

STEP MOTOR DRIVE PRODUCTS

Superior
Electric

www.DanaherMotion.com



Danaher Motion and Superior Electric

Superior Electric is a Danaher Motion brand and is recognized worldwide as the leading manufacturer of step motor drives. Over 40 years ago, Superior Electric developed and patented their Superior step motor drive products.

The Superior Electric family of automation products includes:

- Step Motors
- Step Motor Drives
- Motion Controls
- Synchronous Motors

Your partner in Motion Control

Danaher Motion has extensive experience customizing step systems to meet our customer's specific design requirements. Our engineering staff will work with you to achieve your product performance goals. We provide motion control solutions for a wide variety of markets and applications including:

- Semiconductor manufacturing
- Packaging
- Printing
- Industrial Automation
- Testing and measurement

Flexible manufacturing capabilities enable us to deliver specialized product quickly – helping you meet your development cycle objectives.

One of the best reasons to select a Superior Electric product is Danaher Motion's superior service and support. Our products are available globally through the industry's most extensive and experienced distributor network. These trained distributors provide valuable technical assistance, in addition to fast delivery and service. A team of application engineers backs our distributor network. The combined experience of this support system ensures that our customers receive prompt, quality attention to their needs, no matter where they are located.

Further assistance and support is provided on the web at www.DanaherMotion.com. Visitors to this site will find product information, technical specifications, and information on our distribution network. In addition, MOTIONEERING® Motor Selection Software is available as a free download. This Windows® based program makes it easy to select the best stepper system for an application.

www.DanaherMotion.com • 704-588-5693

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Superior Step Drives

Superior drives are designed for maximum versatility and ease of use. The product lineup includes both modular and packaged drives, which can be combined with a variety of modular, or packaged controls offering motor phase current ratings from 0.5 to 6 amperes. An Oscillator/Analog Speed Follower also is offered for applications where the speed of a step motor must be controlled by an analog signal.

Standard Superior Drive Design Features

- Designed for "bulletproof" operation, ease of use
- UL and CUL Recognition
- CE Compliance
- Built-in AC line filter and MOV's
- Optically isolated filtered inputs
- IEC 1000-4-4, standard for electrical fast transient ("noise") immunity
- Wide design margins and component de-rating for long life and greater reliability
- Easy to use connectors (removable screw-clamp type on most models)
- Front panel access for most switches and connectors
- Rugged, industrial-quality enclosures
- Clear, descriptive front panel labels for ease of wiring and operation
- Easy to set up and operate
- Cables and software supplied with most models

MOTIONEERING® Software for Superior Electric, makes the selection process easy.

MOTIONEERING® is a menu driven, Windows®-based program that automatically takes into account load, motor and drive parameters. A wide variety of mechanisms are accommodated including: lead screw, rack and pinion, conveyor (belt and pulley), nip rolls, and rotary, as well as direct data entry.



MOTIONEERING® provides a versatile environment for choosing the optimum system for your application, and is available free of charge.

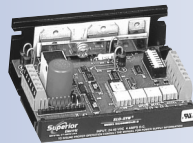
FEATURED PRODUCTS

Modular Drives

Superior Modular Drives are open-frame units or have small enclosures, and require an external DC power source. They are generally used where the drive will become an integral part of the user's system, or in multi-axis systems utilizing a common power supply.

SS2000MD4 and SS2000MD4-M

Pages 4 - 5



SS2000MD4M-0

Pages 4 - 5

MD808 and MD808-128

Pages 6 - 7



Packaged Drives

A packaged drive is a stand-alone unit which operates directly from an AC power source and is packaged in a full enclosure.



SS2000D3/D6

Pages 8 - 9

SS2000D3i/D6i Packaged Motor Controller and Drive

Pages 10 - 11



Modular Drives

SS2000MD4 and SS2000MD4-M



The SS2000MD4 is a modular Translator/Drive for use with two phase step motors. This modular drive provides a low cost solution for a wide range of OEM and multi-axis applications utilizing a single power supply. The SS2000MD4 drive is a small chassis mount unit which can be mounted in

**Low Cost
Solution for
a Wide Range
of OEM &
Multi-axis
Applications**

either a low profile or minimum foot print configuration. This fully short-circuit protected translator-drive is a bipolar, two phase PWM unit which uses high efficiency MOSFET output transistors. Motor current levels are switch selectable up to 3.5 amperes per phase. The SS2000MD4 can operate Superior High Torque, or other step motors in full (200) or half (400) steps (pulse/rev.). For higher resolution applications, the SS2000MD4-M is the right choice. Its resolution is up to 25,000 steps (pulse/rev.).

- For full/half-step (SS2000MD4) or microstep (SS2000MD4-M) operation
- 0.5 to 3.5 amperes motor current (switch selectable)
- Operates KML060 through KML093
- Integral heat sink
- Full short circuit protection
- 24 to 40 VDC bus voltage

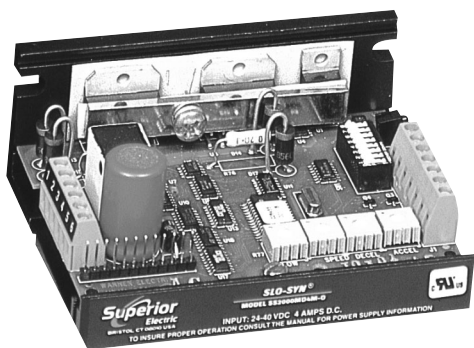


Control signals to both the SS2000MD4 and MD4-M are optically isolated from the drive to minimize electrical noise problems. Several drives can be operated from a single external DC power supply. Only one power supply voltage is needed for both control logic and motor power.

The SS2000MD4 drive is suitable for 4, 6 or 8 lead, NEMA 23 and 34 frame size motors at up to 3.5 amperes per phase.

Additional specifications available at www.DanaherMotion.com

SS2000MD4M-0



- Microprocessor-based Digital Oscillators for accurate speed control
- Built-in potentiometers for acceleration, deceleration, low speed, and run speed
- Switch selectable motor current levels of 1.0 to 3.5 amperes
- Full short circuit protection (phase-to-phase and phase-to-ground)
- Under voltage and transient over-voltage protection
- Efficient thermal design, with built-in heatsink
- Windings off capability
- User selectable automatic current reduction at standstill
- Run speed control from built-in potentiometer or external voltage input

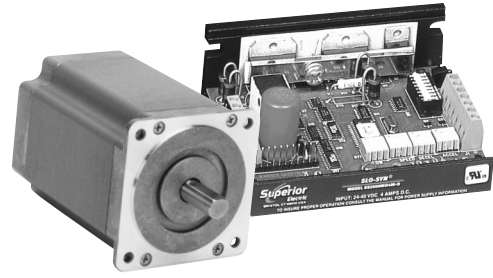
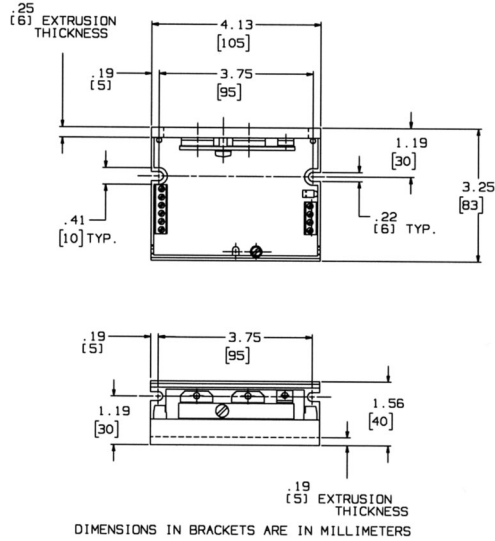


The SS2000MD4M-0 combines all the features of the SS2000MD4M microstepping modular drive and a digital control/oscillator in one compact package. The MD4M-0 is ideal for OEM and multi-axis applications utilizing a single power supply.

