



## M4-200X DC Servomotors

### Direct Replacement of Parvex RX3\* motors



- Identical motor shaft and mount dimensions (IEC & NEMA options)
- Matched motor windings
- Compatible torque/speed performance
- Matched connection options
- 24V DC brake option
- Matched tachogenerator output
- Encoder options available
- Rare Earth magnets
- Rugged mechanical design

\* RX3 is a tradename of Parker (Parvex), brush DC servomotors



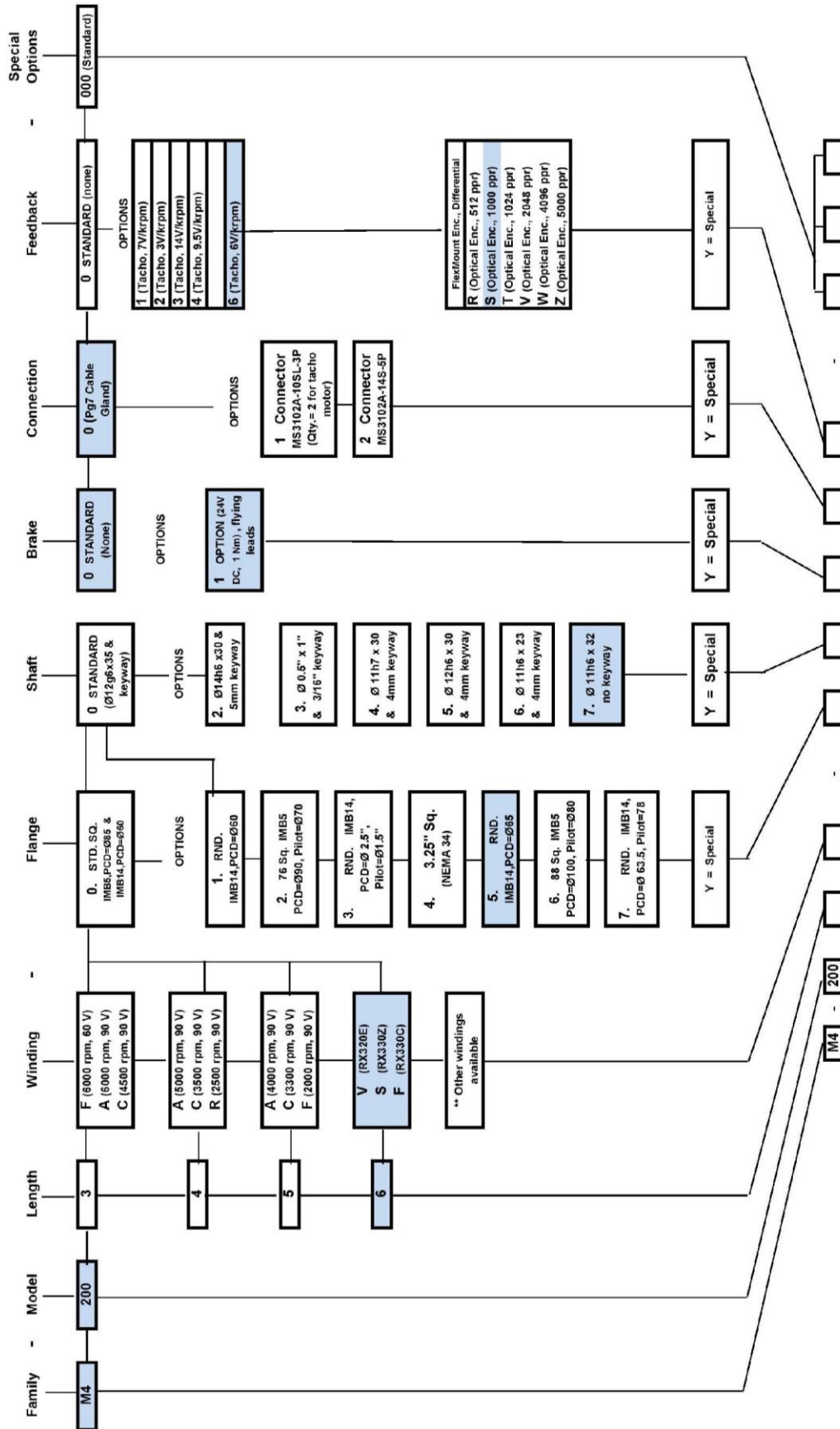


**Callan Technology Replacements**  
**for Parvex RX3 servomotors**

<b>Parvex</b>	<b>Callan Technology</b>
RX320E	M4-2006V
RX330C	M4-2006F
RX330Z	M4-2006S



**M4-200X Code Table (Replacements for Parvex RX3)**



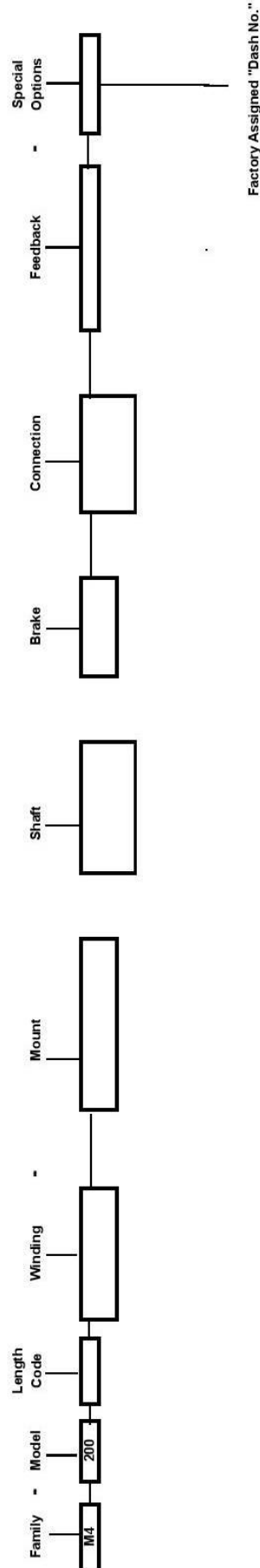
For encoders, encoder adapters, rear shaft, shaft seals etc please contact factory

■ = Parvex Standard for RX3

Example : **M4** - **200** **6** **F** - **5** **Z** **0** **6** - **0** **0** **0**



**M4-200X Code Table (Replacements for Parvex RX3)**



**Dash No. List (as of 1/10/20)**

- 000 Standard motor as specified by order code, no thermostat, no rear shaft ext (plain endcover)
- 708 Standard motor with earth wire, 1,000mm leadwires

**Accessories (must be specified and ordered separately)**



## RX320 & RX330 winding equivalents

Motor	M4-2006		
