2796 Culver Ave., Dayton, Ohio 45429
PH: 937/294-1041 FAX: 294-8336
www.motortech.com

GEARMOTORS
DC PERMANENT MAGNET
MILITARY QUALITY

MODEL FML
BULLETIN 226A120/132

ELECTRICAL SPECIFICATIONS

Voltage: 12, 27, 50, 115 and 180 VDC are standard. Other voltages available. Reverse side of sheet shows complete FML gearmotor data.

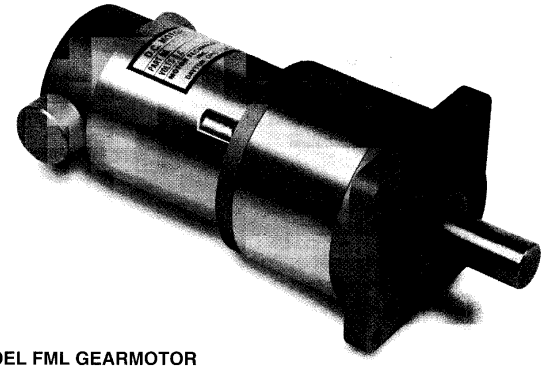
Speed: Motor input speeds up to 6900 rpm can be used to drive this precision planetary geartrain, of ratios from 3.81 to 940.

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 Motor Technology Model FML planetary gearmotor is designed and built for precision, durability and very high torque-to-size performance. Common uses include military, aerospace and medical applications — where the needs for performance and dependability rank high in priority. For pinions, RFI filters, brakes or any modifications you may need, consult with M.T.I. application engineers. See Bulletin 225A105 for additional motor information.



MODEL FML GEARMOTOR

MECHANICAL SPECIFICATIONS

Rating: 0.13 hp with torques to 1200 lb. in.

Gears: Precision cut, heat treated alloy steel.

Bearings: Output shaft supported by two ball bearings to support overhung loads. All planet gears are mounted on anti-friction bearings.

Backlash: Less than 3°.

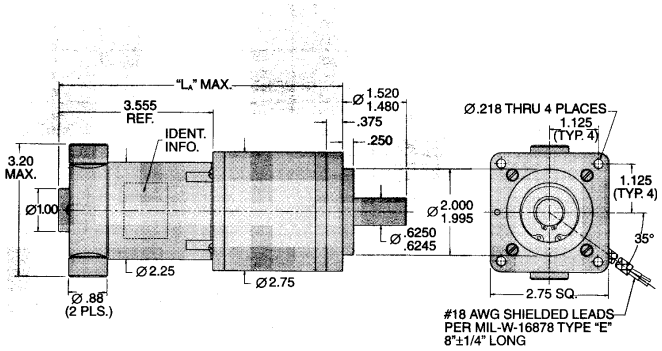
Shaft: Precision ground 8620 alloy steel per QQ-S-624, heat treated and case hardened.

Protection: Aluminum parts finished per MIL-C-5541A. Ring gear and motor housing cadmium plated per QQ-P-416, type 2, class 2.

Lubrication: Motor bearings life lubricated per MIL-G-3278. Gearbox lubricated with grease per MIL-G-23827A. Special lubricants are available.

Weight: 3.68 to 6.55 lbs., depending on ratios.

DIMENSIONS



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BASIC GEARMOTOR DATA — STANDARD PART NUMBERS

SPEED REDUCTION RATIO	MAXIMUM[1] CONT. DUTY TORQUE LB.IN.	TORQUE[2] MULTIPLIER	LENGTH L_A DIMENSION	STANDARD FML GEARMOTOR PART NUMBERS (Add armature dash number; see below.)
3.81	7.75	3.54	5.265	226A120–
5.54	11.3	5.15	5.265	226A121–
14.5	27.3	12.5	5.750	226A122–
21.1	39.8	18.2	5.750	226A123–
30.7	58.0	26.5	5.750	226A124–
55.3	97.3	44.5	6.235	226A125–
80.3	141	64.6	6.235	226A126–
117	206	94.1	6.235	226A127–
170	297	136	6.235	226A128–
306	498	228	7.095	226A129–
445	728	333	7.095	226A130–
647	1058	484	7.095	226A131–
940	1200	703	7.095	226A132–

[1] This rating is for gearbox only. To determine output of any motor-gearbox combination, multiply motor torque by the torque multiplier for that ratio.

[2] Torque multiplier ratio is the gear ratio multiplied by its efficiency.

BASIC FML ARMATURE DATA [3]

INPUT VOLTAGE DC	NO-LOAD SPEED RPM	RATED TORQUE OZ.IN.	STALL TORQUE OZ.IN.	NO-LOAD CURRENT AMPS MAX.	RATED TORQUE CURRENT AMPS	STALL CURRENT AMPS	ARMATURE DASH NUMBERS
12	3855	25	215	1.25	8.39	64.6	–1
27	6900	19	382	.96	5.28	91.5	–2
27	5465	25	303	.76	5.31	57.6	–3
27	4340	33	241	.60	5.38	36.3	–4
27	3445	35	191	.48	4.51	22.9	–5
50	5060	26	281	.38	2.70	26.7	–6
50	4015	35	223	.30	2.84	16.8	–7
50	3185	35	177	.24	2.20	10.6	–8
115	5815	23	323	.19	1.22	15.3	–9
115	4615	30	256	.15	1.24	9.65	–10
115	3665	35	203	.12	1.12	6.08	–11
180	4690	30	260	.10	.78	6.18	–12
180	3800	35	212	.08	.71	3.99	–13
180	3090	35	172	.06	.56	2.57	–14
180	2540	28	141	.05	.37	1.67	–15

[3] For complete FML motor data and tolerances see Bulletin 225A105.

HOW TO SELECT A UNIT

The complete part number must include a standard FML gearmotor part number (above) plus an applicable FML armature dash number from the basic motor data chart (left). Use the following trial and error technique to start:

1. Assume motor speed of 5,000 RPM and divide it by the required output speed to get approximate ratio.
2. From ratios charted above, select closest one.
3. Check maximum torque rating of that ratio with your actual requirement. Adjust ratio and motor speed up or down as needed.
4. Calculate output torque by multiplying motor torque by the "torque multiplier" of the ratio selected.
5. Select armature from voltage, load and speed required.

HOW TO ORDER: Order by standard part number (example: 226A124-6), making sure to include the armature dash number. Note any modifications as exceptions to the standard.