Additional specifications available at www.DanaherMotion.com

Modular Drives (Continued)

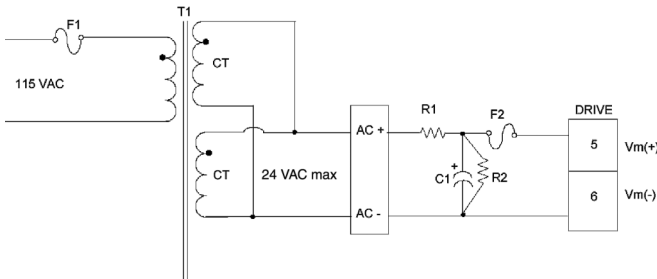
SS2000MD4/MD4-M/MD4M-0 Mounting Diagram



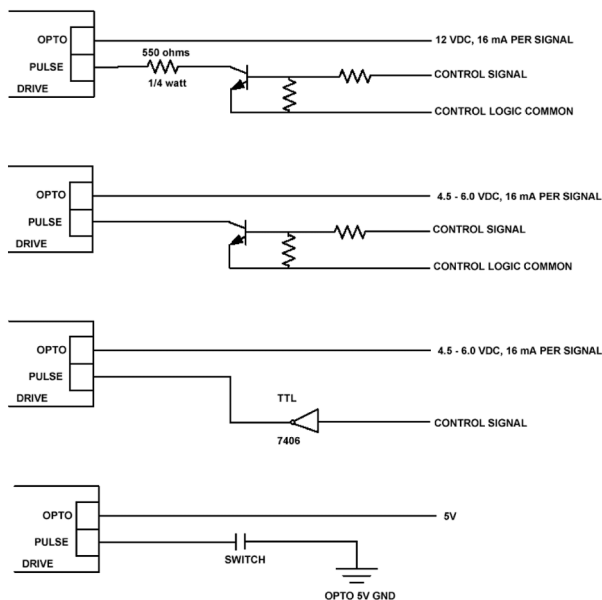
Systems Data

	Motor	Resistance (ohms)	Inductance (mH)	Current Setting (amperes)	Power Supply Current	
					Standstill (amps DC)	Maximum (amps DC)
MOTORS FOR USE WITH THE SS2000MD4	KML060F05	0.64	2.5	2.5	1.0	1.5
	KML061F05	0.85	4.6	2.5	1.2	1.5
	KML061F08	0.33	1.8	3.5	1.0	3.0
	KML062F05	1.30	7.1	2.5	1.0	1.5
	KML062F08	0.49	2.5	3.5	1.2	3.0
	KML063F07	1.00	6.2	3.0	1.5	2.0
	KML063F13	0.28	1.5	3.5	1.0	4.0
	KML091F05	1.10	11.0	2.5	0.0	2.0
	KML091F13	0.19	1.9	3.5	1.0	4.0
	KML092F07	1.10	11.0	3.5	1.5	2.5
MOTORS FOR USE WITH THE SS2000MD4-M	KML092F07	0.27	2.9	3.5	1.0	4.0
	KML093F07	1.40	18.0	2.5	1.2	1.5
	KML060F08	0.28	1.0	3.5	1.0	2.0
	KML060F11	0.19	0.6	3.5	1.0	2.0
	KML061F05	0.85	4.6	2.5	1.2	1.5
	KML061F08	0.33	1.8	3.5	1.0	3.0
	KML062F05	1.30	7.1	3.0	1.0	2.5
	KML062F13	0.20	0.85	3.5	1.0	4.0
	KML063F07	1.00	6.2	3.0	1.5	2.0
	KML063F13	0.28	1.5	3.5	1.0	4.0
MOTORS FOR USE WITH THE SS2000MD4M-0	KML091F05	1.10	11.0	3.0	1.0	2.0
	KML091F13	0.19	1.9	3.5	1.0	4.0
	KML092F07	1.10	11.0	3.5	1.5	2.5
	KML092F13	0.27	2.9	3.5	1.0	4.0
	KML060F08	0.28	1.0	3.5	1.0	2.0
	KML060F11	0.19	0.6	3.5	1.0	2.0
	KML061F05	0.85	4.6	2.5	1.2	1.5
	KML061F08	0.33	1.8	3.5	1.0	3.0
	KML062F05	1.30	7.1	3.0	1.0	2.5
	KML062F13	0.20	0.85	3.5	1.0	4.0
MOTORS FOR USE WITH THE SS2000MD4M-0	KML063F07	1.00	6.2	3.0	1.5	2.0
	KML063F13	0.28	1.5	3.5	1.0	4.0
	KML091F05	1.10	11.0	3.0	1.0	2.0
	KML091F13	0.19	1.9	3.5	1.0	4.0
	KML092F07	1.10	11.0	3.0	1.5	2.5
	KML092F13	0.27	2.9	3.5	1.0	4.0

Power Input



OPTO Input Optional Wiring



For motor dimensions and torque speed curves, see pages 12 - 15.

Ordering Information

To order SS2000MD4, SS2000MD4-M, SS2000MD4M-0 and 222705-001 (30 VDC, 3.5 amp power supply kit for use with all three MD4 models), call **704-588-5693**.

Modular Drives (Continued)

MD808 and MD808-128



**Affordable
Versatility,
with
Micro-Stepping,
Higher Current,
Higher Voltage,
Active
Stabilization**

Superior MD808 and MD808-128 Microstep Drive Modules are dependable and affordable options for a wide variety of OEM, single-axis, and multi-axis applications.

Both models in this series, feature a bi-polar PWM drive for maximum torque over a wide range of speed. Designed for DC input, MD808 and MD808-128 drives operate from a single 20 to 80 VDC power supply to help you conserve on space and cost.

The MD808 provides up to 20,000 micro-steps per revolution for smooth, low speed operation. For even greater resolution and flexibility, choose model MD808-128, featuring up to 25,600 micro-steps per revolution.

If precise operation, customized micro-stepping ranges, rugged dependability, and solid cost-efficiency are high on your list of priorities, once again, we have the answer.