	(RX320E)	(RX330Z)	(RX330C)
Winding	V	S	F
<b>Basic Motor Constants</b>			
Power, P (W)	350	350	350
Cont. Stall Torque Mo (Nm)	1.1	1.4	1.54
Current @ Cont. Torque, Io (A)	7.8	11.2	9.5
Rated Speed, Nr (rpm)	3,000	3,000	3,000
Peak Torque, Mmax (Nm)	2.85	4	4.0
Current @ Peak Torque, Ip (A)	20	33	25
Rated Terminal Voltage, VT (V)	55	48	60
Back EMF Const, Ke (V/krpm)	15.6	13.5	17.7
Torque Const., Kt (Nm/A)	0.148	0.128	0.167
DC Resistance, R ( $\Omega$ )	0.55	0.4	0.65
Inductance, L (mH)	0.69	0.52	0.89
Weight, M (kg)	3.4		
Inertia, JM (kgm <sup>2</sup> )	2.40x10 <sup>-4</sup>		
Static Friction, TF (Nm)	0.05		
Viscous Damping, F1 (Nm/krpm)	0.02		
<b>Tachogenerator Option</b>			
Tachogenerator Model	TGF 1568		
Voltage, KG (V/krpm)	3.0 / 6.0 / 7.0		
Ripple (pk-pk/avg)	3%		
Inertia, JT (kgm <sup>2</sup> )	0.14x10 <sup>-4</sup>		
Weight, MT (kg)	0.6		
<b>Encoder Option</b>			
Encoder Type	Incremental (A quad B with index Z & complements)		
Power Supply	5 V DC, $\pm$ 5%, 200 mA max		
Output	Line Driver, 20mA max sink/source		
Resolution (ppr)	1000/1024 / 2048 / 4096		
Frequency Response	200 kHz Max.		
<b>Brake Option</b>			
Brake Open Voltage (Volts D.C.)	24		
Power (Watts)	10		
Brake Static Torque (Nm)	2.0		
Weight (brake + housing) Kg	0.8		

