Allen-Bradley

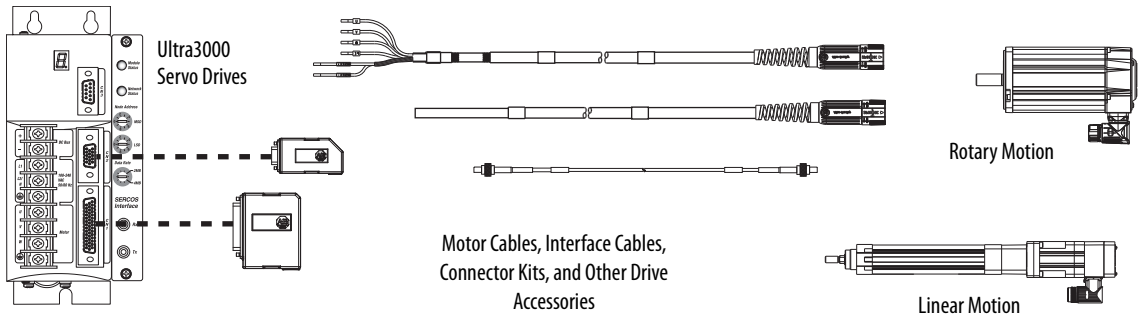
Ultra3000 Drive Systems

Catalog Numbers

2098-DSD-005, 2098-DSD-010, 2098-DSD-020, 2098-DSD-005X, 2098-DSD-010X, 2098-DSD-020X, 2098-DSD-005-SE, 2098-DSD-010-SE, 2098-DSD-020-SE, 2098-DSD-005-DN, 2098-DSD-010-DN, 2098-DSD-020-DN, 2098-DSD-005X-DN, 2098-DSD-010X-DN, 2098-DSD-020X-DN,

2098-DSD-030, 2098-DSD-075, 2098-DSD-150, 2098-DSD-030X, 2098-DSD-075X, 2098-DSD-150X, 2098-DSD-030-SE, 2098-DSD-075-SE, 2098-DSD-150-SE, 2098-DSD-030-DN, 2098-DSD-075-DN, 2098-DSD-150-DN, 2098-DSD-030X-DN, 2098-DSD-075X-DN, 2098-DSD-150X-DN,

2098-DSD-HV030, 2098-DSD-HV050, 2098-DSD-HV100, 2098-DSD-HV150, 2098-DSD-HV220, 2098-DSD-HV030X, 2098-DSD-HV050X, 2098-DSD-HV100X, 2098-DSD-HV150X, 2098-DSD-HV220X, 2098-DSD-HV030-SE, 2098-DSD-HV050-SE, 2098-DSD-HV100-SE, 2098-DSD-HV150-SE, 2098-DSD-HV220-SE, 2098-DSD-HV030-DN, 2098-DSD-HV050-DN, 2098-DSD-HV100-DN, 2098-DSD-HV150-DN, 2098-DSD-HV220-DN, 2098-DSD-HV030X-DN, 2098-DSD-HV050X-DN, 2098-DSD-HV100X-DN, 2098-DSD-HV150X-DN, 2098-DSD-HV220X-DN



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LISTEN. THINK. SOLVE.®

Introduction

This publication assumes that the drive family for your application is Ultra™ 3000 and that you have already determined your motor catalog number. To revisit those decisions, refer to the Kinetix® Motion Control Selection Guide, publication GMC-SG001, or Motion Analyzer software.

The purpose of this publication is to assist you in identifying the drive system components and accessory items you'll need for your Ultra3000 drive and motor/actuator combination. Diagrams in this publication illustrate how many of the common drive accessory items are used in a typical system, but refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for detailed accessory descriptions and specifications.

Also provided are drive/motor or drive/actuator system combinations that include the following:

- Motor/cable combinations table
- Drive and motor/actuator performance specification table
- Torque/speed curves with each motor matched to the drive with optimum performance

Performance specification data and curves reflect nominal system performance of a typical system with motor/drive at rated ambient temperature and line voltage. For additional information on ambients, line conditions, and valid combinations not shown in this publication, refer to Motion Analyzer software.

IMPORTANT These system combinations do not include all possible motor/drive combinations. Please refer to Motion Analyzer software to verify compatibility. Download is available at http://www.ab.com/motion/software/analyzer.html.

Determine What You Need

For each Ultra3000 drive system, you need to know the drive and motor/actuator catalog numbers to determine the motor power and feedback cable catalog numbers. Interface cables and connector kits are also required. Optional equipment includes Bulletin 2090 AC line filter, shunt resistor, and others. Example diagrams of the required equipment listed on this page are shown on page 4.

Ultra3000 Drive Modules

Ultra3000 Drives Cat. No.	Input Voltage	Output Power (continuous)	Output Current (continuous)	Features
2098-DSD-005*x*-*xx*	200V Class	0.5 kW	1.8 A, rms	• Requires an external 12…24V power supply for proper operation of the digital I/O. • Requires an external +5V power supply to maintain logic power when the AC line voltage is removed. (1)
2098-DSD-010*x*-*xx*		1.0 kW	3.5 A, rms	
2098-DSD-020*x*-*xx*		2.0 kW	7.1 A, rms	
2098-DSD-030*x*-*xx*		3.0 kW	10.6 A, rms	Requires an external 12…24V power supply for proper operation of the digital I/O.
2098-DSD-075*x*-*xx*		7.5 kW	24.7 A, rms	
2098-DSD-150*x*-*xx*		15 kW	45.9 A, rms	
2098-DSD-HV030*x*-*xx*	400V Class	3.0 kW	5.0 A, rms	
2098-DSD-HV050*x*-*xx*		5.0 kW	7.8 A, rms	
2098-DSD-HV100*x*-*xx*		10 kW	16.3 A, rms	
2098-DSD-HV150*x*-*xx*		15 kW	24.0 A, rms	
2098-DSD-HV220*x*-*xx*		22 kW	33.2 A, rms	

(1) Use external 24V I/O power supply to feed drive-mounted breakout boards (catalog numbers 2090-U3CBB-DM12 and 2090-U3CBB-DM44) with 24…5V DC converter.