Additional specifications available at www.DanaherMotion.com

- Switch selectable Micro Steps
MD808 — Full, 1/2, 1/5, 1/10, 1/20, 1/25, 1/50, 1/100
MD808-128 — Full, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128
- Motor current from 3.0 through 8 amperes, switch selectable with auto-reduce at standstill
- Operates KML060 thru KML113
- Active stabilization for improved motor performance
- 24 to 80 VDC bus Voltage
- UL Recognized, CE Compliant

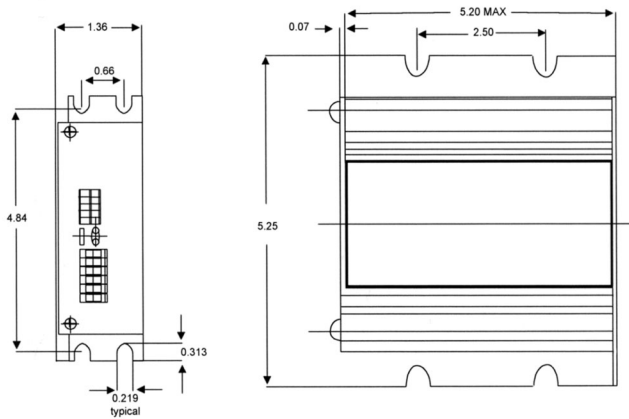


Features:

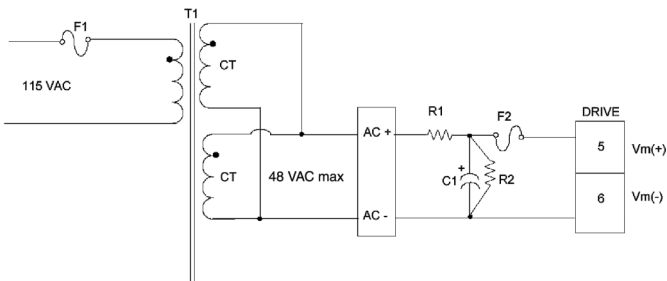
- 8 Amp 80 VDC modular drive
- Bi-polar PWM two phase step motor drive with active mid-range stabilization
- Micro-stepping to 20,000 steps per revolution (MD808) or 25,600 steps per revolution (MD808-128)
- Compact size
- Full short circuit protection (phase-to-phase and phase-to-ground)
- Under voltage and transient overvoltage protection
- Thermal protection
- Single input voltage (20 to 80 VDC)
- Patented sturdy all-aluminum case and efficient thermal design minimize heat sink requirements
- Optically isolated inputs
- Switch selectable current levels from 3 thru 8 amperes; no external resistors or jumpers required
- Switch selectable step resolution
- Reduce Current and Windings Off inputs
- Switch Selectable Auto Current Reduction
- Optimal motor performance
- LED fault and power indicators
- Removable Screw Clamp Connectors
- Optional heat sink available
- Bookcase or Flat Mount

Modular Drives (Continued)

MD808/MD808-128 Mounting Diagram



Power Input



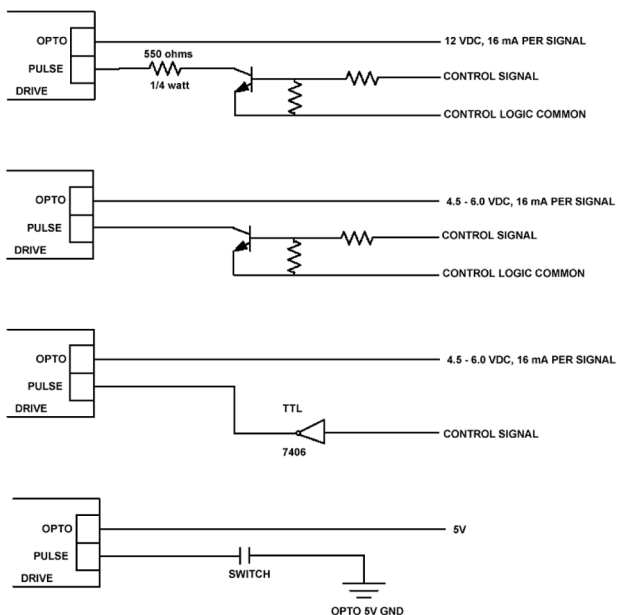
Systems Data

MOTORS FOR USE WITH THE MD808 AND MD808-128

Motor	Resistance (ohms)	Inductance (mH)	Current Setting (amperes)	Power Supply Current	
				Standstill (amps DC)	Maximum (amps DC)
KML060F05	0.64	2.5	3.0	1.0	2.0
KML061F05	0.85	4.6	3.0	1.0	2.0
KML062F07	0.75	3.4	4.0	1.0	3.5
KML062F13	0.21	0.9	8.0	1.5	4.5
KML063F07	1.00	6.2	4.0	1.0	2.0
KML063F13	0.28	1.5	8.0	2.0	4.5
KML091F07	0.77	7.5	4.0	1.5	4.0
KML091F13	0.19	1.9	8.0	1.5	4.0
KML092F13	0.27	2.9	8.0	2.0	4.5
KML093F10	0.63	8.3	7.0	2.0	4.5
KML093F14	0.36	4.5	8.0	2.0	4.5
KML111F09	0.93	15.8	6.0	1.5	3.0
KML111F11	0.58	10.1	7.0	1.8	3.5
KML112F10	1.00	22.0	7.0	1.8	3.5
KML112F16	0.60	12.8	8.0	2.0	4.5
KML113F10	1.30	31.0	8.0	2.0	4.5
KML113F16	0.50	11.00	8.0	2.0	4.5

For motor dimensions and torque speed curves, see pages 12 - 15.

OPTO Input Optional Wiring



Ordering Information

To order MD808, MD808-128 and 221576-001 (heat sink for use with both MD808 models - recommended for use at 4 amps and above), call **704-588-5693**.

Packaged Drives

SS2000D3/D6



High Performance with the Simplicity of AC Input

The Superior SS2000D3/D6 Packaged Drives are the most reliable and versatile drives for a wide variety of applications.

Both models allow for switch selection of full-step, half-step or microstep, providing the highest performance at high speeds (up to 50,000 microsteps per revolution).

These versatile systems will work with Superior High Torque Motors in sizes NEMA 23, NEMA 34 and NEMA 42.

Additional specifications available at www.DanaherMotion.com

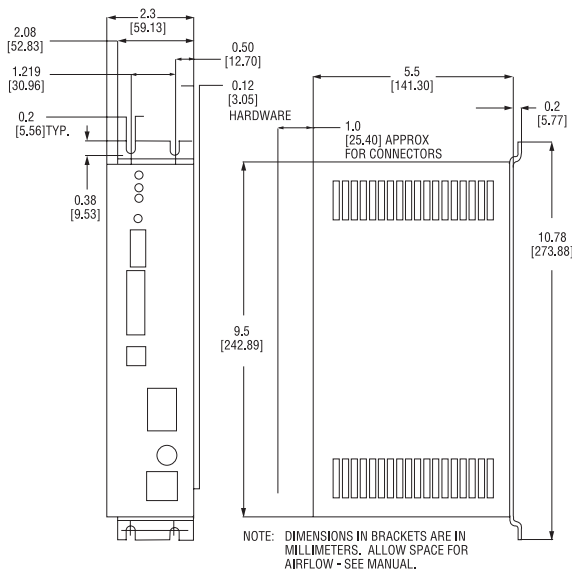
- Switch selection of full/half-steps or microstep resolution up to 50,000 pulses/rev.
- Switch selectable motor current from 1 through 6 amperes for the SS2000D6, 0.5 through 3 amperes for the SS2000D3
- SS2000D3 operates KML061-KML093 motors
- SS2000D6 operates KML091-KML113 motors
- "Bullet-proof", fully protected design