### **Notes.**

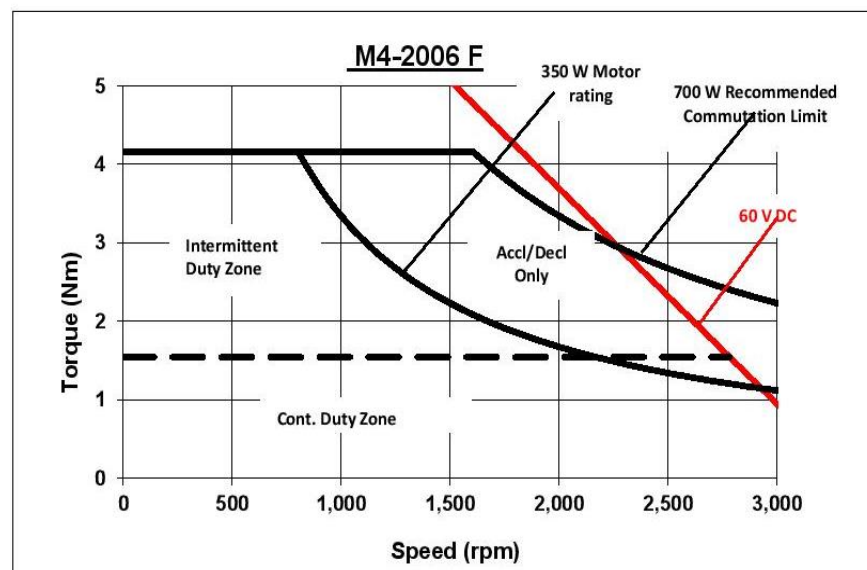
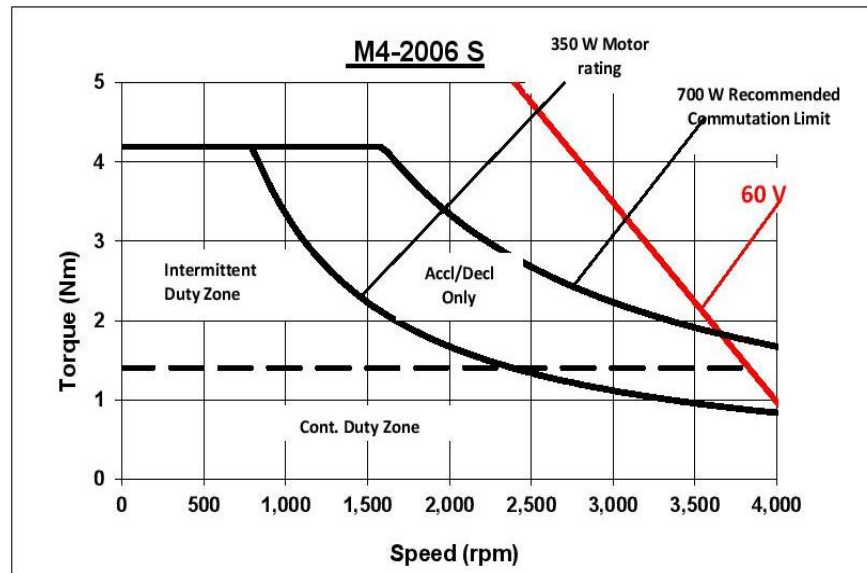