Ultra3000 Servo Drive Communication Interface

Drive Type	Drive Cat. No.	Command Interface
SERCOS interface drive	2098-DSD-*xxx*-SE and 2098-DSD-HV*xxx*-SE	Fiber-optic SERCOS module
Analog drive	2098-DSD-*xxx* and 2098-DSD-HV*xxx*	Analog command interface
Digital drive with DeviceNet interface	2098-DSD-*xxx*-DN and 2098-DSD-HV*xxx*-DN	DeviceNet communication interface
Indexing drive	2098-DSD-*xxx*X and 2098-DSD-HV*xxx*X	Standalone control
Indexing DeviceNet interface drives	2098-DSD-*xxx*X-DN and 2098-DSD-HV*xxx*X-DN	

Refer to the Kinetix Servo Drives Specifications Technical Data, publication GMC-TD003, for detailed descriptions and additional specifications for the Ultra3000 drive family.

Required Drive Accessories

Drive Accessory	Description	Cat. No.
24V power supply	12…24V DC for control power and motor brakes.	1606-XL*xxx*
Drive-mounted breakout boards (required for flying-lead cables)	Motor feedback (CN2) connections.	2090-UXBB-DM15
	Serial interface (CN3) connections.	2090-UXBB-DM09
	I/O (CN1) connections. These kits apply to all Ultra3000 drives and (catalog numbers 2098-DSD-005, 2098-DSD-010, and 2098-DSD-020) in applications where 5V DC control power (if required) is user-supplied.	2090-U3BB-DM12 (1)
		2090-U3BB2-DM44
	I/O (CN1) connections. These kits apply to only 2098-DSD-005, 2098-DSD-010, and 2098-DSD-020 drives in applications where a 24…5V DC converter for control power is required.	2090-U3CBB-DM12 (1)
		2090-U3CBB-DM44
SERCOS fiber-optic cables (required as needed for SERCOS applications)	Plastic, in-cabinet duty.	2090-SCEP*x-x*
	Plastic, on-machine duty.	2090-SCNP*x-x*
	Plastic, outdoor and conduit duty.	2090-SCVP*x-x*
	Glass, outdoor and conduit duty.	2090-SCVG*x-x*
Serial interface cable (required for non-SERCOS applications)	Ultra3000 serial interface to personal computer.	2090-UXPC-D09*xx*
Motor power and feedback cables	Refer to the specific drive/motor combination for the motor cables required for your system.	

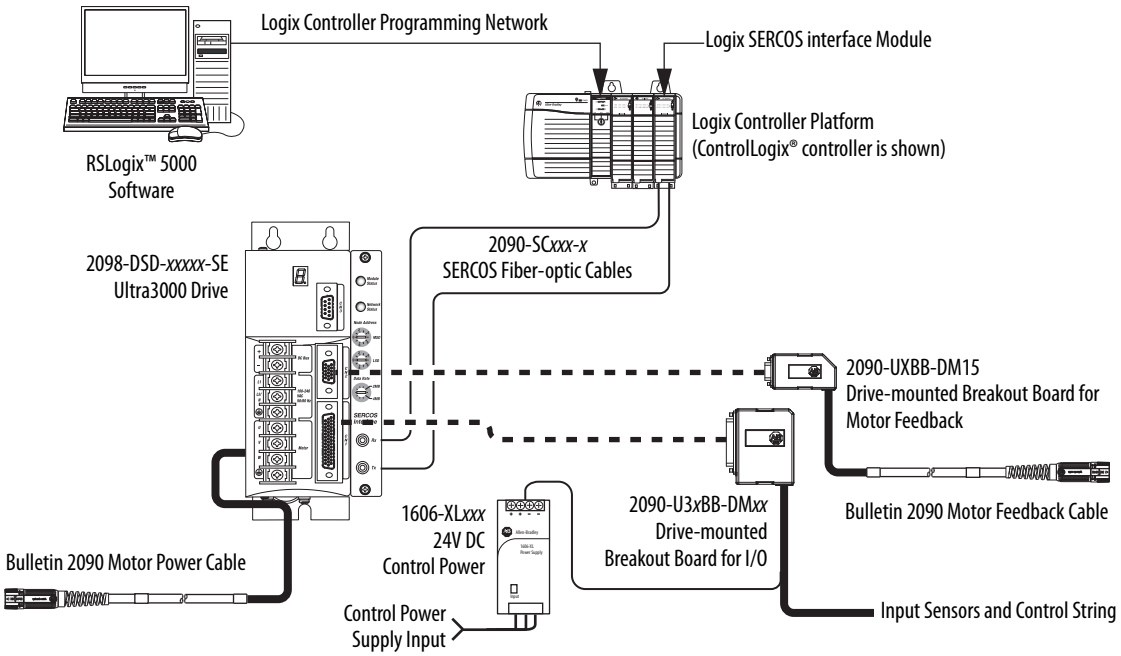
(1) The 12-pin board is intended for use with SERCOS drives, but may be used in non-SERCOS applications with minimal I/O requirements.

Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for detailed descriptions and specifications of these servo drive accessories.