- 120 VAC input, 170 VDC bus voltage
- UL Recognized for use in US and Canada
- CE Compliant
- Bipolar Chopper Drive
- Latched short circuit protection (phase-to-phase and phase-to-ground)
- Unlatched under voltage and transient over voltage protection

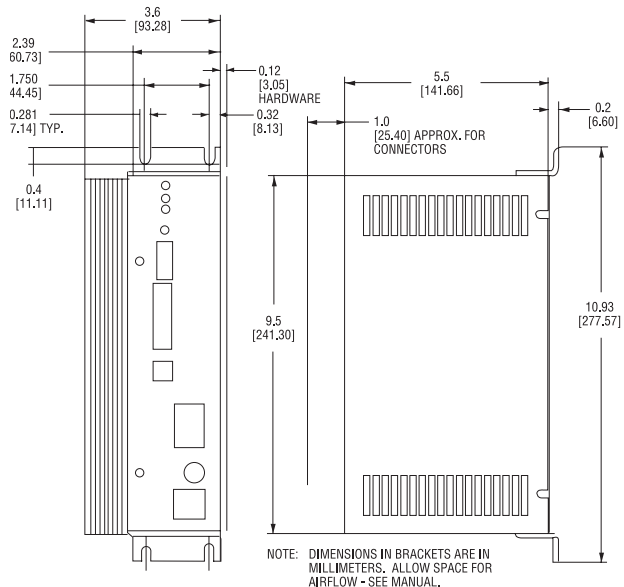
- Optically isolated inputs
- Boost Current, Reduce Current and Windings of functions
- Drive Ready Output
- Built-in AC line filter plus MOV
- Self-test function



SS2000 D3 Mounting Diagram

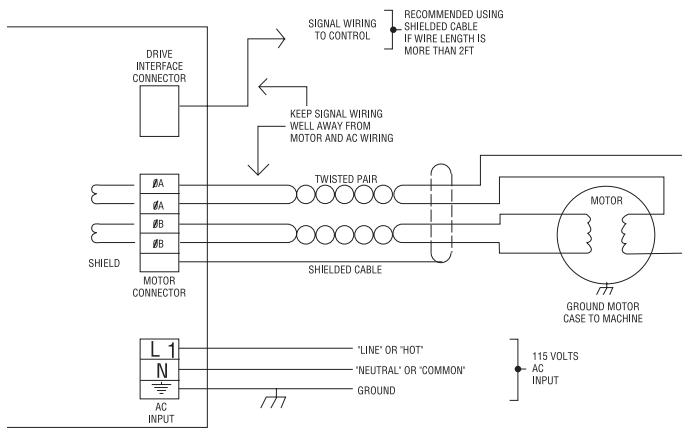


SS2000 D6 Mounting Diagram



Packaged Drives (Continued)

SS2000 D3/D6 Wiring Practices



Ordering Information

To order SS2000D3 and SS2000D6 products, call **704-588-5693**.

Systems Data

MOTORS FOR USE WITH THE SS2000 D3/D6					
Motor	Resistance (ohms)	Inductance (mH)	Current Setting (amperes)	Power Supply Current	
				Standstill (amps DC)	Maximum (amps DC)
KML061F02*	3.60	16.0	1.0	0.25	0.50
KML062F03*	3.00	16.0	1.5	0.25	0.50
KML063F03*	4.10	24.0	2.0	0.50	1.00
KML091F05	1.10	11.0	3.0	0.75	1.50
KML091F07	0.77	7.5	3.0	0.75	1.50
KML092F07	1.10	11.0	3.0	0.75	1.50
KML092F13	0.27	2.9	6.0	1.50	4.00
KML093F07	1.40	18.0	3.0	0.75	1.50
KML093F10	0.63	8.3	6.0	1.50	3.00
KML093F14	0.36	4.5	6.0	1.50	3.00
KML111F05	2.30	40.4	3.0	0.75	1.50
KML111F09	0.93	15.8	6.0	1.50	3.00
KML112F08	1.50	31.2	4.0	1.00	2.00
KML112F10	1.00	22.0	6.0	1.50	3.00
KML112F13	0.41	8.4	6.0	1.50	3.00
KML113F10	1.30	31.0	6.0	1.50	3.00
KML113F12	0.82	19.60	6.0	1.50	3.00

For motor dimensions and torque speed curves, see pages 12 - 15.

* Consult factory for NEMA 23 Torque Speed Data.

Packaged Drives (Continued)

SS2000D3i/D6i Packaged Motor Controller and Drive



The Convenience of a Controller and Microstepping Drive in One Compact Package

SS2000D3i/D6i series of step motor positioning systems provide a microstepping controller and drive in one convenient compact package.

The SS2000D3i/D6i step motor systems include all of the superior features of the SS2000D3/D6 drive, and a position controller with BASIC-like programming language in one package.

These versatile systems will work with Superior High Torque Motors in sizes NEMA 23, NEMA 34 and NEMA 42.

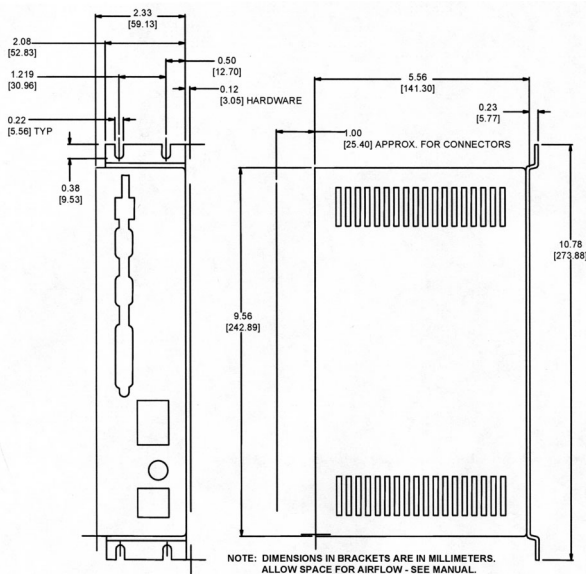
The integral step motor drive utilizes a unique digital microstepping current control technique to provide smooth motor performance.

Additional specifications available at www.DanaherMotion.com

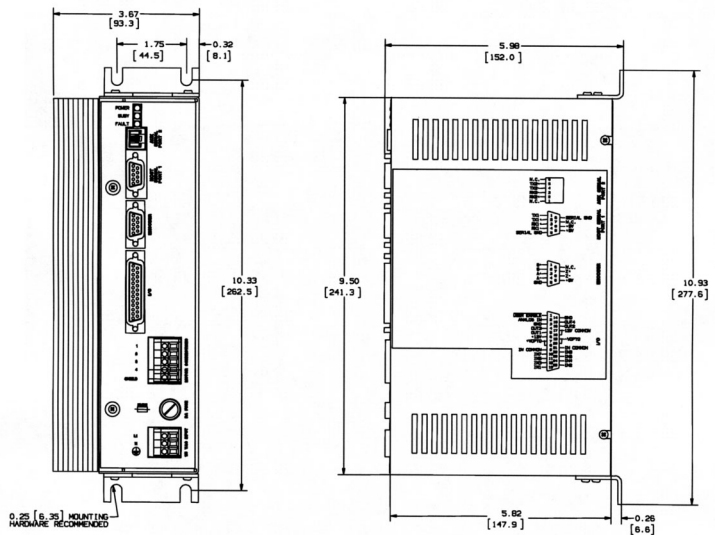
- Packaged drive, control and power supply
- 120V ±10% AC input
- Utilizes robust SS2000D3/D6 drive design
- Motor phase current selectable up to 6 amps (D6i)
- Simplified motor selection
- Short-circuit Protection
- Optically isolated I/O, 8 Inputs, 4 Outputs
- Windows based software development utility for easy programming on any PC
- Easy to use BASIC-like programming language
- Additional 8 inputs and 4 outputs, non-isolated
- 16 bit microprocessor
- Encoder input for closed loop operation (differential or single ended)
- One 0-10V analog input (10 bit resolution)
- BCD interface with separate connector
- 2 serial ports, RS232 / 485 up to 38K baud
- Built-in AC line filter and MOV's for transient protection
- Patent-pending digital microstepping current control
- Smoother motor operation at low speeds
- Meets IEC 1000-4-4 standard for electrical fast transient ("noise") immunity
- UL recognized and CE compliant
- Optional terminal board for easy wiring