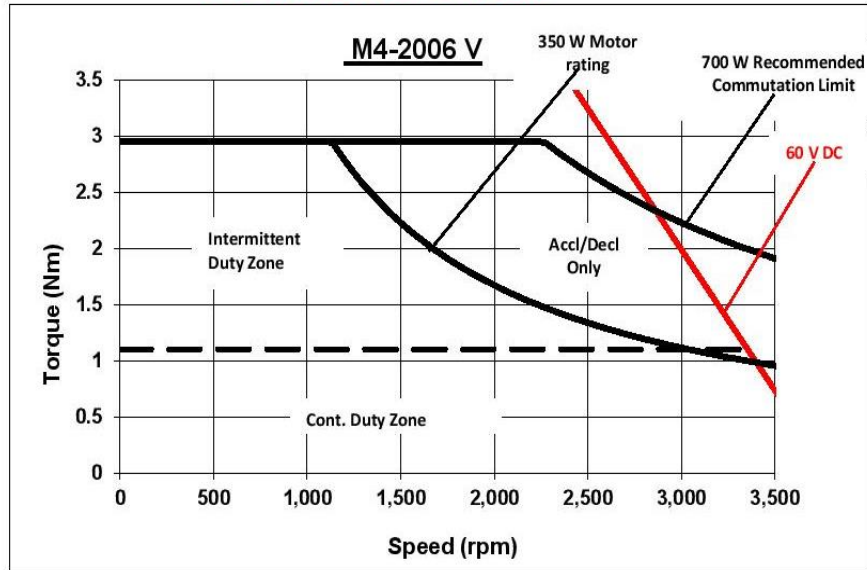
Max terminal Voltage = 90V