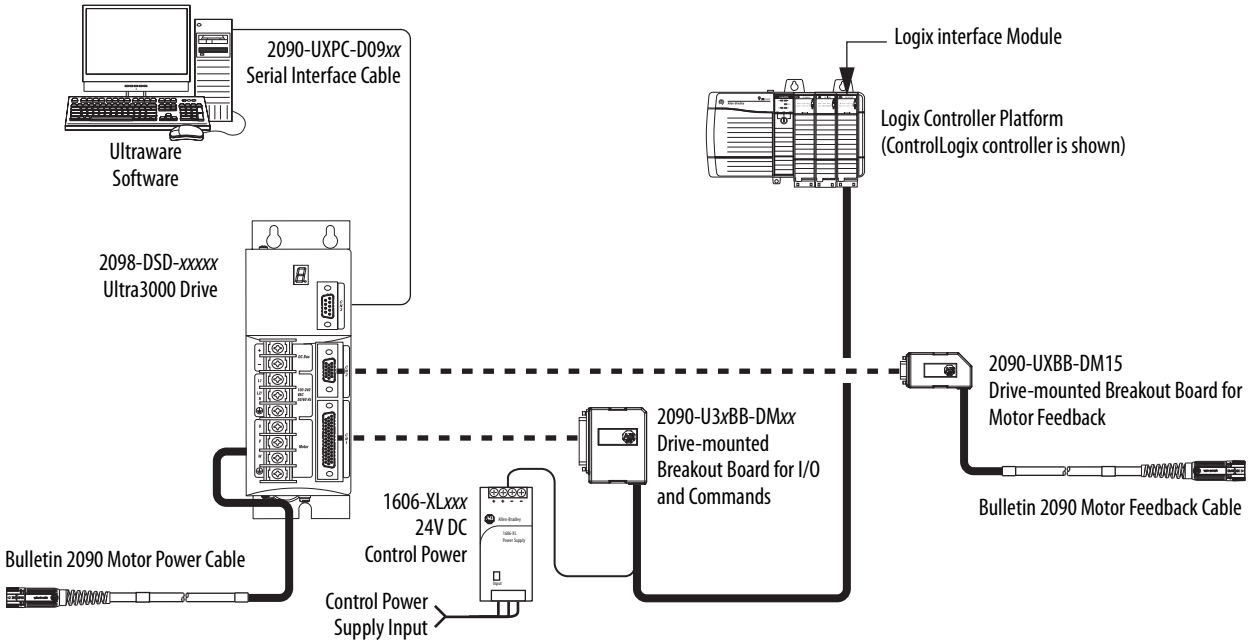
Ultra3000 System Examples

These system examples illustrate how the required drive modules and accessories are used in a typical system.

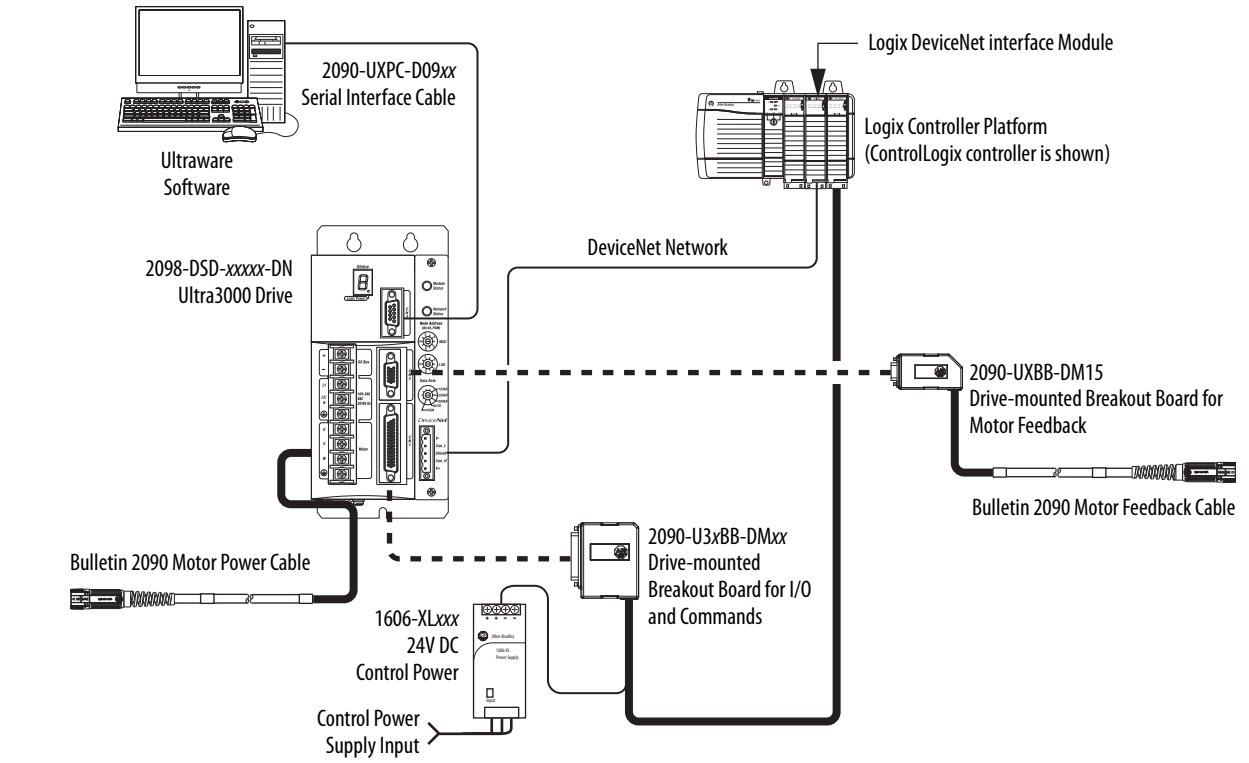
Ultra3000 System Example (SERCOS interface)



Ultra3000 System Example (analog or indexing)



Ultra3000 System Example (DeviceNet interface)