SS2000 D3i Mounting Diagram

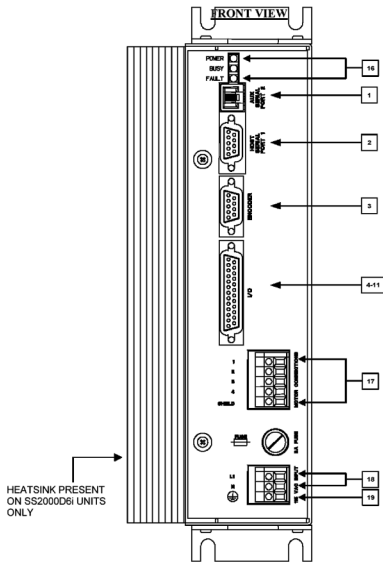


SS2000 D6i Mounting Diagram

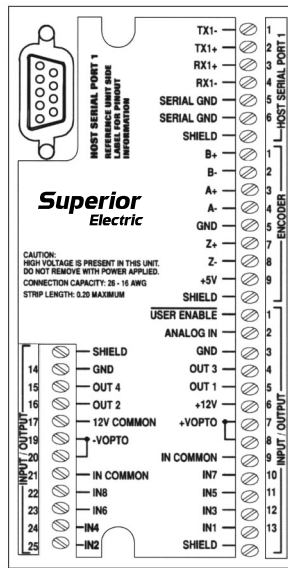


Packaged Drives (Continued)

SS2000 D3i/D6i Hardware Connections



SS2000 D3i/D6i External Wiring Card



Ordering Information

To order SS2000D3i, SS2000D6i, SS2000D3i-WOC (without serial cable), SS2000D6i-WOC (without serial cable), 221156-011 (10 ft RS232 serial cable) and XWC (external wiring card), call 704-588-5693.

Systems Data

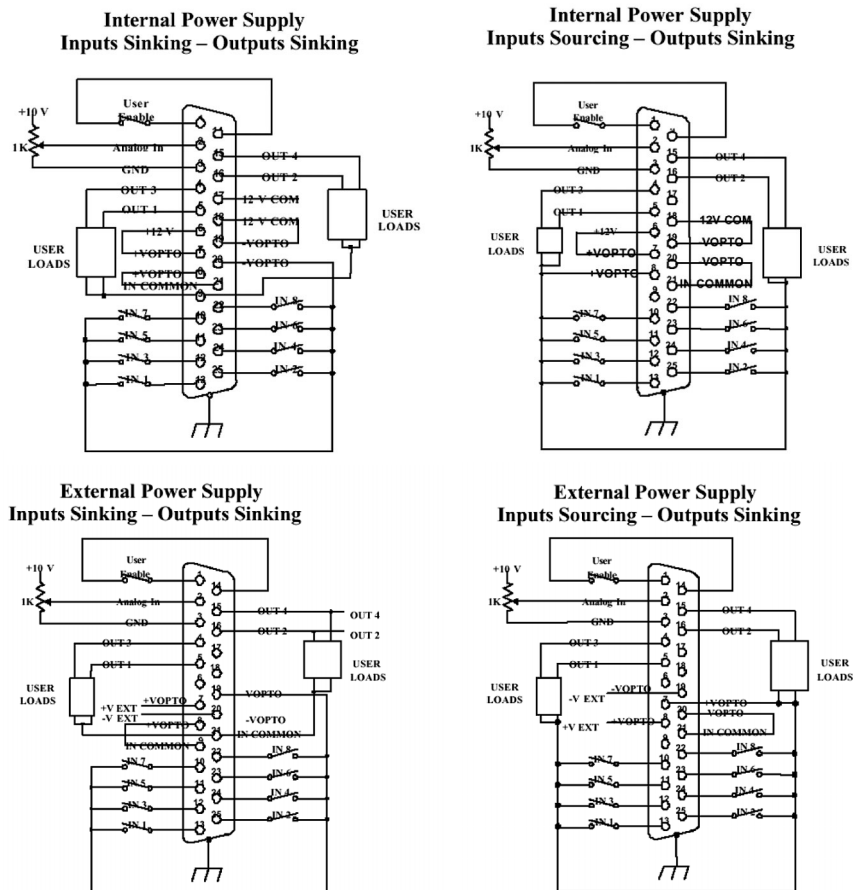
MOTORS FOR USE WITH THE SS2000 D3i/D6i					
Motor	Resistance (ohms)	Inductance (mH)	Current Setting (amperes)	Power Supply Current	
				Standstill (amps DC)	Maximum (amps DC)
KML061F02*	3.60	16.0	1.0	0.25	0.50
KML062F03*	3.00	16.0	1.5	0.25	0.50
KML063F03*	4.10	24.0	2.0	0.50	1.00
KML091F05	1.10	11.0	3.0	0.75	1.50
KML091F07	0.77	7.5	3.0	0.75	1.50
KML092F07	1.10	11.0	3.0	0.75	1.50
KML092F13	0.27	2.9	6.0	1.50	4.00
KML093F07	1.40	18.0	3.0	0.75	1.50
KML093F10	0.63	8.3	6.0	1.50	3.00
KML093F14	0.36	4.5	6.0	1.50	3.00
KML111F05	2.30	40.4	3.0	0.75	1.50
KML111F09	0.93	15.8	6.0	1.50	3.00
KML112F08	1.50	31.2	4.0	1.00	2.00
KML112F10	1.00	22.0	6.0	1.50	3.00
KML112F13	0.41	8.4	6.0	1.50	3.00
KML113F10	1.30	31.0	6.0	1.50	3.00
KML113F12	0.82	19.60	6.0	1.50	3.00