I<sub>DEMG</sub> >> 40A (all windings)

Rare Earth Magnets



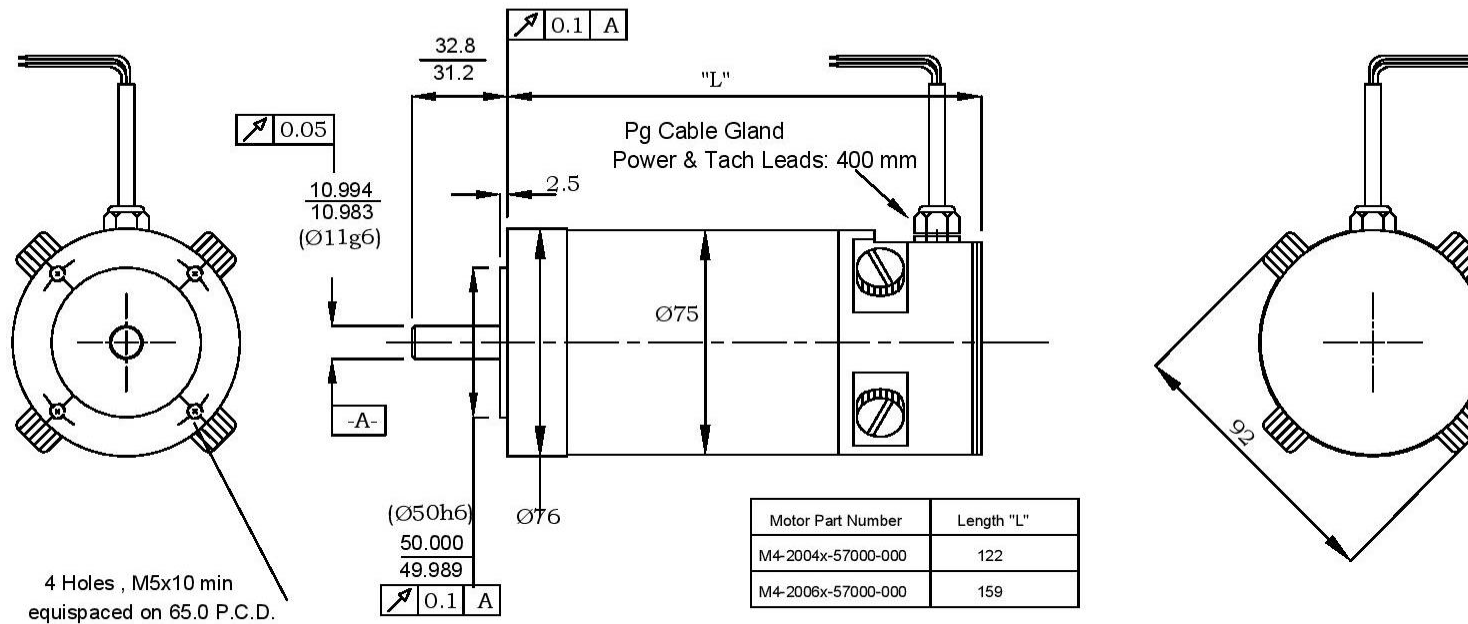
## Performance Curves





### Motor Wiring

+ve :- Red (#16 AWG)  
-ve :- Black (16 AWG)  
Lead wires 400mm



### Notes :-

1. With a positive current applied to red lead with respect to black lead of motor, rotation shall be clockwise facing mounting end of motor.
2. Motor can be mounted in any position.

Tolerances.		Scale :	Weight :
XX = ± 0.3 mm		NTS	
X.XX = ± 0.1 mm		Material :	
Ang. Dim. = ± 1°		Remove all burrs and sharp corners	
		Outline - Rare Earth Magnet Servomotor	
		M4-200X-57000-000	
Callan Technology Ltd.		M4-200X-57000-000	Sheet 1 of 1