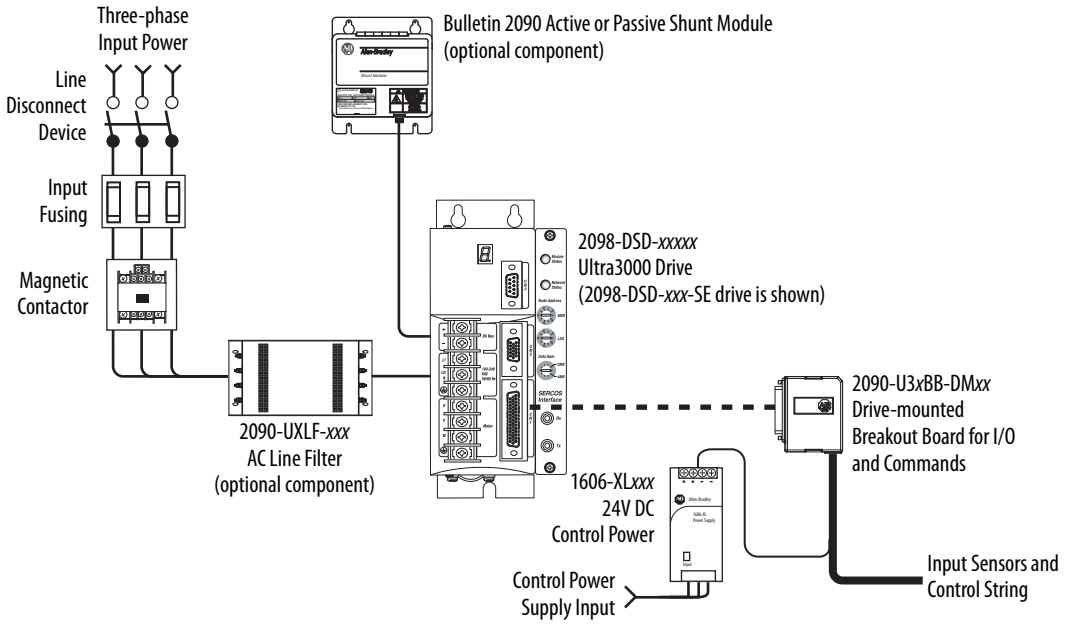


Optional Drive Accessories

Drive Accessory	Description	Cat. No.
Drive to 1756-M02AE module interface cable	Single-axis (CN1) flying-lead drive to Logix module cable.	2090-U3CC-D44*xx*
	Two-axis (CN1) pre-wired drive to Logix module cable.	2090-U3AE-D44*xx*
Drive-mounted breakout board for serial interface (applies to flying-lead cables as an alternative to serial interface cable)	9-pin (CN3) breakout board for serial interface.	2090-UXBB-DM09
Panel-mounted breakout boards (applies to flying-lead cables as an alternative to drive-mounted breakout boards)	DIN rail mounted terminal block and cable for 15-pin (CN2) motor feedback connections.	2090-UXBK-D15*xx*
	DIN rail mounted terminal block and cable for 44-pin (CN1) I/O connections.	2090-U3BK-D44*xx*
2090 AC line filters	AC line conditioning for EMC. Applies to 200V-class drives.	2090-UXLF-*xxx*
	AC line conditioning for EMC. Applies to 400V-class drives.	2090-UXLF-HV*xxx*
2090 shunt modules	Applies to 2098-DSD-HV030, 2098-DSD-HV050, and 2098-DSD-HV100 drives. (1)	2090-SR*xxx-xx*
	Applies to 2098-DSD-075 and 2098-DSD-150 drives.	2090-UCSR-P900
	Applies to 2098-DSD-030 drives.	9101-1183
	Applies to 2098-DSD-005, 2098-DSD-010, and 2098-DSD-020 drives.	2090-UCSR-A300
Resistive brake module (RBM)	Physically and electrically separate the drive power output from its corresponding motor.	2090-XB*xxx-xx*
RBM interface cables	Motor power, RBM to drive.	2090-UXNRB-10F1P3
		2090-UXNRB-8F1P4
		2090-UXNRB-6F1P5
External auxiliary encoder	Allen-Bradley® sine/cosine and incremental external encoders.	Bulletin 842A, 844D, 845H, and 845T

(1) Refer to Rockwell Automation Encompass™ partners for 2098-DSD-HV150 and 2098-DSD-HV220 passive shunt solutions.

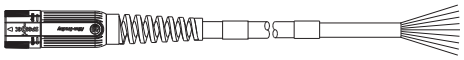
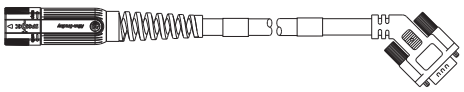
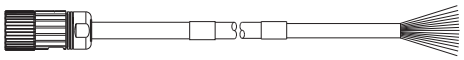
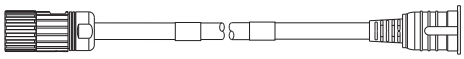
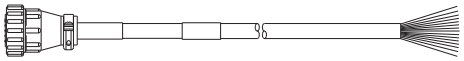
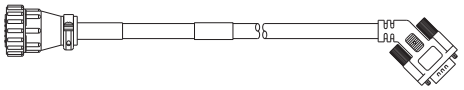
Ultra3000 Input Power Example



Motor-end cable connector kits, for use when building your own cables, are also available. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for detailed descriptions and specifications of optional servo drive accessories.

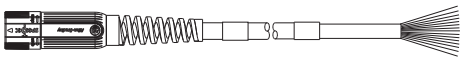
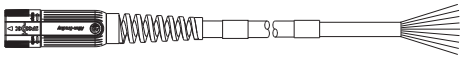
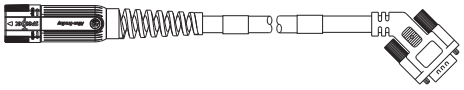
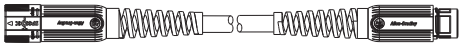
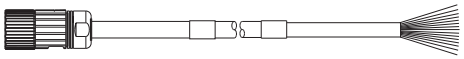
2090-Series Motor/Actuator Cables Overview

Feedback Cable Descriptions (standard, non-flex)

Standard Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CFBM7DF-CEAA*xx*	• Drive-end flying-leads (DF) • High-resolution or resolver applications (CE)			SpeedTec DIN (M7)
2090-CFBM7DD-CEAA*xx*	• Drive-end 15-pin connector (DD) • High-resolution or resolver applications (CE)			
2090-XXNFMF-S*xx*	• Drive-end flying-leads • High-resolution or incremental applications			Threaded DIN (M4)
2090-CFBM4E2-CATR	• Drive-end bayonet (E2), transition (TR) cable (1) • Motor-end threaded DIN (M4) • All feedback types (CA)			
2090-CFBM6DF-CBAA*xx*	• Drive-end flying-leads (DF) • High-resolution, battery backup or Incremental applications (CB)			Circular Plastic (M6)
2090-CFBM6DD-CCAA*xx*	• Drive-end 15-pin connector (DD) • Incremental applications only (CC)			

(1) Threaded DIN connector (motor end) and bayonet connector for 2090-XXNFMP-S*xx* cable.

