

Cleveland Motion Controls







MORE SOLUTIONS FROM US EQUALS MORE SUCCESS FOR YOU.

At Cleveland Motion Controls, we have always believed in giving you more choices. After all, your application is unique, so the servomotor you choose for it should be unique, too. While the competition stacks their shelves with motors and hardware, we pack ours with engineered solutions. The truth is, our shelf contains just about any type of solution you could require, from simple integration components such as brakes, encoders and tachometers, to elaborate breakthrough designs.

In addition to our high power density selection of clean operating, low maintenance servomotors, we can also provide you with a Total Automation Solution including FALCON PAC, Servo Drives and decades of engineering and application support.

Our typical standard integration options include:

A) Custom Connectors Connector Locations Cabling

- B) Multiple Standard Winding Configurations Matched Windings Thermostats
- C) Standard & Custom Shaft Configurations
- D) Hall Sensors
 Standard and Custom Encoders
 Resolvers
 Tachometers
 Brakes
 E) Standard Flange
 Mounting
 NEMA Mounting
 IEC Mounting
 Multiple Gearhead
 Options

Our typical custom engineered options include:

Extended Ambient Temperature Ratings Custom Winding Configurations Special Electromagnetic Design Platforms Specialized Military Coatings Corrosion Resistant Materials Food Grade Materials Custom Bearings Witness Testing IP 67 Sealing We engineered the MDM-5000 high-energy brushless servomotor with advanced design features to deliver the industry's highest available torque density in a compact and versatile platform. MDM-5000 servomotors are available in models that produce stall torque up to 35 to 40% higher than conventional designs. The high output is made possible by cut-core, segmented stator lamination technology contained in a high efficiency heat transfer capsule, high slot-fill windings, and a high flux neodymium magnet array.

Standard models are available in either NEMA or IEC mounting configurations with assemble to order availability as standard. Four sizes – 60mm, 85mm, 110mm and 140mm are available with a continuous stall torque range .5Nm (4.5 lb–in.) to 27.5Nm (243 lb – in.).

Cleveland Motion Controls can quickly customize the MDM-5000 to fit the most challenging applications and requirements. A wide range of windings is available for fine-tuning to specific power supply specifications. We also offer a broad array of brake and gearbox options and custom termination, connectorization, and cabling configurations to facilitate your assembly requirements. Off-the-shelf feedback options include encoders stocked with multiple line counts, Hall sensors, and resolvers.



High Energy Brushless Servomotor Platforms

Key

Continuous Duty

Intermittent Duty

Standard Design Features:

High Energy Neodymium Magnets CE/UL/CUL Compliant Multiple Winding Availability IP 67 Construction Clean Operating, Low Maintenance Brushless Design

Rigid Application Development Process:

Application Review Motion Profile Analysis Magnetic FEA 3D Modeling & Computer Simulation Prototype Design Performance Verification