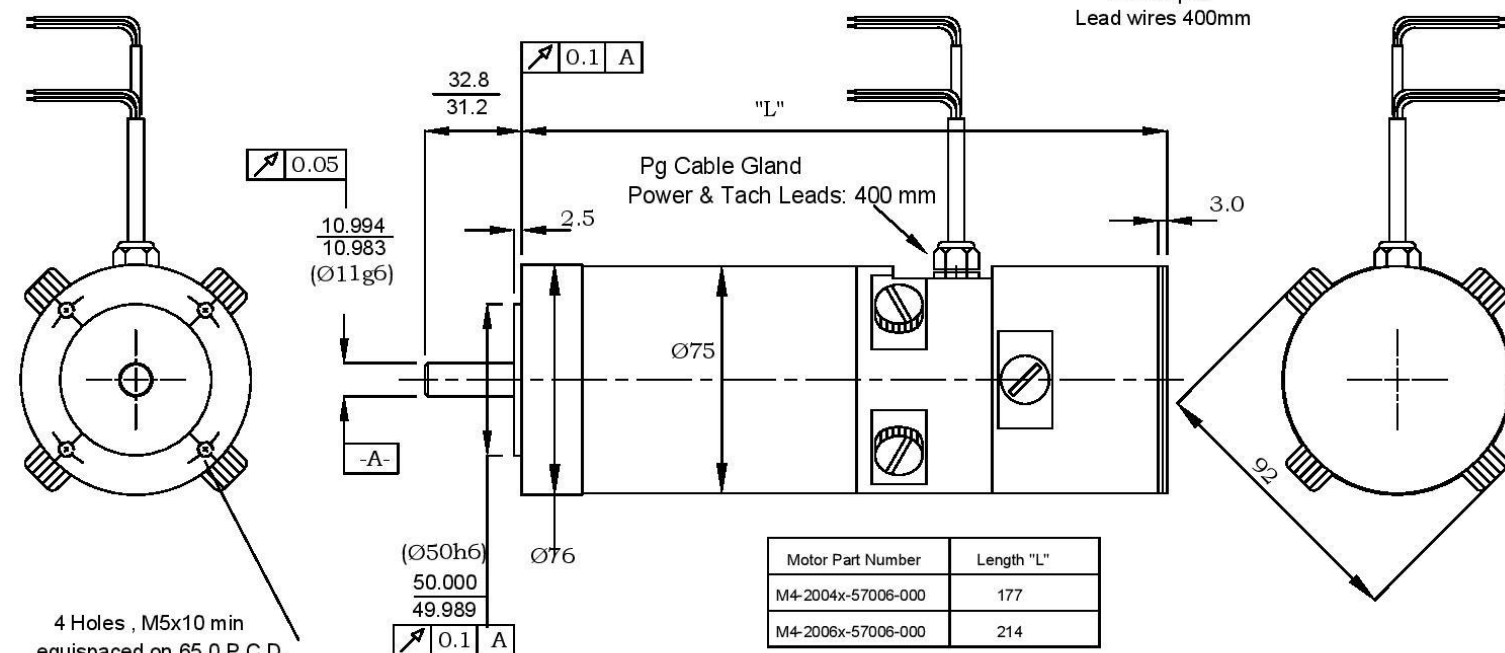


**Motor Wiring**

+ve :- Red (#16 AWG)  
-ve :- Black (16 AWG)  
Lead wires 400mm

**Tacho Wiring**

+ve :- Blue (#20 AWG)  
-ve :- White (20 AWG)  
6.0 V/krpm  
Lead wires 400mm

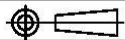


Technical drawing details:  
 - Front view: 4 Holes, M5x10 min equispaced on 65.0 P.C.D.  
 - Side view: Pg Cable Gland, Power & Tach Leads: 400 mm, Ø75, Ø76, 32.8, 31.2, 2.5, 3.0, 92.  
 - Tolerances: 0.1 A, 0.05, 0.1 A, 0.1 A.  
 - Dimensions: 10.994/10.983 (Ø11g6), 50.000/49.989 (Ø50h6).

Motor Part Number	Length "L"
M4-2004x-57006-000	177
M4-2006x-57006-000	214

**Notes :-**

- With a positive current applied to red lead with respect to black lead of motor, rotation shall be clockwise facing mounting end of motor.  
With this rotation, a positive voltage shall be generated on blue lead of tach with respect to white lead.
- Motor can be mounted in any position.

		Tolerances: XX = ± 0.3 mm XXX = ± 0.1 mm Ang. Dim. = ± 1°		Scale: NTS		Weight:
				Material:		
				Remove all burrs and sharp corners		
				Outline - Rare Earth Magnet Servomotor		
				M4-200X-57006-000		
				M4-200X-57006-000		
				Sheet 1 of 1		



