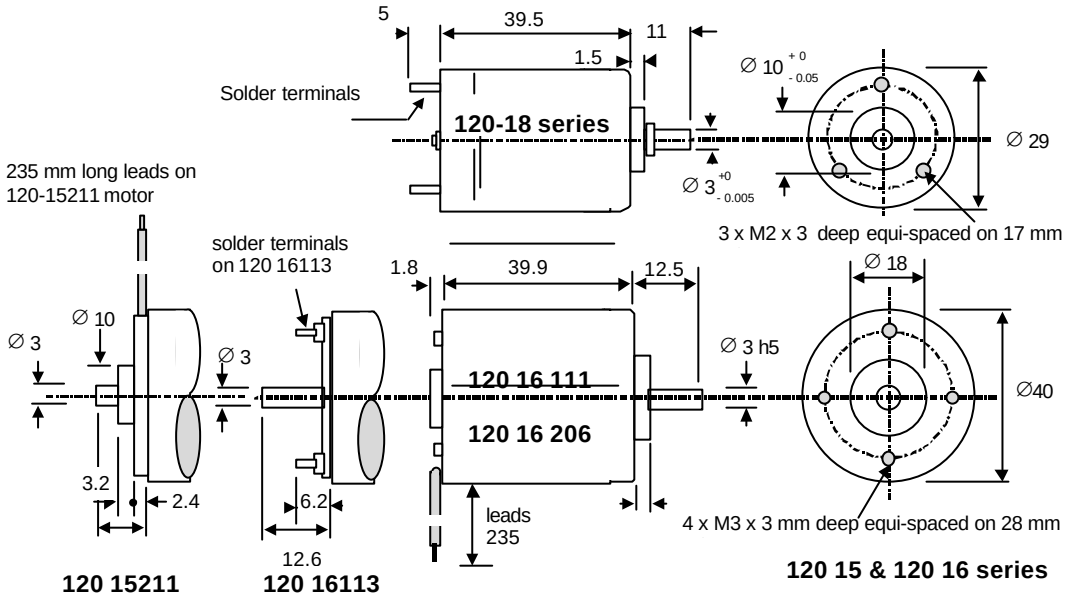
Low cost 2-12 Watt ironless rotor servo motors 120 series

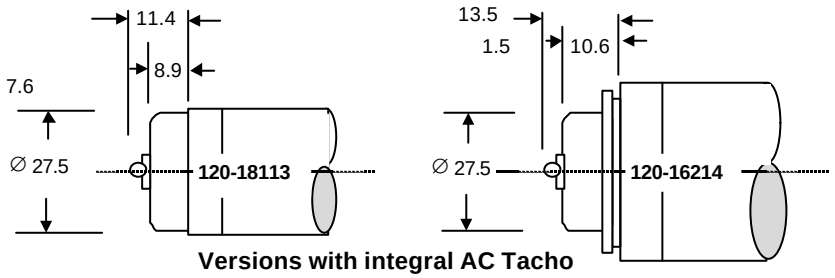
The 120 series ironless rotor servo motors provide all the essential features necessary to achieve high performance servo operation combined with economic pricing

Features include:

- Skewed coreless design for low inertia
- High peak torque for rapid acceleration and reversals
- Precious metal commutation for accurate control
- Low internal friction for high efficiency
- Smooth operation, free from cogging over wide speed range
- High reliability and long life
- Optional precision Ovoid gearbox for increased torque

Dimensions: mm





Versions with integral AC Tacho

Typical performance with matched drives

Motor	No-load Speed (rpm)	Rated Speed (rpm)	Rated Torque (Ncm)	Rated Current (Amps)	Peak Torque (Ncm)	using Servo Amplifier	DC Supply (Vdc)	Power Supply for AC operation (110-240 Vac)
120-18105	3,650	3,000	0.6	0.23	1.5	**EM40**	N/A	EM47
120-16111	3,200	2,500	1.5	0.4	3.5	**EM40-1**	N/A	EM47
120-16206	3,200	2,250	2.0	0.3	6.5	**PM121**	N/A	integral in drive
120-15211	5,000	4,000	2.6	0.6	13.5	**MSE421**	24	MSE171

Low cost ironless rotor dc servo motor 120 series

Specification dc servo motor types 120 -18 series

Servo Motor- options: 9904 120-	18 105	18215
Motor body diameter (mm)	29	29
Nominal Voltage (Vdc)	12	24
Maximum Output Power (Watts)	2.9	2.9
No-load speed (rpm)	3,800	3,800
Speed @ rated torque (rpm)	3,000	3,000
Rated Torque (Ncm)	0.6	0.6
Peak Torque (Ncm)	2.9	2.9
Max No load current (Amps)	0.055	0.031
Rotor Inertia ($Kgcm^2$)	0.009	0.009
Mechanical time constant (milli secs)	13	13
Torque Constant (Ncm / A)	2.9	6.12
Voltage Constant (V / 1000 rpm)	3.16	6.3
Rotor Resistance (Ohms)	12	47
Rotor inductance (mH)	1.0	4.1
Commutation	Precious metal	
Bearings	slide	
Maximum radial load (N)	5	
Maximum axial load (N)	0.5	
Operating Ambient temperature range	-10 to +65 ^{O}C	
Storage Ambient temperature range	-20 to +80 ^{O}C	

Specification dc servo motor types 120 16 & 15 series

Servo Motor- options: 9904 120-	16 111	16 113	16 206		15211
Motor body diameter (mm)	40	40	40		40
Nominal Voltage (Vdc)	12	15	24		24
Maximum Output Power (Watts)	4.0	7.0	5.0		12
No-load speed (rpm)	3,200	4,000	3,250		5,000
Speed @ rated torque (rpm)	2,500	3,000	2,250		4,000
Rated Torque (Ncm)	1.5	2.2	2.0		2.6
Peak Torque (Ncm)	6.5	8.4	6.5		13.5
Max No load current (Amps)	0.030	0.040	0.015		0.10
Rotor Inertia ($Kgcm^2$)	0.039	0.043	0.039		0.040
Mechanical time constant (milli secs)	19.6	22	19.6		19
Torque Constant (Ncm / A)	3.5	3.5	7.0		4.6
Voltage Constant (V / 1000 rpm)	3.6	3.6	7.3		4.8
Rotor Resistance (Ohms)	6.2	6.2	24.5		8.0
Rotor inductance (mH)	0.8	0.8	3.3		1.3
Commutation	Precious metal			carbon brushes	
Bearings	slide *			slide *	
Maximum radial load (N)	7			7	
Maximum axial load (N)	0.5			0.5	
Operating Ambient temperature range	-10 to +60 ^{O}C			-10 to +60 ^{O}C	
Storage Ambient temperature range	-40 to +70 ^{O}C			-40 to +70 ^{O}C	

Note* : Versions with ball bearings are available on request.

Motor options with ac tacho:

29 mm diameter type 9904 120 18113 : motor specification as 9904 120 18105
40 mm diameter type 9904 120 16214 : motor specification as 9904 120 16206

AC tacho specification:

Number of poles	72
RMS voltage @ 3,000 rpm	650 mV (min.)
Amplitude variation per motor rev.	15 % (max.)
Frequency hysteresis @ 3,150Hz	0.11 % (max.)