Platform T060		Multiple Star	ndard and	Platform T0604 Max. Performance					
100	Platform Number	Rated Power W	Cont. Sta lb-in	III Torque NM	Peak 1 lb-in	orque NM	Rotor Ir Ib-in-sec2	nertia** Kg-cm2	8000
	T0601	247	4.4	0.50	22	2.50	0.000135	0.15255	
	T0602	410	7.7	0.87	39	4.40	0.00017	0.1921	හි 3000 2000
	T0603	478	10.5	1.18	52	5.90	0.00024	0.2712	0 1 10 100 1000
	T0604	504	12.4	1.40	62	7.00	0.00031	0.3503	TORQUE (L8-IN) .0113 1.13 TORQUE (NM) 11.3 113
Platform T085	Multiple Star	ndard and	Platform T0854 Max. Performance						
T.S.	Platform Number	Rated Power W	Cont. Sta lb-in	ll Torque NM	Peak 1 Ib-in	orque NM	Rotor Ir Ib-in-sec2	nertia** Kg-cm2	7000 6000 5000
- JUNE	T0851	967	17.7	2.00	57	6.40	0.000825	0.93225	₩ 4000 ₩ 3000
	T0852	1536	31	3.50	103	11.60	0.00147	1.6611	2000
	T0853	1941	43.4	4.90	144	16.30	0.00182	2.0566	1 10 1000
	T0854	2059	53.1	6.00	180	20.40	0.0024	2.712	TORQUE (LB-IN) .113 1.13 TORQUE (NM) 11.3 113
Platform T110		Multiple Standard and Custom Windings Available							
Platform T110		Multiple Star	ndard and	d Custom	Winding	s Availal	ble		Platform T1104 Max. Performance
Platform T110	Platform Number	Multiple Star Rated Power W	ndard and Cont. Sta Ib-in	d Custom II Torque NM	<i>Winding</i> Peak T Ib-in	orque NM	b <i>le</i> Rotor Ir Ib-in-sec2	nertia** Kg-cm2	Platform T1104 Max. Performance
Platform T110	Platform Number T1101	Multiple Star Rated Power W 1543	ndard and Cont. Sta Ib-in 43.3	d Custom III Torque NM 4.90	Winding Peak 1 Ib-in 106	orque NM 12.00	ble Rotor Ir Ib-in-sec2 0.0021	nertia** Kg-cm2 2.373	Platform T1104 Max. Performance
Platform T110	Platform Number T1101 T1102	Multiple Stat Rated Power W 1543 2628	ndard and Cont. Sta Ib-in 43.3 75.2	d Custom III Torque NM 4.90 8.50	Winding Peak 1 Ib-in 106 194	orque NM 12.00 21.90	ble Rotor Ir Ib-in-sec2 0.0021 0.0038	nertia** Kg-cm2 2.373 4.294	Platform T1104 Max. Performance 7000 5000 4000 3000 2000 2000
Platform T110	Platform Number T1101 T1102 T1103	Multiple Star Rated Power W 1543 2628 3175	ndard and Cont. Sta Ib-in 43.3 75.2 99.1	d Custom II Torque NM 4.90 8.50 11.20	Winding Peak 1 Ib-in 106 194 264	orque NM 12.00 21.90 29.80	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059	nertia** Kg-cm2 2.373 4.294 6.667	Platform T1104 Max. Performance
Platform T110	Platform Number T1101 T1102 T1103 T1104	Multiple Stat Rated Power 1543 2628 3175 3722	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125	d Custom III Torque NM 4.90 8.50 11.20 14.1	Winding Peak 1 Ib-in 106 194 264 333	s Availal orque NM 12.00 21.90 29.80 37.60	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008	ertia** Kg-cm2 2.373 4.294 6.667 9.04	Platform T1104 Max. Performance 7000 6000 5000 4000 2000 1 10 1 10 1.13 1.13 TORQUE (IA-40) 11.3 1.13 TORQUE (IA-40) 11.3 1.13 TORQUE (IA-40) 1.13 1.13 1.13 1.13 1.13 TORQUE (IA-40) 1.13 1.13 1.13 1.13 1.13 1.13 1.13 1.13
Platform T110	Platform Number T1101 T1102 T1103 T1104	Multiple Star Rated Power W 1543 2628 3175 3722 Multiple Star	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125 ndard and	d Custom III Torque NM 4.90 8.50 11.20 14.1 14.1	Winding Peak T Ib-in 106 194 264 333 Winding	s Availal orque NM 12.00 21.90 29.80 37.60 s Availal	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008 ble	nertia** Kg-cm2 2.373 4.294 6.667 9.04	Platform T1104 Max. Performance 7000 5000 4000 1000 1 10 113 113 10 TORQUE (LB-M) 100 1000 113 113 Platform T1405 Max. Performance