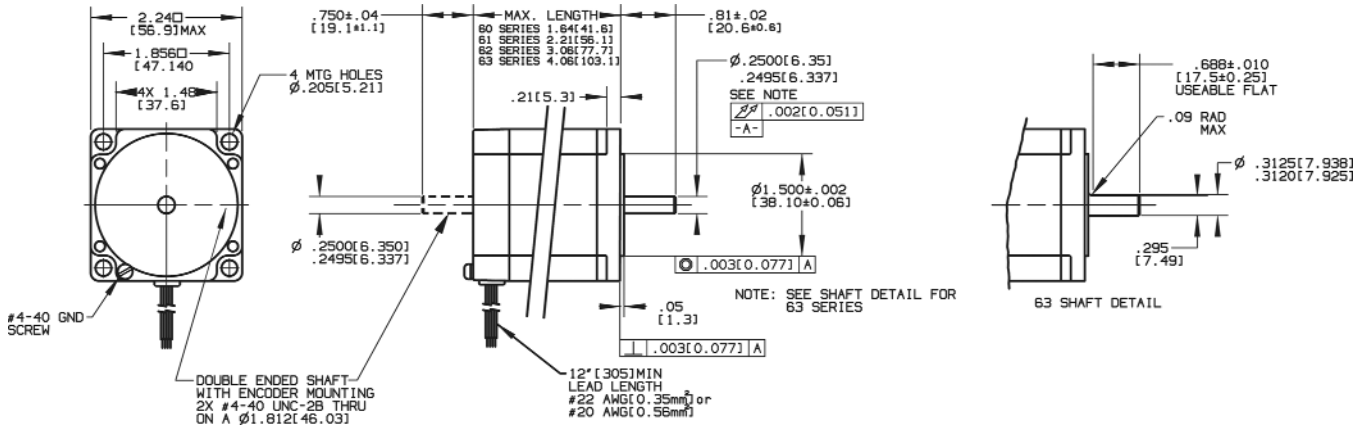
For motor dimensions and torque speed curves, see pages 12 - 15.

* Consult factory for NEMA 23 Torque Speed Data.

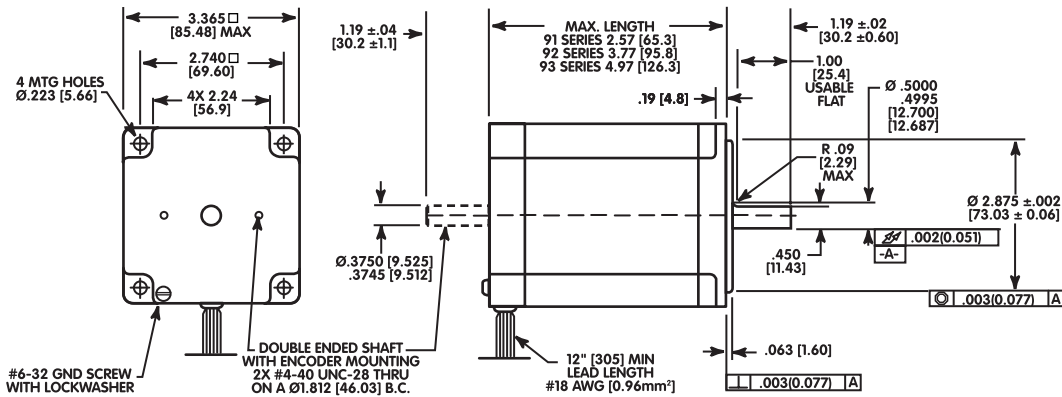
SS2000 D3i/D6i Input/Output Connections



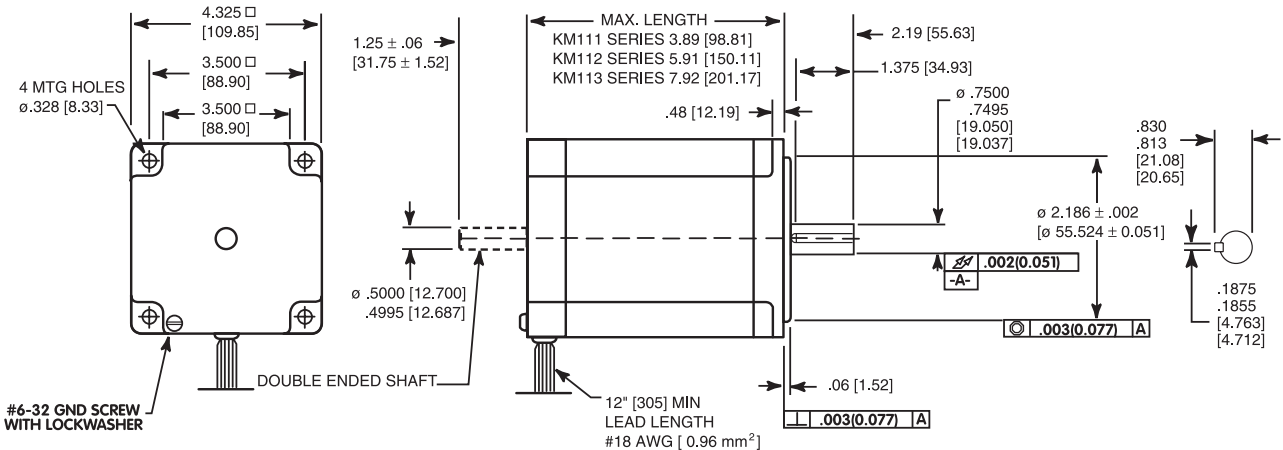
KM06: Motor Dimensions



KM09: Motor Dimensions



KM11: Motor Dimensions

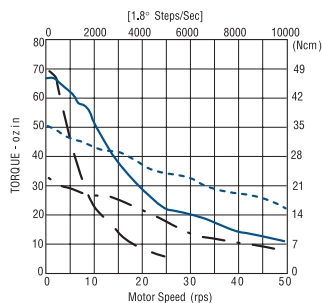


NOTE: Please refer to the Superior Electric Step Motor Catalog for detailed motor specifications and information. Located at www.DanaherMotion.com

KM06

24 V Bipolar - Full Step

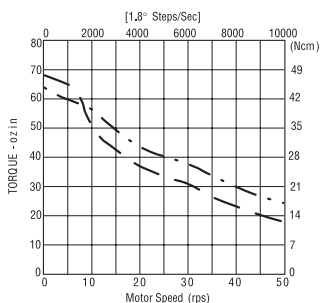
24 volt data measured with SS2000MD4 drive.



KM060F02 - 1.0 A peak **KM060F05 - 1.0 A peak**
KM060F05 - 2.5 A peak **KM060F11 - 3.5 A peak**

36 V Bipolar - Full Step

36 volt data measured with SS2000MD4 drive.



KM060F05 - 2.5 A peak **KM060F08 - 3.5 A peak**

72 V Bipolar - Microstep

72 volt data measured with MD808 drive

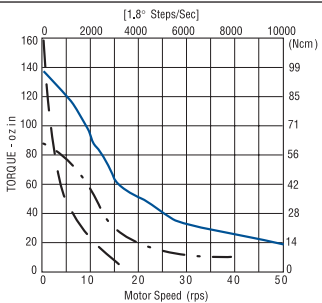
- The curves do not show system resonances which will vary with system mechanical parameters.
- Duty cycle is dependent on torque, speed, drive parameters, and heat sink conditions. Maximum case temperature is 100°C.

