +45
Maximum relative humidity	[%]	85
Protection class		IP 55
Base length / width / lenght	[mm]	517 / 320 / 348
Approved compressor oil		Acc. DIN ISO 3448 VG46
Coolant		Water/Glycol 50/50
Min/Max flow rate	[l/min]	2/5
Pressure drop @ min/max flow rate	[bar]	0.002/0,01
Coolant max temperature	[°C]	60
Weight dry	[kg]	33.3



* In order to start-up the compressor at ambient temperatures below +3 °C, e.g. after parking the vehicle outside overnight in the winter, the **“Low-Temperature Hardware- and Software solution”** for the compressor is **mandatory** to avoid ice building up inside the compressor.

For normal driving operation, the ambient operating range is -30 °C / +45 °C. When operating the compressor at ambient air temperatures below -15 °C, we recommend using synthetic hydraulic oil.

Motor MNF 80/4-090-A Data Sheet

Parameter	Unit	Value	
		Y	Δ
Power	[kW]	3.8	
Torque (rated)	[Nm]	12	
Torque (max)	[Nm]	24	
Speed (rated)	[rpm]	3000	
Speed (max)	[rpm]	3500	
Freq.	[Hz]	100	
Pole pairs		2	
Current (rated)	[A _{RMS}]	8.3	14.4
Current (max)	[A _{RMS}]	17.0	29.4
Motor voltage (rated phase to phase)	[V _{RMS}]	400	230
DC-link voltage	[V]	>560	>325
Phase:			
k _E	[V _{RMS} /krpm]	54.8	54.8
R _{Ph,20}	[Ohm]	1.25	1.25
L _d	[mH]	9.2	9.2
L _q	[mH]	21.4	21.4
Line to line:			
k _{E,LL}	[V _{RMS} /krpm]	95	54.8
R _{LL,20}	[Ohm]	2.5	0.83
L _{LL,d}	[mH]	18.4	6.1
L _{LL,q}	[mH]	42.8	14.3
Connection		Y	Δ
Moment of inertia	[kgm ²]	0.00245	
Weight	[kg]	12	
Protection class		IP55	
Thermal class		F	
Thermal protection		PTC	
Cooling type		Air cooled	
Rotational direction*		Clockwise	



In order to run the motor, a frequency inverter capable of conducting **sensorless control** for permanent magnet motors is needed, because the motor has no own position sensor or encoder.



*The Rotational Direction is defined according to DIN-EN60034-8 (looking on the motor shaft). For the eAir 1.2 application the motor has to run counterclockwise (left) and therefore the rotational direction in the inverter has to be inverted.