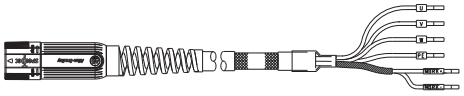
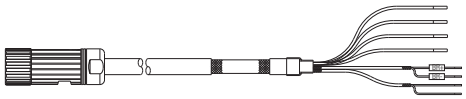
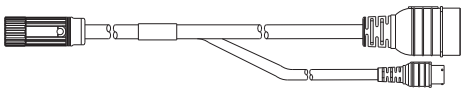
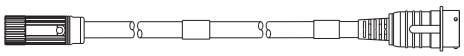
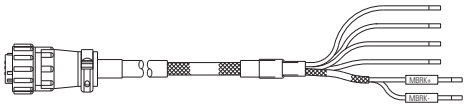
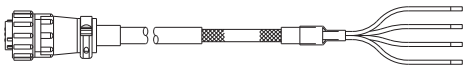
Feedback Cable Descriptions (continuous-flex)

Continuous-flex Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CFBM7DF-CDAF*xx*	• Drive-end flying-leads (DF) • High-resolution or incremental applications (CD)			SpeedTec DIN (M7)
2090-CFBM7DF-CEAF*xx*	• Drive-end flying-leads (DF) • High-resolution or resolver applications (CE)			
2090-CFBM7DD-CEAF*xx*	• Drive-end 15-pin connector (DD) • High-resolution or resolver applications (CE)			
2090-CFBM7E7-CDAF*xx*	• Drive-end (male) connector, extension (E7) (1) • Motor-end SpeedTec DIN cable plug (M7)			
2090-CFBM7E7-CEAF*xx*				
2090-CFBM4DF-CDAF*xx*	• Drive-end flying-leads • High-resolution or incremental applications			Threaded DIN (M4)

(1) SpeedTec DIN connector (motor end) and male connector for extending SpeedTec or threaded DIN cable.

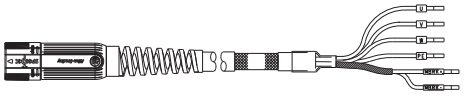
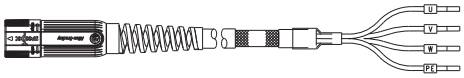
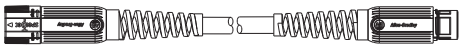
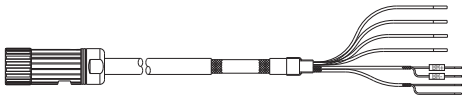
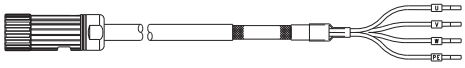
IMPORTANT Feedback cables with the CE designation, for example 2090-CFBM7DF-CEAA*xx*, are intended for high-resolution encoder or resolver applications and have fewer conductors than feedback cables with the CD designation, for example 2090-CFBM7DF-CDAF*xx*, which are intended for high-resolution or incremental encoder applications.

Power/Brake Cable Descriptions (standard, non-flex)

Standard Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CPBM7DF-*xx*AA*xx*	• Drive-end flying-leads (DF) • Power/brake wires (PB)			SpeedTec DIN (M7)
2090-CPWM7DF-*xx*AA*xx*	• Drive-end flying-leads (DF) • Power wires only (PW)			
2090-XXNPMF-*xx*S*xx*	• Drive-end flying-leads • Power/brake wires			Threaded DIN (M4)
2090-CPBM4E2-*xx*TR	• Drive-end bayonet (E2), transition (TR) cable (1) • Motor-end threaded DIN (M4) • Power/brake wires (PB)			
2090-CPWM4E2-*xx*TR	• Drive-end bayonet (E2), transition (TR) cable (1) • Motor-end threaded DIN (M4) • Power wires only (PW)			
2090-CPBM6DF-16AA*xx*	• Drive-end flying-leads (DF) • Power/brake wires (PB)			Circular Plastic (M6)
2090-CPWM6DF-16AA*xx*	• Drive-end flying-leads (DF) • Power wires only (PW)			

(1) Threaded DIN connector (motor end) and bayonet connector for 2090-XXNFMP-S*xx* cable.

Power/Brake Cable Descriptions (continuous-flex)

Continuous-flex Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CPBM7DF-*xx*AF*xx*	• Drive-end flying-leads (DF) • Power/brake wires (PB)			SpeedTec DIN (M7)
2090-CPWM7DF-*xx*AF*xx*	• Drive-end flying-leads (DF) • Power wires only (PW)			
2090-CPBM7E7-*xx*AF*xx*	• Drive-end (male) connector, extension (E7) (1) • Motor-end SpeedTec DIN cable plug (M7)			
2090-CPBM4DF-*xx*AF*xx*	• Drive-end flying-leads (DF) • Power/brake wires (PB)			Threaded DIN (M4)
2090-CPWM4DF-*xx*AF*xx*	• Drive-end flying-leads (DF) • Power wires only (PW)			

(1) SpeedTec DIN connector (motor end) and male connector for extending SpeedTec or threaded DIN cable.

Ultra3000 (200V class) Drives with MP-Series Low Inertia Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with MP-Series™ low-inertia motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

IMPORTANT The MP-Series low-inertia motors on this page are equipped with DIN connectors (specified by 7 in the catalog number) and are not compatible with cables designed for motors equipped with bayonet connectors (specified by 2 in the catalog number). The motors with bayonet connectors (for example, MPL-A310P-*xx*2*x*AA) are being discontinued and require 2090-XXN*x*MP (bayonet) cables. For help with migration or to select bayonet cables, contact your Rockwell Automation® sales representative.