KM060

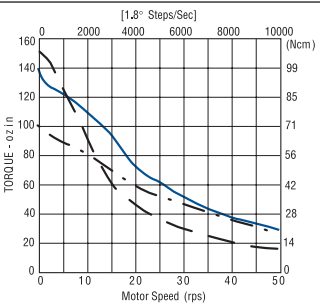
KM061

KM062

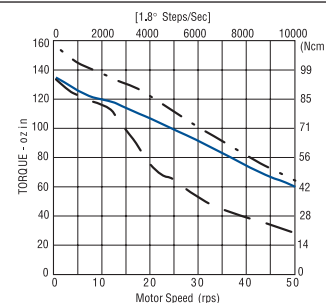
KM063



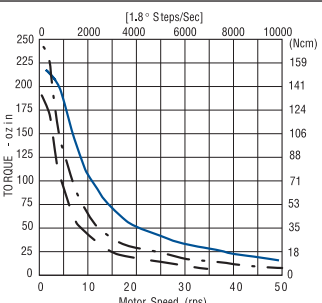
KM061F02 - 1.0 A peak **KM061F04 - 1.0 A peak**
KM061F08 - 3.5 A peak



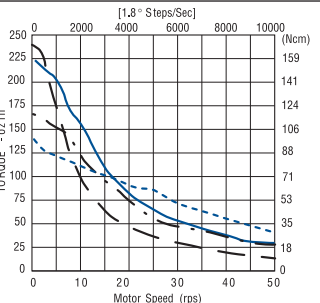
KM061F05 - 2.5 A peak **KM061F08 - 2.5 A peak**
KM061F08 - 3.5 A peak



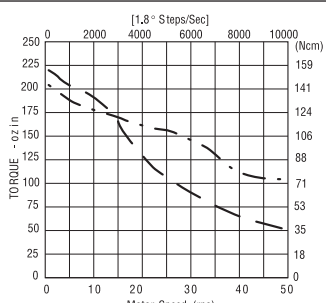
KM061F05 - 3.0 A peak **KM061F08 - 6.0 A peak**
KM061F11 - 7.5 A peak



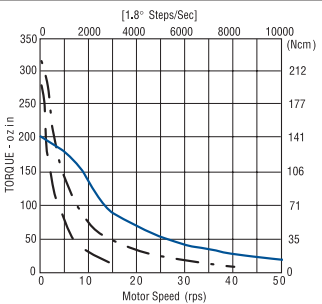
KM062F03 - 1.0 A peak **KM062F05 - 2.5 A peak**
KM062F08 - 3.5 A peak



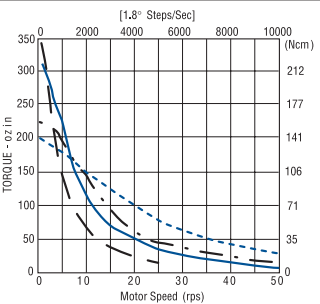
KM062F05 - 2.5 A peak **KM062F08 - 2.5 A peak**
KM062F08 - 3.5 A peak **KM062F13 - 3.5 A peak**



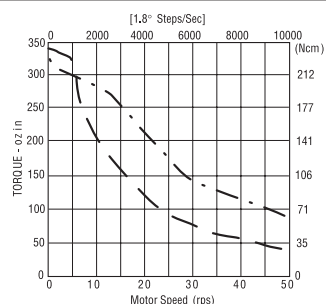
KM062F07 - 4.0 A peak **KM062F13 - 8.0 A peak**



KM063F03 - 1.0 A peak **KM063F07 - 3.0 A peak**
KM063F13 - 3.5 A peak



KM063F04 - 2.0 A peak **KM063F08 - 2.5 A peak**
KM063F07 - 3.0 A peak **KM063F13 - 3.5 A peak**



KM063F07 - 4.0 A peak **KM063F13 - 8.0 A peak**

KM09

36 V Bipolar - Full Step

36 volt data measured with the SS2000MD4 Modular Drive.

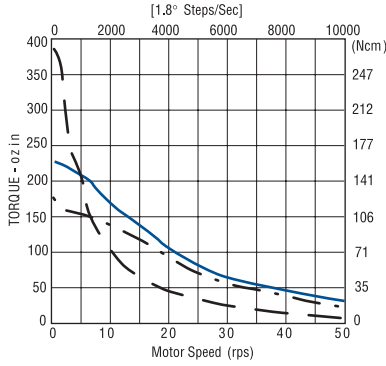
72 V Bipolar - Microstep

72 volt data measured with MD808 Modular Drive

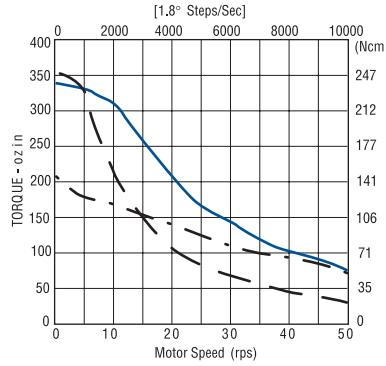
170 V Bipolar - Microstep

170 volt data measured with SS2000D3, D3i, D6, or D6i Packaged Drive

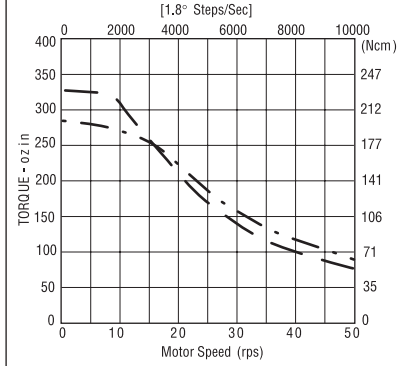
KM091



KM091F05 - 2.5 A peak KM091F13 - 2.5 A peak
KM091F13 - 3.5 A peak

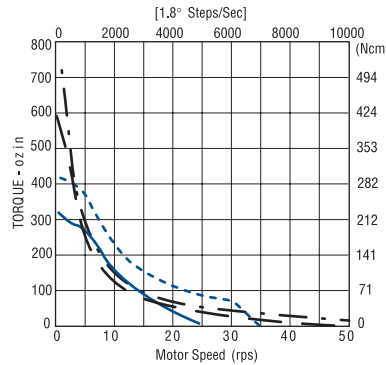


KM091F07 - 4.0 A peak KM091F13 - 4.0 A peak
KM091F13 - 8.0 A peak

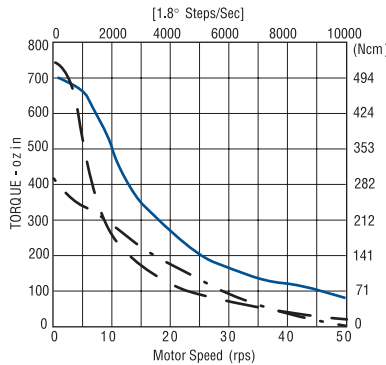


KM091F05 - 3.0 A peak KM091F07 - 3.0 A peak

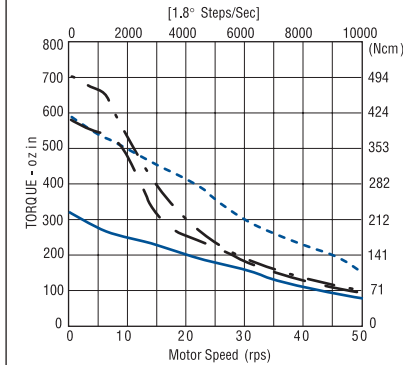
KM092



KM092F07 - 2.5 A peak KM092F07 - 3.5 A peak
KM092F13 - 2.5 A peak KM092F13 - 3.5 A peak