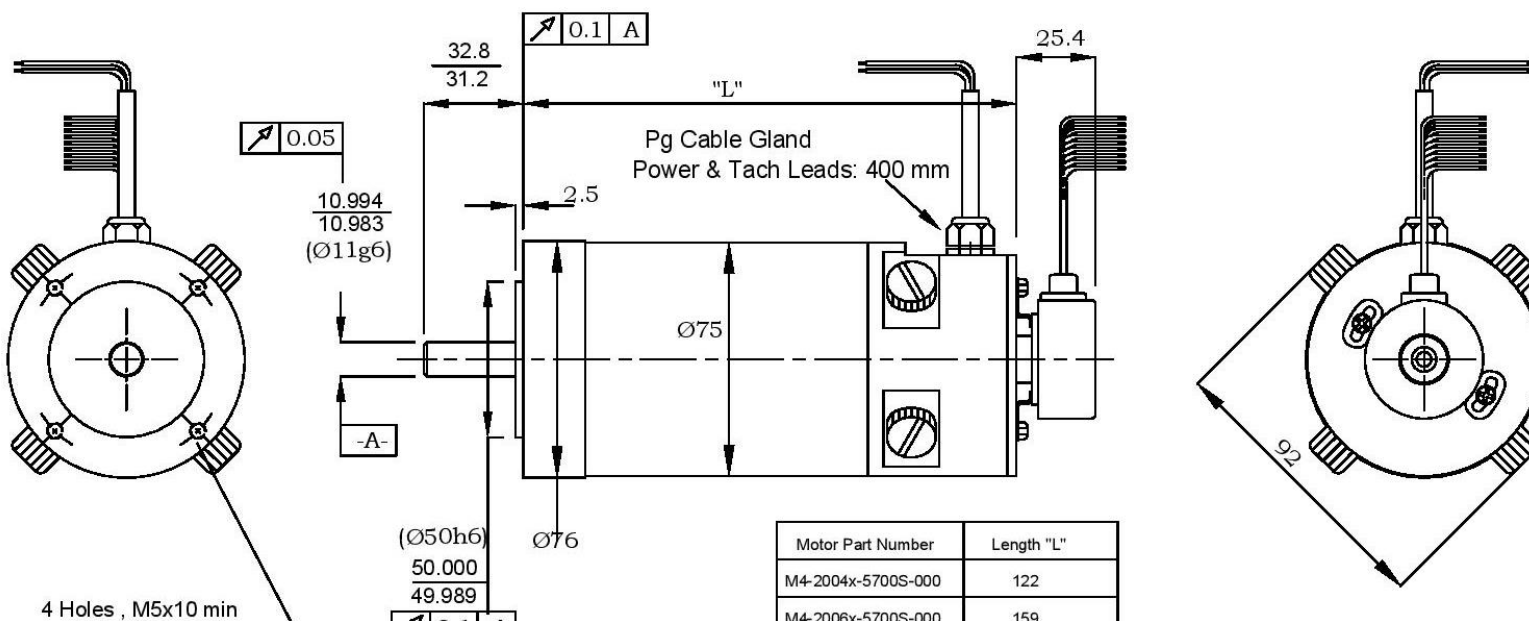


**Motor Wiring**

+ve :- Red (#16 AWG)  
-ve :- Black (16 AWG)  
Lead wires 400mm

**ENCODER LEAD CONFIGURATION**

White :- + (5-24) V DC      Red :- CH B  
Black :- 0 V DC            Green :- CH B (INV)  
Brown :- CH A              Orange :- CH Z  
Yellow :- CH A (INV)      Blue :- CH Z (INV)  
1000 ppr. line driver



Technical drawing details:  
 - Front view: 4 Holes, M5x10 min equispaced on 65.0 P.C.D.  
 - Side view: Ø75, Ø76, Pg Cable Gland, Power & Tach Leads: 400 mm, Length "L", 2.5 mm offset.  
 - Rear view: 92 mm diameter.  
 - Tolerances: 0.1 A, 0.05, 0.1 A.  
 - Dimensions: 32.8, 31.2, 10.994, 10.983 (Ø11g6), 50.000, 49.989.

Motor Part Number	Length "L"
M4-2004x-5700S-000	122
M4-2006x-5700S-000	159

**Notes:-**

- With a positive current applied to red lead with respect to black lead of motor, rotation shall be clockwise facing mounting end of motor.  
With this rotation, encoder channel A leads channel B by 90°
- Motor can be mounted in any position

