

eServo 1.1 Data Sheet V1-7

Parameter	Unit	Value
Displacement	[ccm/rev]	5.5
Flow rate @ 3000 rpm	[l/min]	16.5
Flow rate @ 3500 rpm		19.3
System pressure (rated / max)	[bar]	100 / 190
Device speed range	[rpm]	1000-3500
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
Motor rated phase to phase Voltage	[V _{RMS}]	400/230
Motor rated current	[A _{RMS}]	8.3/14.4
Motor max. current	[A _{RMS}]	17.0/29.4
Overload operating mode @ 200 %	[s]	60
Ambient temperature range	[°C]	-30 / 80
Noise level (pump only)	[dB(A)]	52
Protection class		IP 55
Base length	[mm]	355
Base width	[mm]	164
Base height	[mm]	223
Approved hydraulic pump unit oil		See link below
Weight dry	[kg]	16

Approved oil:

Use mineral oil compliant with *Bosch Rexroth Fluid Rating List RDE90245*. The **actual version** of this list can be found at the following link:

https://www.boschrexroth.com/en/xc/myrexroth/mediadirectory?publication=NET&search_query=90245&search_action=submit

Motor Data

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			
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 eServo 1.1 application the motor has to run counter-clockwise (left) and therefore the rotational direction in the inverter has to be inverted.