Platform T110	Platform Number T1101 T1102 T1103 T1104 Platform Number	Multiple Star	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125 ndard and Cont. Sta Ib-in	d Custom III Torque NM 4.90 8.50 11.20 14.1 14.1 d Custom III Torque NM	Winding Peak 1 Ib-in 106 194 264 333 Winding Peak 1 Ib-in	s Availal orque NM 12.00 21.90 29.80 37.60 s Availal orque NM	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008 ble Rotor Ir Ib-in-sec2	ertia** Kg-cm2 2.373 4.294 6.667 9.04 ertia** Kg-cm2	Platform T1104 Max. Performance 7000 5000 4000 1 10 113 1.13 TORQUE (LB-H) 113 1.13 TORQUE (MM) Platform T1405 Max. Performance 5000 4000 5000 1 10 100 100 100 100 100 100
Platform T110	Platform Number T1101 T1102 T1103 T1104 Platform Number T1402	Multiple Star Rated Power W 1543 2628 3175 3722 Multiple Star Rated Power W	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125 ndard and Cont. Sta Ib-in 122.00	d Custom II Torque NM 4.90 8.50 11.20 14.1 d Custom II Torque NM 13.80	Winding Peak 1 Ib-in 106 194 264 333 Winding Peak 1 Ib-in 420	s Availal orque NM 12.00 21.90 29.80 37.60 s Availal orque NM 47.50	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008 ble Rotor Ir Ib-in-sec2 0.01169	hertia** Kg-cm2 2.373 4.294 6.667 9.04 hertia** Kg-cm2 13.2097	Platform T1104 Max. Performance 7000 6000 4000 1 10 113 1.13 TORQUE (IB-N) 113 113 Platform T1405 Max. Performance 6000 4000 113 113 113 113 113 113 113 113
Platform T110	Platform Number T1101 T1102 T1103 T1104 Platform Number T1402 T1403	Multiple Stat Rated Power 1543 2628 3175 3722 Multiple Stat Rated Power W 5500 5780	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125 ndard and Cont. Sta Ib-in 122.00 164.00	d Custom III Torque NM 4.90 8.50 11.20 14.1 d Custom III Torque NM 13.80 18.50	Winding Peak 1 Ib-in 106 194 264 333 Winding Peak 1 Ib-in 420 529	s Availal orque NM 12.00 21.90 29.80 37.60 s Availal orque NM 47.50 71.00	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008 ble Rotor Ir Ib-in-sec2 0.01169 0.01669	ertia** Kg-cm2 2.373 4.294 6.667 9.04 ertia** Kg-cm2 13.2097 18.8597	Platform T1104 Max. Performance 7000 5000 5000 5000 1000 1 10 100 1 10 103 103 103 103 103 103 100 100
Platform T110 Platform T140	Platform Number T1101 T1102 T1103 T1104 Platform Number T1402 T1404	Multiple Stat Rated Power V 1543 2628 3175 3722 Multiple Stat Rated Power V S5500 5780 62200	ndard and Cont. Sta Ib-in 43.3 75.2 99.1 125 ndard and Cont. Sta Ib-in 122.00 164.00 204.00	d Custom III Torque NM 4.90 8.50 11.20 14.1 d Custom III Torque NM 13.80 18.50 22.50	Winding Peak 1 1b-in 194 264 333 Winding Peak 1 1b-in 420 529 840	s Availai orque NM 12.00 21.90 29.80 37.60 s Availai orque NM 47.50 71.00 95.00	ble Rotor Ir Ib-in-sec2 0.0021 0.0038 0.0059 0.008 ble Rotor Ir Ib-in-sec2 0.01169 0.01669 0.02175	nertia** Kg-cm2 2.373 4.294 6.667 9.04 nertia** Kg-cm2 13.2097 18.8597 24.5775	Platform T1104 Max. Performance 7000 5000 5000 1000 1 10 113 113 TORQUE (IB-H) 100 1000

