

**DC PERMANENT MAGNET MOTORS
HIGH QUALITY INDUSTRIAL**

2796 Culver Ave., Dayton, Ohio 45429
PH: 513/294-1041 FAX: 294-8336

**MODEL FIR
BULLETIN 210A101**

SUPERCEDES 210A100

ELECTRICAL SPECIFICATIONS

Rating: 0.083 hp continuous duty.

Voltage: 12, 27, 50, 115 and 180 VDC are standard. Other voltages available if required.

Speed: Standard speeds, 3810 rpm to 7240 rpm. Higher and lower variations at all voltages upon request.

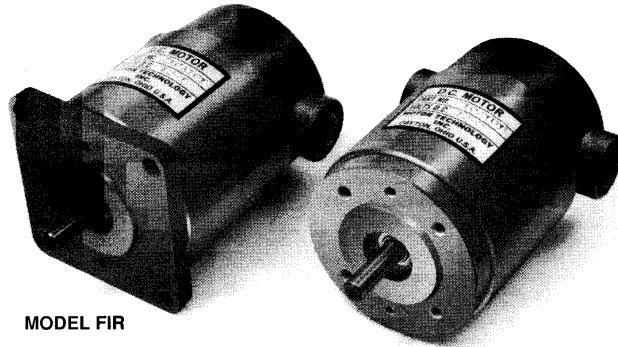
Connection Method: Two #18 AWG stranded leads, teflon insulated, 8" long are standard. Terminal type connections are available.

Rotation: Direction of rotation is CCW with red lead plus (+) and viewing shaft end.

Reversibility: When input voltage is reversed, motor rotation is reversed instantly.

The Motor Technology, Inc. new Model FIR motor is designed to provide solutions to today's demanding industrial needs. The higher power-to-weight ratio, efficiency and small size make this motor an excellent choice in a great number of applications, including medical and aerospace.

We can provide many modifications, including pinions, D.C. series or parallel brakes, flanges, lubricants, gear reductions, etc. See Bulletin 211A200/212 for the gear ratios available.



MODEL FIR

MECHANICAL SPECIFICATIONS

Frame: Steel tubing with machined aluminum end-bells.

Armature: Varnish impregnated, precision balanced, with diamond turned commutator. Inertia is 3.64×10^{-3} oz.in. sec.² (max.).

Magnet: Ceramic type 3540 with a B_r temp. coef. of -0.11% per °F.

Bearings: Double shielded, life lubricated, ABEC-1 ball bearings.

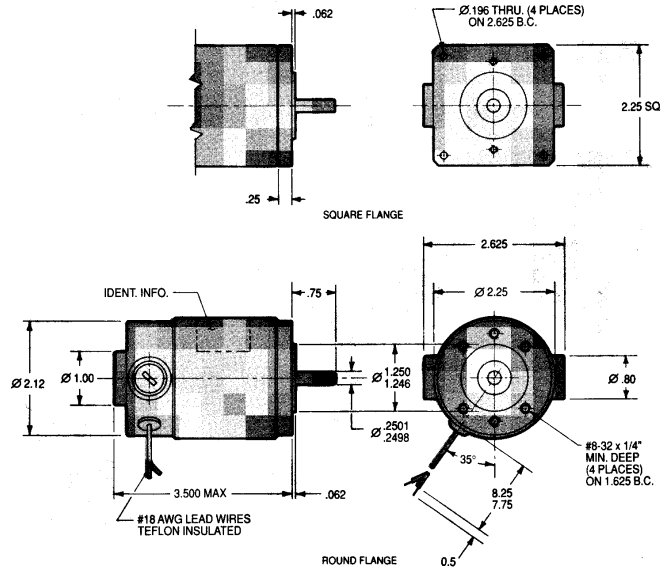
Brush-holder: Cartridge type, molded of Durez 1544 with brass insert. Holder is protected by surrounding end-bell casting.

Shaft: Precision ground stainless 17-4 PH, heat treated H-900.

Mounting Method: Either four tapped holes or thru holes depending on flange selected.

Weight: 1.75 lb. (max.).

DIMENSIONS



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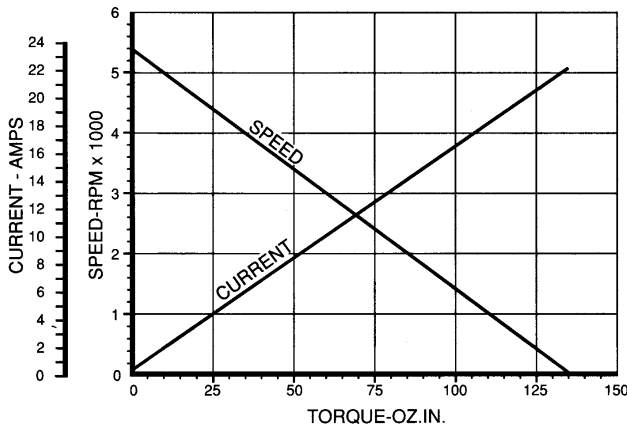
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BASIC MOTOR DATA — STANDARD PART NUMBERS

INPUT VOLTAGE DC	NO-LOAD SPEED* RPM	RATED TORQUE OZ.IN.	STALL TORQUE* OZ.IN.	NO-LOAD CURRENT* AMPS	RATED TORQUE CURRENT* AMPS	STALL CURRENT* AMPS	STANDARD FIR PART NUMBERS
12	6050	15	151	1.59	7.73	62.1	210A101-1
12	4800	21	120	1.21	7.87	39.1	210A101-2
12	3810	25	95	.88	7.10	24.6	210A101-3
27	6800	13	170	.82	3.49	34.9	210A101-4
27	5400	18	135	.62	3.44	22.0	210A101-5
27	4285	26	107	.46	3.66	13.9	210A101-6
50	6300	14	157	.40	1.87	16.2	210A101-7
50	5000	20	125	.31	1.88	10.2	210A101-8
50	3970	25	99	.22	1.78	6.41	210A101-9
115	7240	12	181	.21	.83	9.29	210A101-10
115	5750	17	144	.16	.81	5.85	210A101-11
115	4700	21	114	.12	.83	3.80	210A101-12
115	3820	25	90	.09	.74	2.45	210A101-13
180	4860	22	112	.07	.52	2.47	210A101-14
180	3980	25	89	.05	.49	1.61	210A101-15

* The standard production tolerance on no-load speed, stall torque and stall current is $\pm 15\%$. The tolerance on no-load current is $+25\%$. The tolerance on current at rated torque is $+15\%$.

**TYPICAL PERFORMANCE CURVES
210A101-5 at 27 VDC**



For complete engineering information on plotting speed/torque and current/torque curves for other armatures, see Bulletin E-1. For servo data, see Bulletin E-2.

ORDERING

For standard motors, simply order by using the part number listed above corresponding to the performance required.

Special modifications to the FIR motor are available and are ordered as follows:

1. Reference the closest standard P/N in your order.
2. Call out all the special requirements by stating exactly what is required.

We will then assign a special part number to identify your motor. For quick and accurate processing of future orders, just refer to this number.