

eAir 2.1 Data sheet V2-6

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]	3.6
Motor rated torque	[Nm]	11.5
Motor max. torque	[Nm]	22
Motor rated phase to phase voltage	[V _{RMS}]	400/230
Motor rated current	[A _{RMS}]	7.8/13.5
Motor max. current	[A _{RMS}]	15/26
Safety valve setup	[bar]	14
Oil residue	[ppm]	<3
Oil Quantity	[l]	~1.5
Nominal oil temperature	[°C]	70
Maximum oil temperature	[°C]	105
Nominal air temperature	[°C]	<85
Oil heater		24 V – 35 W – 1.5 A
Anti-condensing system		Automatic
Noise level @ 2500 rpm	[dB(A)]	68
Minimum/Maximum ambient temp.*	[°C]	-30* / +80
Maximum relative humidity	[%]	85
Protection class		IP 67
Base length / width / height	[mm]	490 / 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]	0.1/0.5
Coolant max temperature	[°C]	60
Weight	[kg]	27.6



* 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 / +80 °C. When operating the compressor at ambient air temperatures below -15 °C, we recommend using synthetic hydraulic oil.

Motor MMA 80-8-60-...-...-W

Parameter	Unit	Value	
		400 V	230 V
Power	[kW]	3.6	
Torque (rated)	[Nm]	11.5	
Torque (max)	[Nm]	22	
Speed (rated)	[rpm]	3000	
Speed (max)	[rpm]	3500	
Freq.	[Hz]	400	
Pole pairs		8	
Current (rated)	[A _{RMS}]	7.8	13.5
Current (max)	[A _{RMS}]	15	26.0
Motor voltage (rated phase to phase)	[V _{RMS}]	400	230
DC-link voltage	[V]	≥ 560	≥ 325
Phase:			
k _E	[V _{RMS} /krpm]	56.6	32.7
R _{Ph,20}	[Ohm]	0.625	0.21
L _d	[mH]	2.7	0.9
L _q	[mH]	2.85	0.95
Line to line:			
k _{E,LL}	[V _{RMS} /krpm]	98	56.6
R _{LL,20}	[Ohm]	1.25	0.42
L _{LL,d}	[mH]	5.4	1.8
L _{LL,q}	[mH]	5.7	1.9
Connection		Y	Y
Moment of inertia	[kgm ²]	0.0020	
Weight	[kg]	7.2	
Protection class		IP67	
Thermal class		H	
Thermal protection		PTC (Pt1000 on request)	
Cooling type		Water cooled	
Coolant		Water/Glycol 50/50	
Coolant max temperature	[°C]	60	
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 2.1 application the motor has to run counterclockwise (left) and therefore the rotational direction in the inverter has to be inverted.

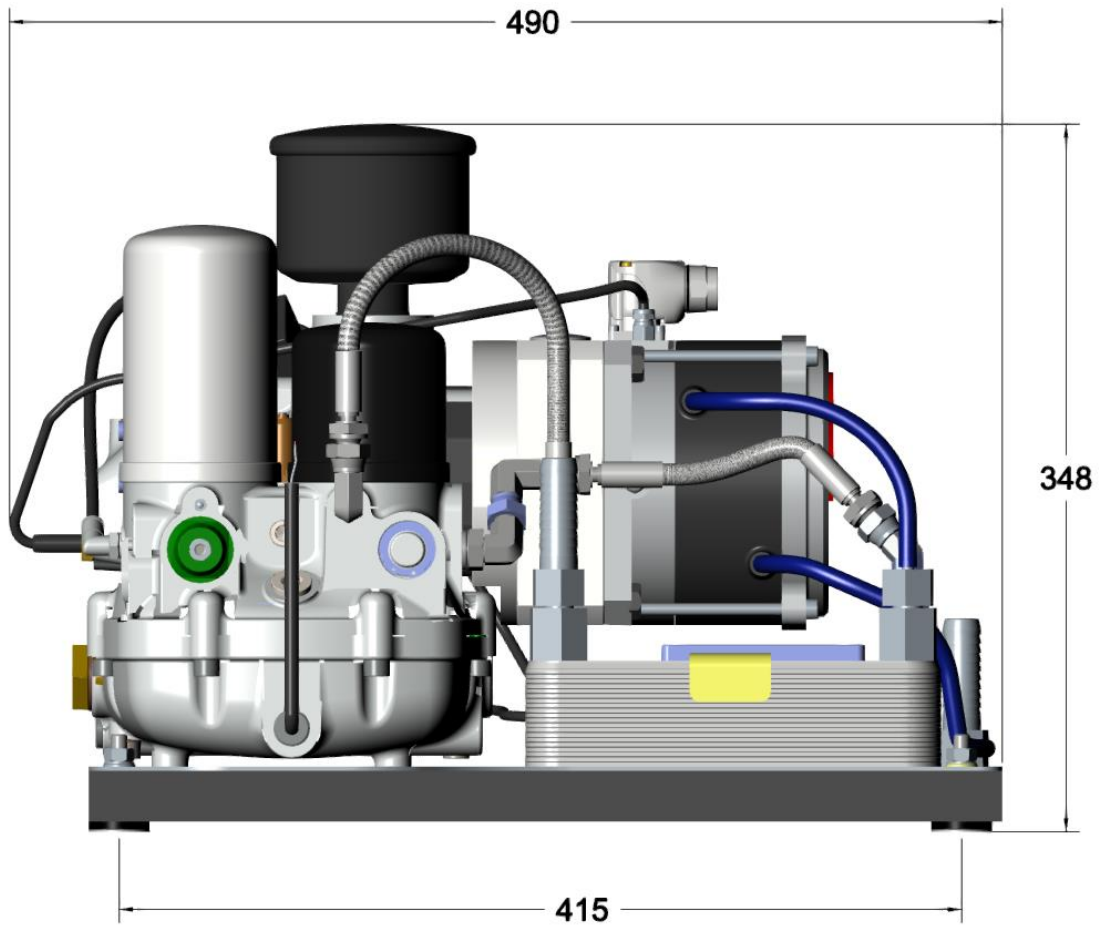


Figure 1 eAir 2.1 Side View

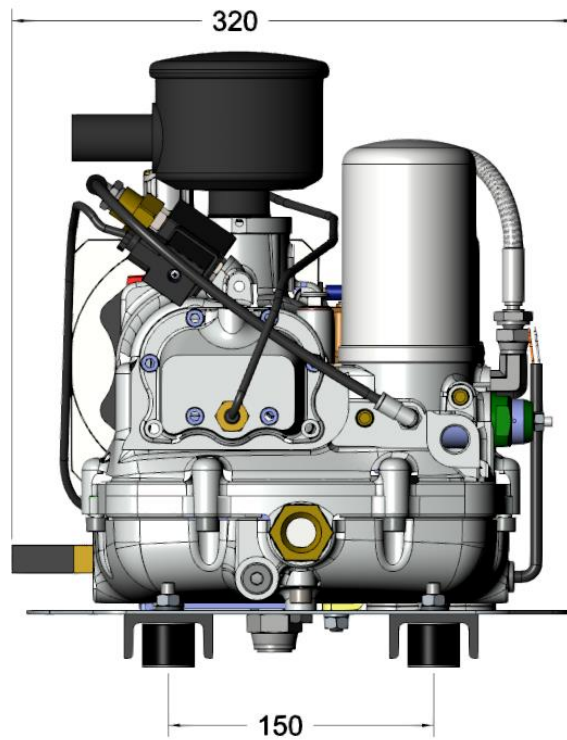


Figure 2 eAir 2.1 Front View