Bulletin MPL Motor Cable Combinations

Motor Cat. No. (200V class)	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPL-A1510V-*xx*7*x*AA, MPL-A1520U-*xx*7*x*AA, MPL-A1530U-*xx*7*x*AA	2090-CPxM7DF-16AA*xx* (standard, non-flex) 2090-CPxM7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* (2) (3) or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback 2090-XXNFMF-S*xx* (standard, non-flex) (4) 2090-CFBM7DF-CDAF*xx* (continuous-flex) Incremental Feedback
MPL-A210V-*xx*7*x*AA, MPL-A220T-*xx*7*x*AA, MPL-A230P-*xx*7*x*AA		
MPL-A310F-*xx*7*x*AA, MPL-A310P-*xx*7*x*AA, MPL-A320H-*xx*7*x*AA, MPL-A320P-*xx*7*x*AA, MPL-A330P-*xx*7*x*AA		
MPL-A420P-*xx*7*x*AA, MPL-A430H-*xx*7*x*AA		
MPL-A4530F-*xx*7*x*AA, MPL-A4540C-*xx*7*x*AA		
MPL-A430P-*xx*7*x*AA	2090-CPxM7DF-14AA*xx* (standard, non-flex) 2090-CPxM7DF-14AF*xx* (continuous-flex)	
MPL-A4530K-*xx*7*x*AA, MPL-A4540F-*xx*7*x*AA, MPL-A4560F-*xx*7*x*AA		
MPL-A520K-*xx*7*x*AA	2090-CPxM7DF-10AA*xx* (standard, non-flex) 2090-CPxM7DF-10AF*xx* (continuous-flex)	
MPL-A540K-*xx*7*x*AA, MPL-A560F-*xx*7*x*AA	2090-CPxM7DF-08AA*xx* (standard, non-flex) 2090-CPxM7DF-08AF*xx* (continuous-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

(2) Applies to Ultra3000 drives and MPL-A3*xxx*-M/S…MPL-A5*xxx*-M/S motors with absolute high-resolution feedback.

(3) Applies to Ultra3000/5000 drives and MPL-A15*xxx*-V/E…MPL-A2*xxx*-V/E motors with absolute high-resolution feedback.

(4) Applies to Ultra3000 drives and MPL-A15*xxx*-H…MPL-A45*xxx*-H motors with incremental feedback.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.

Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.

Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

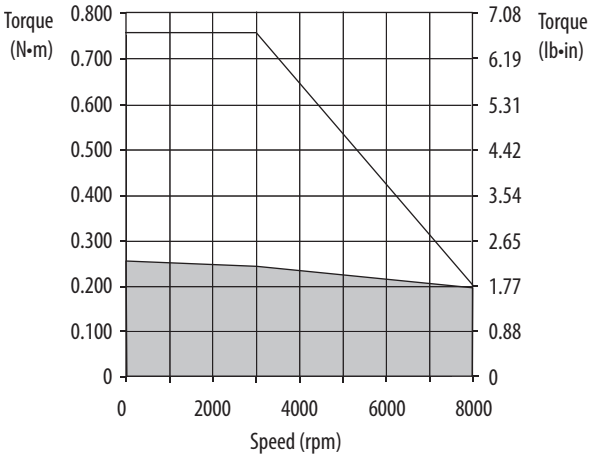
Bulletin MPL Motor Performance Specifications with Ultra3000 (200V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
MPL-A1510V	8000	1.05	0.26 (2.3)	3.40	0.77 (6.8)	0.16	2098-DSD-005
MPL-A1520U	7000	1.80	0.49 (4.3)	6.10	1.58 (13.9)	0.27	2098-DSD-005
MPL-A1530U	7000	2.82	0.90 (8.0)	10.1	2.82 (24.9)	0.39	2098-DSD-010
MPL-A210V	8000	3.09	0.55 (4.8)	10.2	1.52 (13.5)	0.37	2098-DSD-010
MPL-A220T	6000	4.54	1.61 (14.2)	15.5	4.74 (41.9)	0.62	2098-DSD-020
MPL-A230P	5000	5.40	2.10 (18)	23.0	8.2 (72.5)	0.86	2098-DSD-020
MPL-A310F	3000	2.50	1.24 (11)	7.5	2.94 (26)	0.46	2098-DSD-005
		3.20	1.58 (14)	9.3	3.61 (32)		2098-DSD-010
MPL-A310P	5000	2.50	0.79 (6.9)	7.5	1.92 (17)	0.73	2098-DSD-005
		4.85	1.58 (14)	14	3.61 (32)		2098-DSD-010
MPL-A320H	3500	5.0	2.48 (22)	15	6.44 (57)	1.0	2098-DSD-010
		6.1	3.05 (27)	19.3	7.91 (70)		2098-DSD-020
MPL-A320P	5000	5.0	1.69 (15)	15	3.95 (35)	1.3	2098-DSD-010
		9.0	3.05 (27)	29.5	7.91 (70)		2098-DSD-020
MPL-A330P	5000	12.0	4.18 (37)	30	9.60 (85)	1.8	2098-DSD-030
				38	11.1 (98)		2098-DSD-075
MPL-A420P	5000	12.7	4.74 (42)	30	10.2 (90)	2.0	2098-DSD-030
				46	13.5 (120)		2098-DSD-075
MPL-A430H	3500	12.2	6.21 (55)	30	14.7 (130)	1.8	2098-DSD-030
				45	19.8 (175)		2098-DSD-075
MPL-A430P	5000	15.0	5.42 (48)	30	10.2 (90)	2.2	2098-DSD-030
		16.8	5.99 (53)	67	19.8 (175)		2098-DSD-075
MPL-A4530F	2800	13.4	8.36 (74)	30	17.5 (155)	1.9	2098-DSD-030
				42	20.3 (180)		2098-DSD-075
MPL-A4530K	4000	15.0	6.21 (55)	30	11.3 (100)	2.5	2098-DSD-030
		19.5	8.13 (72)	62	20.3 (180)		2098-DSD-075
MPL-A4540C	1500	9.4	10.2 (90)	29	27.1 (240)	1.5	2098-DSD-020
MPL-A4540F	3000	15.0	8.25 (73)	30	15.8 (140)	2.6	2098-DSD-030
		18.4	10.2 (90)	58	27.1 (240)		2098-DSD-075
MPL-A4560F	3000	22.0	14.1 (125)	66	34.4 (305)	3.0	2098-DSD-075
MPL-A520K	4000	23.3	10.7 (95.0)	65	24.3 (215)	3.5	2098-DSD-075
MPL-A540K	4000	41.5	19.4 (172)	120	48.6 (430)	5.5	2098-DSD-150
MPL-A560F	3000	42.0	26.8 (237)		61.0 (540)	5.3	2098-DSD-150

