

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

**DC PERMANENT MAGNET MOTORS
 MILITARY QUALITY**

**MODEL EML
 BULLETIN 170A105**

ELECTRICAL SPECIFICATIONS

Rating: 0.10 hp continuous duty.

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

Speed: Standard speeds, 2410 rpm to 7920 rpm. Higher and lower variations upon request.

Connection Method: Double conductor shielded cables, #18 AWG per MIL-W-16878, type E.

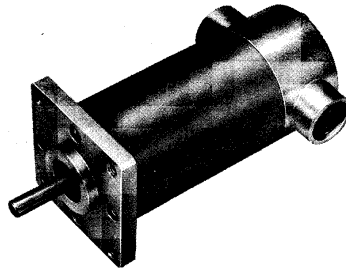
Rotation: Counter clockwise, with red lead plus (+) and black lead minus (-), viewing from shaft end.

Reversibility: Unit reverses rotation when voltage is reversed.

The Model EML is particularly suitable for military and high quality industrial applications with extremely high power requirements and severe space limitations. Special magnets contribute greatly to this motor's superior efficiency. Its torque/speed curve is quite flat, and its servo response characteristics are excellent.

Major uses of the EML model include valve drives and various aircraft actuators, including pumps and aerodynamic surfaces.

Motor Technology engineers can customize the EML motor to deliver the exact performance you need. Standard modification options include pinions, filters, D.C. series or parallel brakes, flanges, lubricants, gear reductions, etc. See Bulletin 171A117/133 for gear ratios available.



MODEL EML

MECHANICAL SPECIFICATIONS

Frame: Steel tubing with machined aluminum end-bells.

Armature: Varnish impregnated, precision balanced, with diamond turned commutator. Inertia is 1.6×10^{-3} oz. in. sec.² (max.).

Magnet: Samarium-Cobalt segments with 24 million energy product.

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

Lubrication: Grease per MIL-G-3278. Other lubricants available.

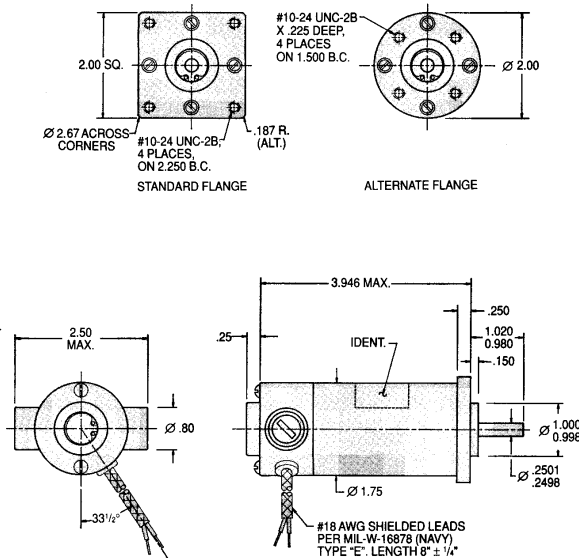
Brush-holder: Cartridge type, molded of Durez 1544 with brass insert. Holder is protected by surrounding end-bell casting.

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

Mounting Method: Four tapped holes are standard.

Weight: 1.60 lb. (max.).

DIMENSIONS



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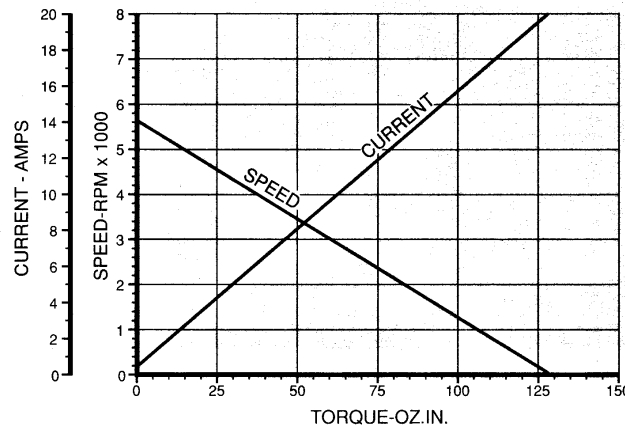
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BASIC MOTOR DATA — STANDARD PART NUMBERS

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 EML PART NUMBERS
12	7920	9.0	176	1.44	5.8	87	170A105-1
12	6330	11.5	141	1.08	5.5	56	170A105-2
12	4870	15.8	108	0.78	5.5	33	170A105-3
12	3960	22.0	88	0.61	5.9	22	170A105-4
27	7130	10.1	158	0.56	2.5	31	170A105-5
27	5700	13.1	127	0.42	2.4	20	170A105-6
27	4450	18.4	99	0.31	2.5	12	170A105-7
27	3560	19.8	79	0.24	2.1	7.8	170A105-8
50	5280	14.4	117	0.21	1.32	9.2	170A105-9
50	4190	20.5	93	0.16	1.40	5.8	170A105-10
50	3300	18.3	73	0.12	0.99	3.6	170A105-11
115	6070	12.1	135	0.11	0.57	5.3	170A105-12
115	4820	16.4	107	0.081	0.58	3.4	170A105-13
115	3790	21.0	84	0.060	0.56	2.1	170A105-14
115	3030	16.8	67	0.045	0.36	1.3	170A105-15
115	2410	13.5	54	0.035	0.24	0.84	170A105-16

* The standard production tolerance on no-load speed, stall torque and stall current is ±10%. The tolerance on no-load current is +25%. The tolerance on current at rated torque is +15%.

**TYPICAL PERFORMANCE CURVES
 170A105-6 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 EML 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.