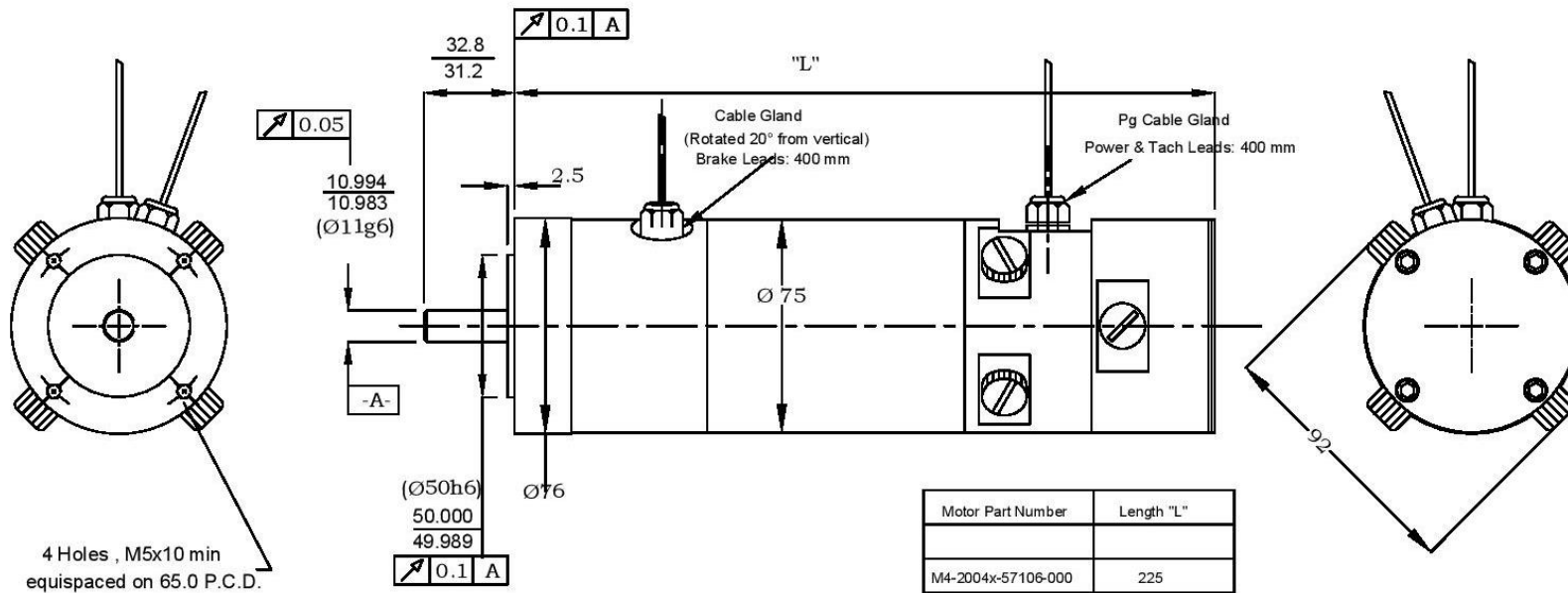
Tolerances.	
XX = ± 0.3 mm	
XXX = ± 0.1 mm	
Ang. Dim. = ± 1°	
Date	Name
15/9/20	POB
Drawn	
App'd	
Issue	Norm
ECO. No.	Date
Name	App'd

Scale : NTS	Weight :
Material :	
Remove all burrs and sharp corners	
Outline - Rare Earth Magnet Servomotor	
M4-200X-5700S-000	
<b>M4-200X-5700S-000</b>	
Sheet 1	of 1



**Motor Wiring**  
 +ve :- Red (#16 AWG)  
 -ve :- Black (16 AWG)  
 Lead wires 400mm

**Tacho Wiring**  
 +ve :- Blue (#20 AWG)  
 -ve :- White (20 AWG)  
 6.0 V/krpm  
 Lead wires 400mm



Notes :-

- With a positive current applied to red lead with respect to black lead of motor, rotation shall be clockwise facing mounting end of motor. With this rotation, a positive voltage shall be generated on blue lead of tach with respect to white lead.
- Brake Data:- 24V DC, 2Nm, 0.26 A, (2 white leads) Power to Release (Brake has no polarity)
- Tach Voltage :- 6.0 V/krpm
- Motor can be mounted in any position.

Tolerances. X.X = ± 0.3 mm X.XX = ± 0.1 mm Ang. Dim. = ± 1°		Scale : NTS		Weight :
Material :		Remove all burrs and sharp corners		
Date		Name		
29/3/12		POB		
App'd				
Issue		ECO. No. Date Name App'd Norm		
Callan Technology Ltd.		Outline - Rare Earth Magnet Servomotor M4-200X-57106-000		Sheet 1 of 1