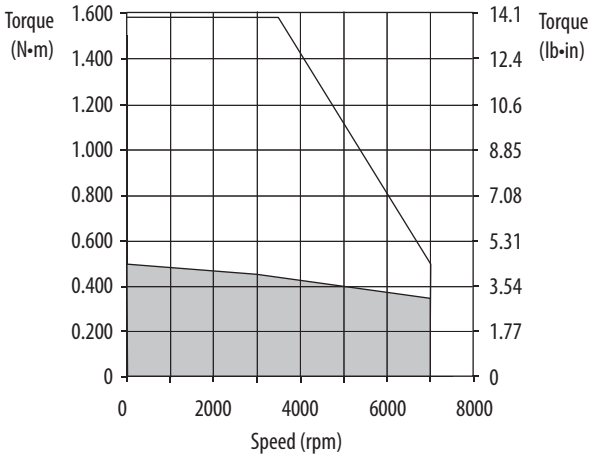
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/MP-Series Low Inertia Motor Curves

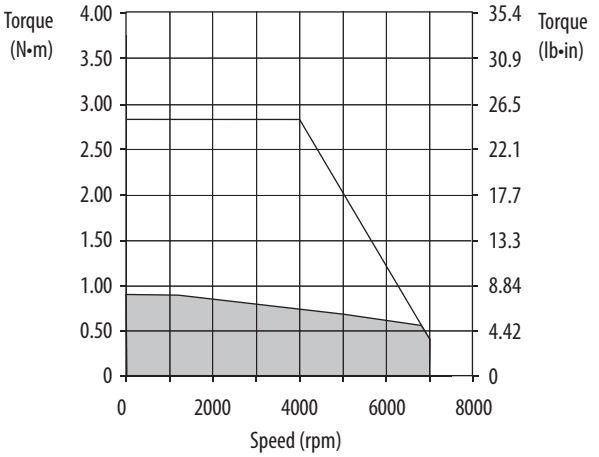
2098-DSD-005 and MPL-A1510V



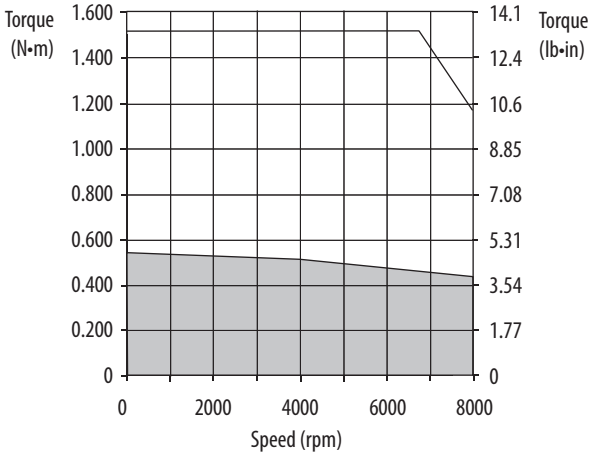
2098-DSD-005 and MPL-A1520U



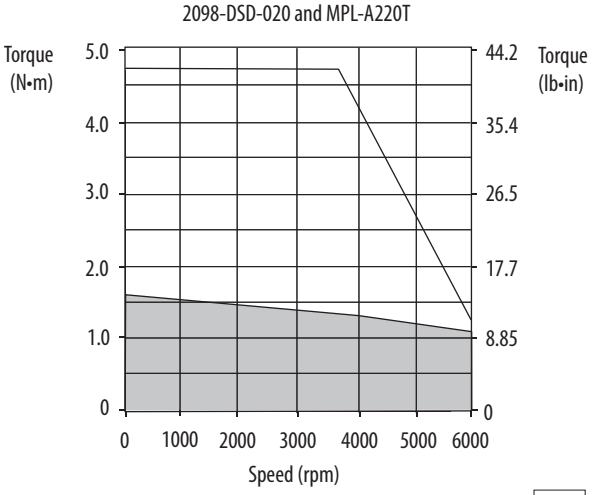
2098-DSD-010 and MPL-A1530U



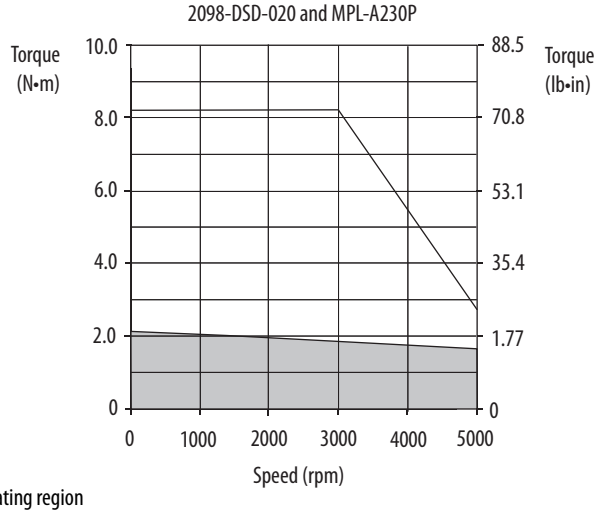
2098-DSD-010 and MPL-A210V



2098-DSD-020 and MPL-A220T



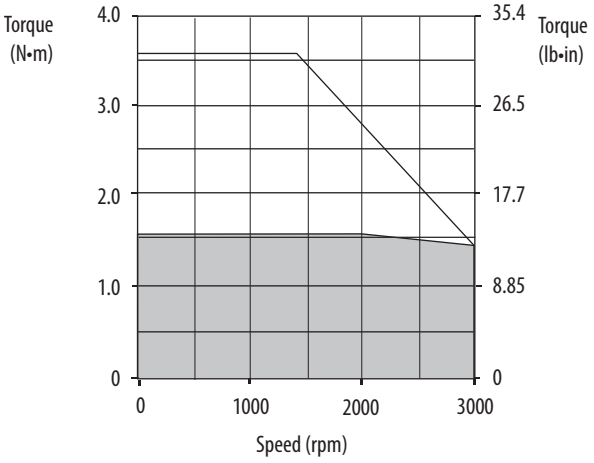
2098-DSD-020 and MPL-A230P