The MDM–5000 internal component design integrates superbly into customer equipment where size and weight are important considerations. The MDM-5000's superior torque density provides for a compact design that easily fits into your equipment, reducing overall size and maximizing rate and position accuracy. Molded in place stator construction maximizes design in flexibility - either molded into typical cylindrical housings or into unique equipment housings that demand specific dimensional requirements. Easier design-in means you don't have to compromise your design to fit our motors.

MDM 5000 Direc	t Drive Sets					
Platform Number	Rated Power W	Cont. Stall T lb - in	orque Range NM	Peak Torq lb - in	ue Range NM	Max. Speed RPM
P055	282 - 591	4.8 - 13.2	0.55 - 1.5	22 - 62	2.5 - 7	8000
P063	319 - 1053	4.8 - 15	0.55 - 1.7	20 - 78	2.3 - 8.9	8000
P065	453 - 1223	7.3 - 19.5	0.83 - 2.2	36 - 84	4.1 - 9.5	8000
P076	449 - 1331	8.8 - 26.5	1.0 - 3.0	55 - 155	6.2 - 17.5	8000
P081	502 - 1725	9.7 - 33.6	1.1 - 3.8	45 - 178	5.1 - 20.1	8000
P105	2230 - 4739	43.3 - 125	4.9 - 14.1	106 - 333	12 - 37.8	6000
P127	903 - 3998	20 - 103	2.3 - 11.7	70 - 430	7.9 - 48.6	6000
P143	2746 - 7904	64.6 - 243	7.3 - 27.5	65 - 1044	28 - 118	6000



Nominal Motor Dimensions



Platform	Frame L mm(I	.ength L -in.)	Fram mm	e square (BD -in.)	Shaft o	extension (S -in.)	Shaft mm	diameter (V -in.)	End Bell width to mm	Connector motor end (R1 -in.)	End Be height t mm	ll Connector to motor end (M1 -in.)	End Bel width to mm	l Connector o motor end (R2 -in.)	End Be height t mm	ll Connector to motor end (M2 -in.)
T0601	112	4.41	58	2.28	30	1.18	14	0.55	36.5	1.44	38	1.5	18	0.7	20	0.79
T0602	131	5.16	58	2.28	30	1.18	14	0.55	36.5	1.44	38	1.5	18	0.7	20	0.79
T0603	150	5.9	58	2.28	30	1.18	14	0.55	36.5	1.44	38	1.5	18	0.7	20	0.79
T0604	169	6.65	58	2.28	30	1.18	14	0.55	36.5	1.44	38	1.5	18	0.7	20	0.79
T0851	130	5.12	85	3.34	40	1.57	19	0.748	46	1.82	38	1.5	18	0.7	20	0.79
T0852	159	6.26	85	3.34	40	1.57	19	0.748	46	1.82	38	1.5	18	0.7	20	0.79
T0853	188	7.4	85	3.34	40	1.57	19	0.748	46	1.82	38	1.5	18	0.7	20	0.79
T0854	217	8.54	85	3.34	40	1.57	19	0.748	46	1.82	38	1.5	18	0.7	20	0.79
T1101	142	5.59	110	4.33	50	1.97	24	0.945	48	1.89	39	1.54	20	0.79	20	0.79
T1102	173	6.81	110	4.33	50	1.97	24	0.945	48	1.89	39	1.54	20	0.79	20	0.79
T1103	204	8.03	110	4.33	50	1.97	24	0.945	48	1.89	39	1.54	20	0.79	20	0.79
T1104	235	9.25	110	4.33	50	1.97	24	0.945	48	1.89	39	1.54	20	0.79	20	0.79
T1402	180.4	7.1	140	5.52	58	2.28	32	1.26	60	2.36	39	1.54	32	1.26	20	0.79
T1403	205.4	8.1	140	5.52	58	2.28	32	1.26	60	2.36	39	1.54	32	1.26	20	0.79
T1404	230.4	9.1	140	5.52	58	2.28	32	1.26	60	2.36	39	1.54	32	1.26	20	0.79
T1405	255.4	10.1	140	5.52	58	2.28	32	1.26	60	2.36	39	1.54	32	1.26	20	0.79

Notes:

Additions including brakes, resolvers, rear shaft extensions, and seals will increase overall length Shaft extension includes motor face pilot

Connectors, connector housings, and mounting flanges may increase overall envelope dimensions Nema and IEC mounting standards available

Motor dimensions subject to change

MDM N-Series

MDM H-Series

Cleveland Motion Controls, Inc.

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MDM5000-DS_0708

MDM 5000 Series

MDM F-Series Food Grade