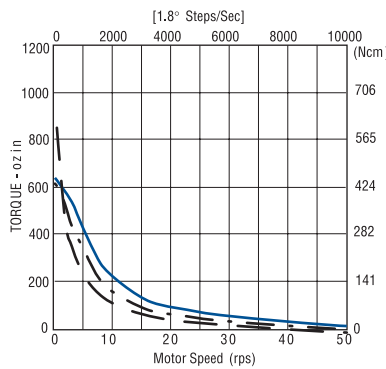


KM092F07 - 4.0 A peak KM092F13 - 4.0 A peak
KM092F13 - 8.0 A peak

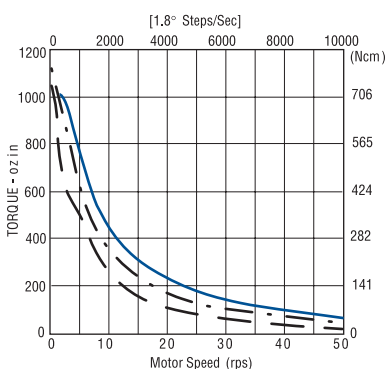


KM092F07 - 3.0 A peak KM092F07 - 4.0 A peak
KM092F13 - 3.0 A peak KM092F13 - 6.0 A peak

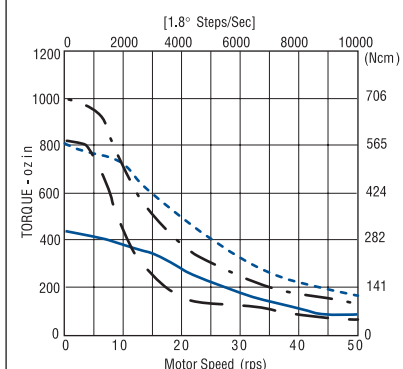
KM093



KM093F07 - 2.5 A peak KM093F10 - 2.5 A peak
KM093F14 - 3.5 A peak



KM093F07 - 4.0 A peak KM093F10 - 7.0 A peak
KM093F14 - 8.0 A peak



KM093F07 - 3.0 A peak KM093F10 - 6.0 A peak
KM093F14 - 3.0 A peak KM093F14 - 6.0 A peak

- The curves do not show system resonances which will vary with system mechanical parameters.
- Duty cycle is dependent on torque, speed, drive parameters, and heat sink conditions. Maximum case temperature is 100°C.

KM11

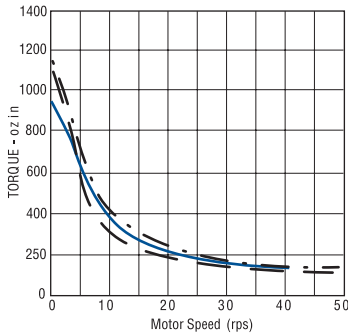
72 V Bipolar - Microstep

72 volt data measured with MD808 Modular Drive

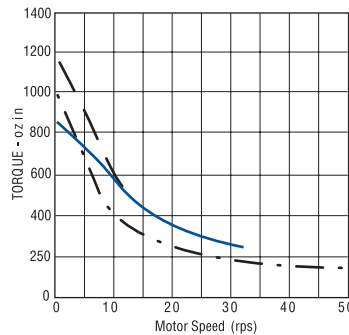
170 V Bipolar - Microstep

170 volt data measured with SS2000D3, D3i, D6, or D6i Packaged Drive

KM111

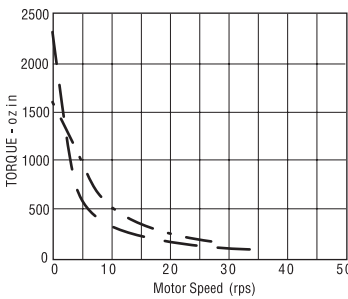


KM□111F09 - 5.7 A peak - or KM□111E12 series
 KM□111F11 - 7.1 A peak - or KM□111E08 parallel
 KM□111F11 - 5.7 A peak - or KM□111E08 parallel

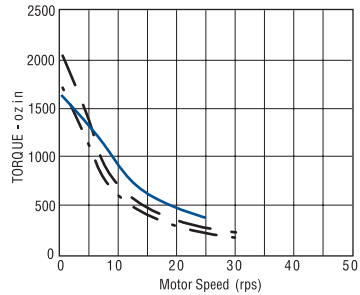


KM□111F09 - 6 A peak - or KM□111E12 series
 KM□111F05 - 3 A peak - or KM□111E08 series
 KM□111F09 - 4 A peak - or KM□111E12 series

KM112

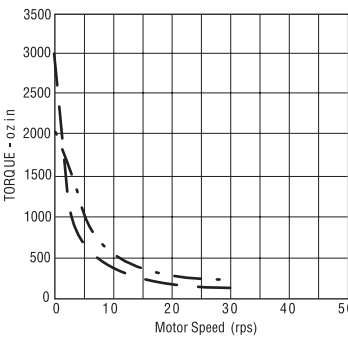


KM□112F10 - 7.1 A peak - or KM□112E14 series
 KM□112F16 - 7.1 A peak - or KM□112E22 series

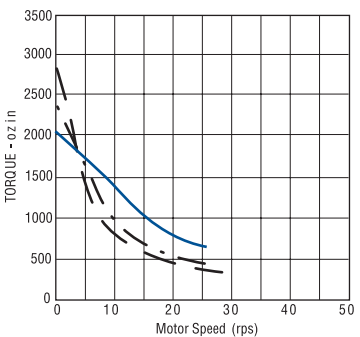


KM□112F10 - 6 A peak - or KM□112E14 series
 KM□112F08 - 4 A peak - or KM□112E11 series
 KM□112F13 - 6 A peak - or KM□112E09 parallel

KM113

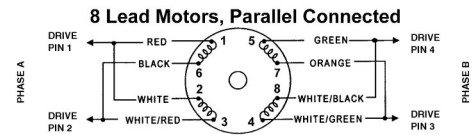
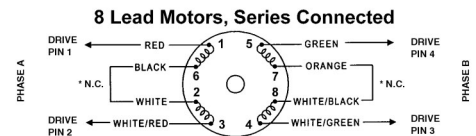
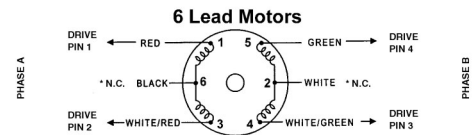
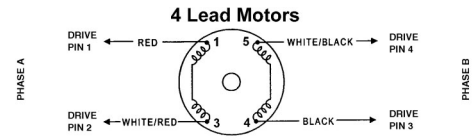


KM□113F10 - 7.1 A peak - or KM□113E14 series
 KM□113F16 - 7.1 A peak - or KM□113E11 parallel



KM□113F10 - 6 A peak - or KM□113E14 series
 KM□113F12 - 6 A peak - or KM□113E09 parallel
 KM□113F20 - 8 A peak - or KM□113E14 parallel

Connection Diagrams



NOTE: Numbers identify terminal board connections.

* These leads must be insulated and isolated from other leads or grounds.

NOTE: Please refer to the Superior Electric Step Motor Catalog for detailed motor specifications and information.

Located at:
www.DanaherMotion.com

- The curves do not show system resonances which will vary with system mechanical parameters.
- Duty cycle is dependent on torque, speed, drive parameters, and heat sink conditions. Maximum case temperature is 100°C.

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