

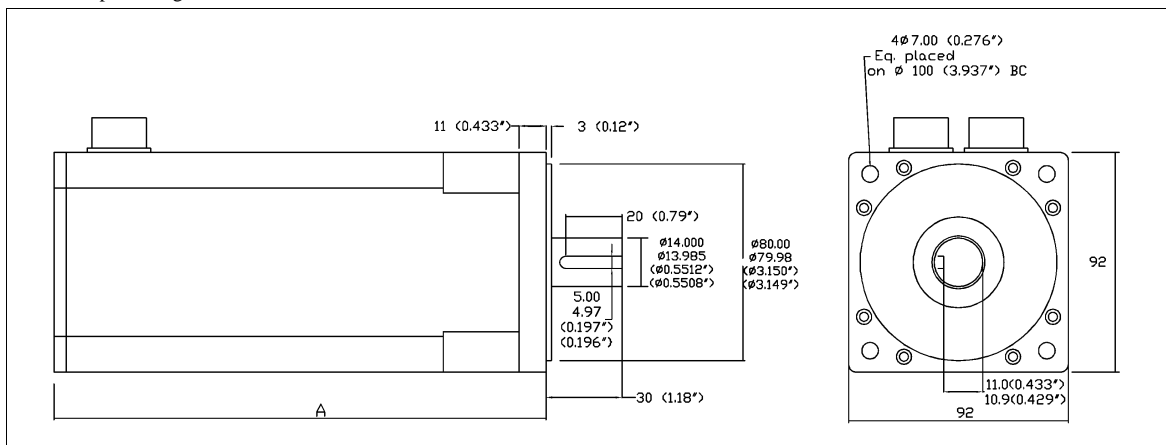
FM Brushless Motor Performance

FM80 Series Motor Data 90 mm Frame 230 V

Motor Parameters	Units	FM80A -40	FM80A -63	FM80B -40	FM80B -69	FM80C -44	FM80C -70
Horsepower	HP	0.9	0.5	1.5	1.1	1.9	1.5
Kilowatts	KW	0.7	0.4	1.1	0.8	1.4	1.1
Max. Speed	RPM	4000	2400	4000	2400	4000	2400
Rated Speed	RPM	4000	2400	4000	2400	4000	2400
Continuous Rated Torque	Nm(In-Lbs)	1.6 (14)	1.7 (15)	2.7 (24)	3.2 (28)	3.4 (30)	4.3 (38)
Continuous Stall Torque	Nm(In-Lbs)	1.9(17)	1.9 (17)	3.5 (31)	3.5 (31)	4.8 (43)	4.8 (43)
Peak Torque	Nm(In-Lbs)	5.5 (49)	5.9 (53)	9.59(84)	11.1(98)	11.9(105)	15.0(133)
Continuous Line Current	Amps RMS	2.9	2.0	4.8	3.2	5.5	4.3
Peak Current	Amps RMS	10.1	6.9	16.9	11.3	19.2	15.0
Torque Constant K_T	Nm/Amps (RMS)	0.58	0.92	0.58	1.01	0.64	1.03
Back EMF Constant K_B	Vrms/Krpm	40.2	62.6	40.2	69.3	43.6	70.4
DC Resistance	Ohms	7.8	18.8	2.5	7.4	1.5	4.2
Inductance	Millihenries	19.3	46.8	9.6	28.7	7.6	19.7
Rotor Inertia	Kg-M ² (In-Lbs-Sec ²)	0.00006 (0.00053)	0.00006 (0.00053)	0.00011 (0.00097)	0.00011 (0.00097)	0.00015 (0.0013)	0.00015 (0.0013)
Static Friction	Nm(In-Lbs)	0.1 (0.9)	0.1 (0.9)	0.1 (0.9)	0.1 (0.9)	0.1 (0.9)	0.1 (0.9)
Motor Weight	Kg(Lbs)	3 (7)	3 (7)	5 (10)	5 (10)	6 (13)	6 (13)
Maximum Line Voltage	Vrms	250	250	250	250	250	250
Number of Poles		6	6	6	6	6	6

Notes:

1. Continuous rating @25°C. Motor mounted on a 250 mm X 250 mm X 6 mm Aluminum heatsink. Maximum winding temperature 155°C.
2. Test drive input voltage was 220 Vac.



Model	FM80A-40	FM80A-58	FM80B-40	FM80B-69	FM80C-44	FM80C-70
A	165 (6.50")	165 (6.50")	190 (7.48")	190 (7.48")	215 (8.46")	215 (8.46")

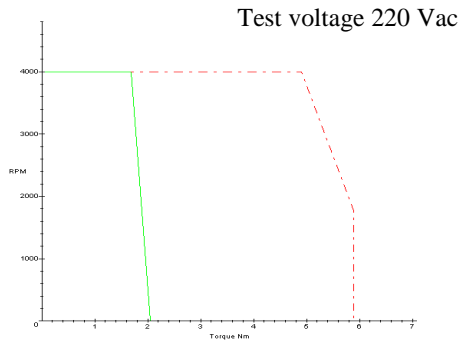
- Notes:**
- IEC mounting dimensions are shown. NEMA mountings are available, please contact Expro Engineering for information.
 - Radial load on output shaft < 180 N (40 Lbs). Axial load should be < 100 N (22 Lbs).
 - All data are subject to change without notice.

