

eServo 3.0 Datasheet V1-10

Parameter	Unit	Value
Displacement	[ccm/rev]	12
Flow rate @ 1500 rpm	[l/min]	18
System pressure (rated / max)	[bar]	100 / 190
Device speed range	[rpm]	500 - 1500
Drive type		Direct
Motor type		Permanent Magnet Synchronous Motor
Motor rated output power @ 1500 rpm	[kW]	3.4
Motor rated torque	[Nm]	21.5
Motor max. torque	[Nm]	41
Motor rated phase to phase Voltage	[V _{RMS}]	400/230
Motor rated current	[A _{RMS}]	6.8/11,8
Motor max. current	[A _{RMS}]	13.5/23,4
Overload operating mode @ 200 %	[s]	60
Ambient temperature range	[°C]	-30 / 80
Noise level (pump only)	[dB(A)]	41
Protection class		IP 67
Base length	[mm]	254
Base width	[mm]	145
Base height	[mm]	216
Approved hydraulic pump unit oil		See link below
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 dry	[kg]	11.7

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 MMA 80-8-90-...-...-W

Parameter	Unit	Value	
		400 V	230 V
Power	[kW]	3.4	
Torque (rated)	[Nm]	21.5	
Torque (max)	[Nm]	41	
Speed (rated)	[rpm]	1500	
Speed (max)	[rpm]	1500	
Freq.	[Hz]	200	
Pole pairs		8	
Current (rated)	[A _{RMS}]	6.8	11.8
Current (max)	[A _{RMS}]	13.5	23.4
Motor voltage (rated phase to phase)	[V _{RMS}]	400	230
DC-link voltage	[V]	>560	≥ 325
Phase:			
k _E	[V _{RMS} /krpm]	121	121
R _{Ph,20}	[Ohm]	1.73	1.73
L _d	[mH]	7.1	7.1
L _q	[mH]	8.3	8.3
Line to line:			
k _{E,LL}	[V _{RMS} /krpm]	210	121
R _{LL,20}	[Ohm]	3.45	1.15
L _{LL,d}	[mH]	14.1	4.7
L _{LL,q}	[mH]	16.5	5.5
Connection		Y	Y
Moment of inertia	[kgm ²]	0.0030	
Weight	[kg]	8	
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 eServo 3.0 application the motor has to run counter-clockwise (left) and therefore the rotational direction in the inverter has to be inverted.

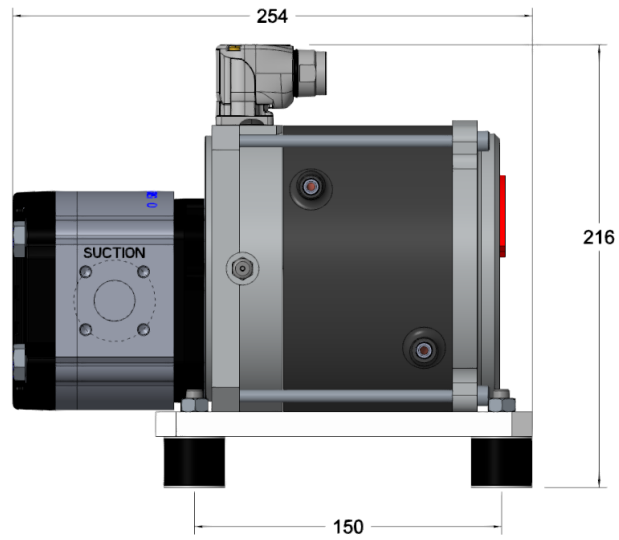


Fig. 1 eServo 3.0 Side View

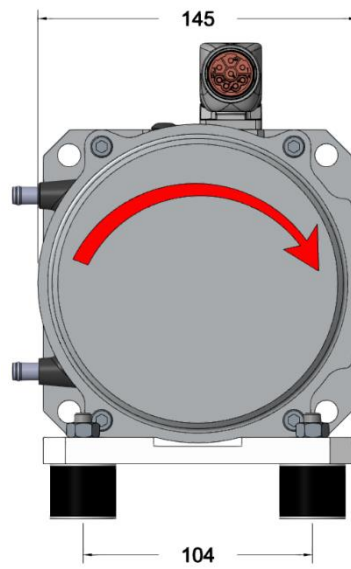


Fig. 2 eServo 3.0 Back View

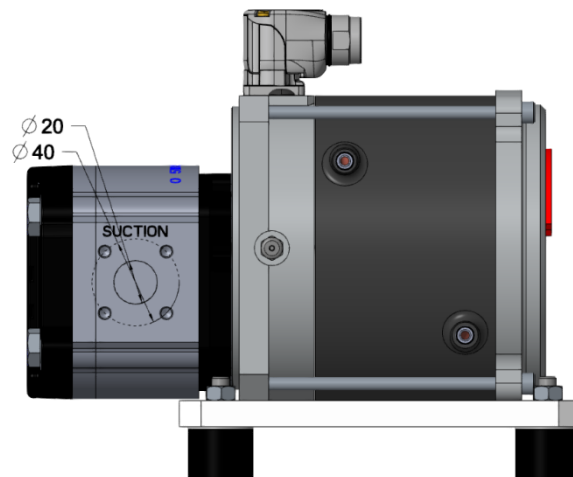


Fig. 3 eServo 3.0 Hydraulic Connection "Suction Side"

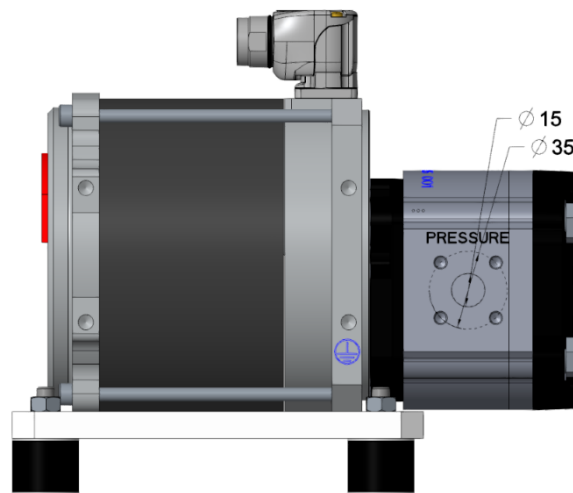


Fig. 4 eServo 3.0 Hydraulic Connection "Pressure Side"