

MM MOTORS

DC Permanent Magnet Motors

A-2000



general design specification

power rating: .01 hp (7.5 W)

voltage: 4 to 50 VDC

weight: Open type - 3.5 ounces

Enclosed type - 5.0 ounces

armature: Dynamically balanced

inertia: 5.2×10^{-5} oz. in. sec.²

electrical time constant: 0.5 milliseconds max

mechanical time constant: 20.0 milliseconds max

typical no load torque: 0.40 oz. in.

protection: Varnish impregnated

shaft: Precision-ground, through-hardened (RC 45-50) 420 stainless steel per ASTM A582. Options: length, smaller diameter, flats, pinions, gears, holes (through or tapped), threaded ends and tapers. Type of steel used may change depending upon variation selected

magnets: Alnico V

bearings: Double shielded, life-lubricated for -55°C to +85°C operation. Special lubricants available for temperature extremes

cables/leads: 8" shielded cable per MIL-C-7078 #22 AWG conductors per MIL-W-16878/4

cover: Open type - aluminum
Enclosed type - brass

frame: Die-cast aluminum

marking: Per MIL-STD-130

life: 1,000 hours continuous duty for 27 VDC units per

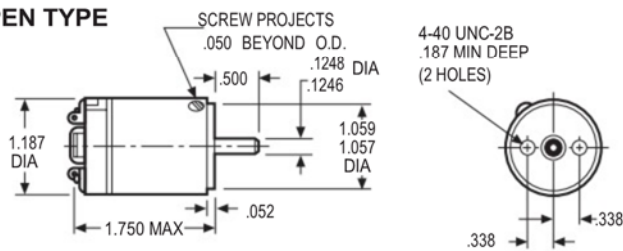
winding temperature rise: 8°C per watt w/8.00" x 8.00" x .25" aluminum heat sink

winding insulation rating: 130°C (higher temperature windings available)

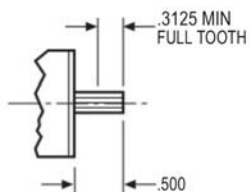
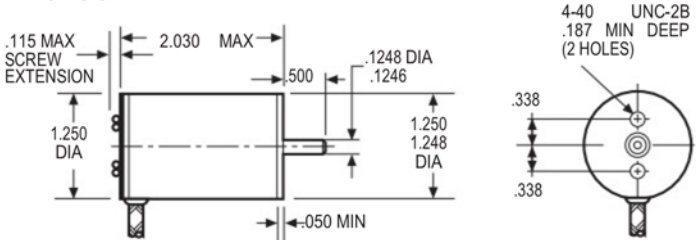
options available:
• Gear train (see A-2030 for details)

Dimensions

OPEN TYPE



ENCLOSED TYPE



PINION DATA: NUMBER OF TEETH - 10
DIAMETRAL PITCH - 96
PRESSURE ANGLE - 20°
MEAS. OVER. .018 DIA
PINS - .1285/.1275
OTHER PINIONS ARE AVAILABLE

A-2000

Standard Part Numbers and Data

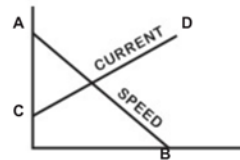
VOLTAGE (VDC)	SPEED no load (rpm)	TORQUE		CURRENT			CONSTANTS		STANDARD PART NO.*			
		max rated (oz. in.)	theoretical stall (oz. in.)	max no load (amps)	max rated load (amps)	** nominal stall (amps)	K _T (oz. in./amp)	** R (ohms)	open type		enclosed type	
									plain shaft	pinion	plain shaft	pinion
6	12,000-14,000	.75	4.6	.80	2.00	9.90	.58	.66	3A998-5	3A1524-5	3A1002-5	3A1525-5
12	18,000-21,400	.50	7.4	.56	1.20	11.80	.77	1.11	3A998-24	3A1524-24	3A1002-24	3A1525-24
12	14,500-17,000	.70	5.9	.50	1.20	7.50	.97	1.75	3A998-3	3A1524-3	3A1002-3	3A1525-3
12	12,400-14,700	.75	4.6	.40	1.20	5.10	1.12	2.56	3A998-21	3A1524-21	3A1002-21	3A1525-21
12	11,000-13,000	1.00	4.6	.35	1.20	4.60	1.26	2.87	3A998-4	3A1524-4	3A1002-4	3A1525-4
24	19,200-22,800	.35	7.4	.30	.60	6.30	1.45	4.17	3A998-7	3A1524-7	3A1002-7	3A1525-7
24	16,000-19,000	.60	5.8	.25	.60	3.80	1.74	6.30	3A998-1	3A1524-1	3A1002-1	3A1525-1
24	11,500-14,000	1.00	4.6	.18	.60	2.10	2.42	11.02	3A998-2	3A1524-2	3A1002-2	3A1525-2
24	10,700-12,700	1.00	3.6	.17	.60	1.60	2.60	15.00	3A998-8	3A1524-8	3A1002-8	3A1525-8
24	9,600-11,400	1.00	2.9	.15	.50	1.10	2.90	21.00	3A998-22	3A1524-22	3A1002-22	3A1525-22
24	8,000-10,000	1.00	2.9	.13	.45	.93	3.48	25.20	3A998-10	3A1524-10	3A1002-10	3A1525-10
24	6,000-7,000	.80	2.3	.08	.30	.55	4.65	42.30	3A998-11	3A1524-11	3A1002-11	3A1525-11
50	14,300-17,000	.70	4.8	.11	.30	1.30	4.06	37.00	3A998-25	3A1524-25	3A1002-25	3A1525-25
50	9,500-11,500	1.00	3.8	.08	.30	.71	6.00	69.00	3A998-16	3A1524-16	3A1002-16	3A1525-16
50	8,000-10,000	1.00	3.0	.07	.20	.50	6.77	98.00	3A998-12	3A1524-12	3A1002-12	3A1525-12
50	6,700-8,000	.80	2.4	.05	.16	.30	8.71	159.00	3A998-15	3A1524-15	3A1002-15	3A1525-15
50	4,600-5,500	.80	1.9	.04	.12	.20	10.83	249.00	3A998-13	3A1524-13	3A1002-13	3A1525-13

**Because of brush drop and field distortion, current and torque indicated will not always be attainable

*When You Order

Units shown above are standard and may be ordered by part number. Remember to include the armature winding dash number. EXAMPLE: 3A998-10

How To Draw Speed Torque Curve



- A no load speed (nominal) (rpm)
- B stall torque (oz. in.)
- C no load current (amps)
- D stall current (amps)

Typical Performance

Part No.: 3A998-10

Voltage: 24 VDC