Expro Engineering **Phone:** **Fax:** **Email:**
 7500 Thunderbird Rd. Liverpool, NY 13088 (315) 453-0515 (315) 451-5193 contact@exproengineering.com

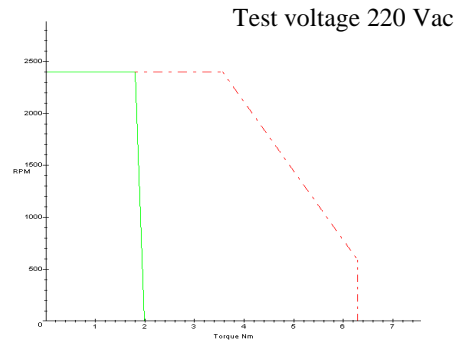
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FM80 Series Motor Data 90 mm Frame 230 Vac

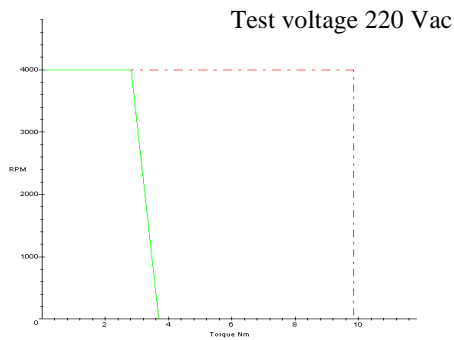
FM80A-40 PERFORMANCE



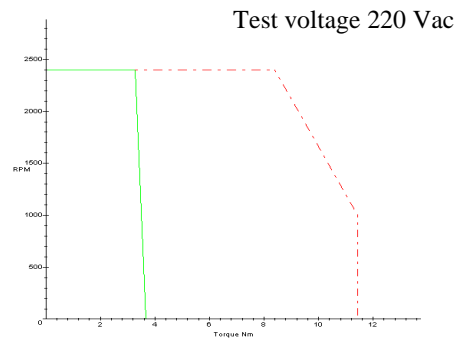
FM80A-63 PERFORMANCE



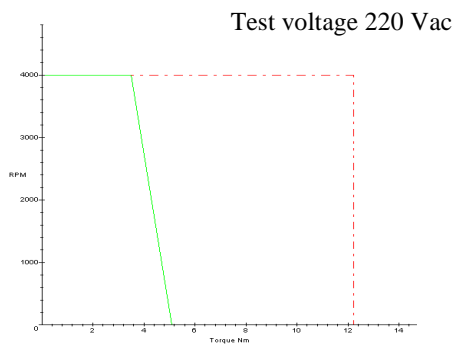
FM80B-40 PERFORMANCE



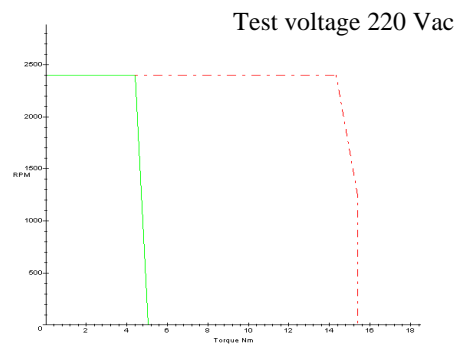
FM80CB-69 PERFORMANCE



FM80C-44 PERFORMANCE



FM80C-70 PERFORMANCE



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FM80 Motor Connectors and Connector Pin Outs

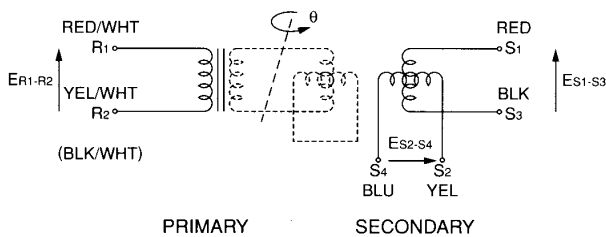
Motor Connector (PT02E-14-05P) Straight Mating Plug: PT06E-14-05S		
Pin	Function	Wire Color
A	ϕU	Red
B	ϕV	Black
C	ϕW	White
D	GND	Green
E		

Resolver Connector(PT02E-14-12P) Straight Mating Plug: PT06E-14-12S		
Pin	Function	Wire Color
A	COS-(S1)	Red
B	COS+(S3)	Black
C	SIN-(S2)	Yellow
D	SIN+(S4)	Blue
E	Excit (R1)	Red/White
F	Excit GND (R2)	Yellow/White
G	THERM	Green
H	THERM	Green
J		
K	* BRK(+)	
L		
M	* BRK(-)	

* For brake option only.

RESOLVER ELECTRICAL SPECIFICATIONS:

1. Operation temperature: -55°C to 155°C
2. Maximum speed: 10,000 rpm
3. Dielectric strength: Vac 500, 1 minute
4. Excitation voltage: 7 Vrms 10 KHz
5. Electric error: $\pm 10'$ Max.
6. Transformation ratio: 0.5 nominal



Excitation : $E_{R1-R2} = E_{sin} \omega t$
 Output : $E_{S1-S3} = K E_{R1-R2} \cos \theta$
 $E_{S2-S4} = K E_{R1-R2} \sin \theta$
 K : Transformation Ratio

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