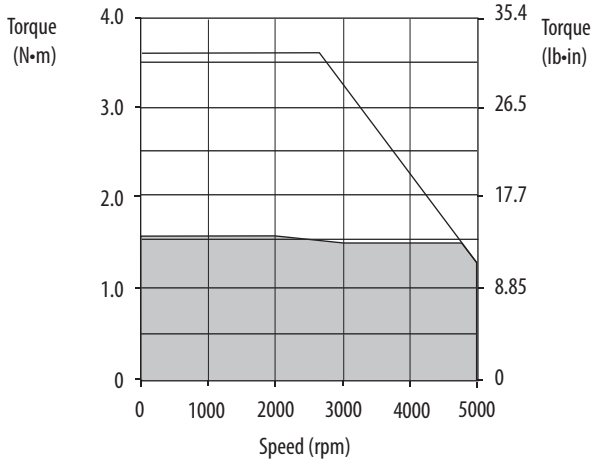
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/MP-Series Low Inertia Motor Curves (continued)

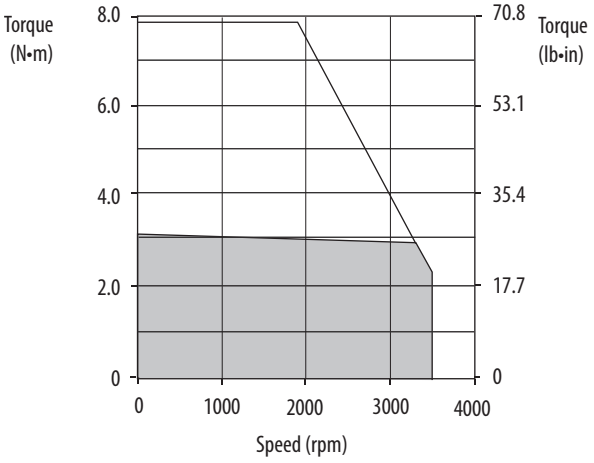
2098-DSD-010 and MPL-A310F



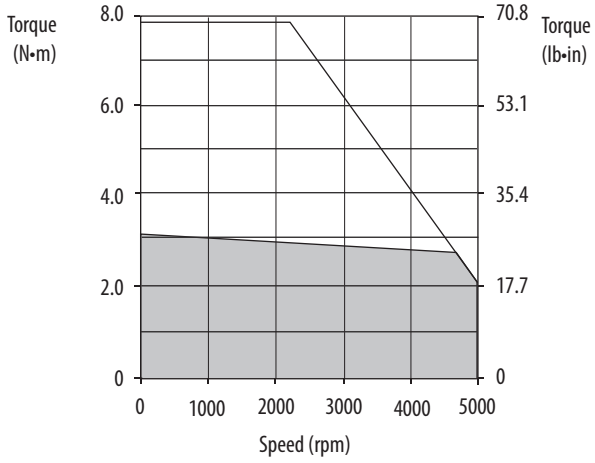
2098-DSD-010 and MPL-A310P



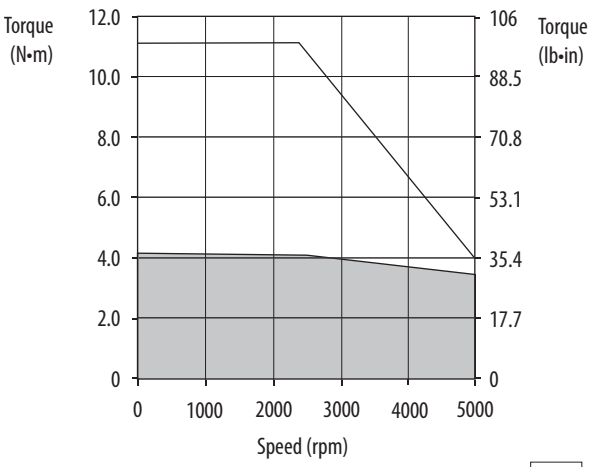
2098-DSD-020 and MPL-A320H



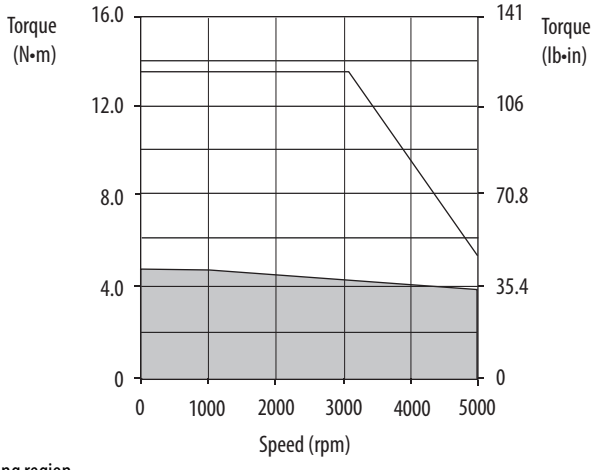
2098-DSD-020 and MPL-A320P



2098-DSD-075 and MPL-A330P



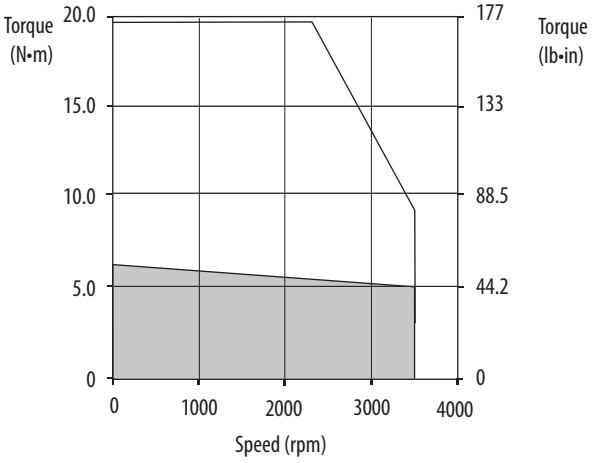
2098-DSD-075 and MPL-A420P



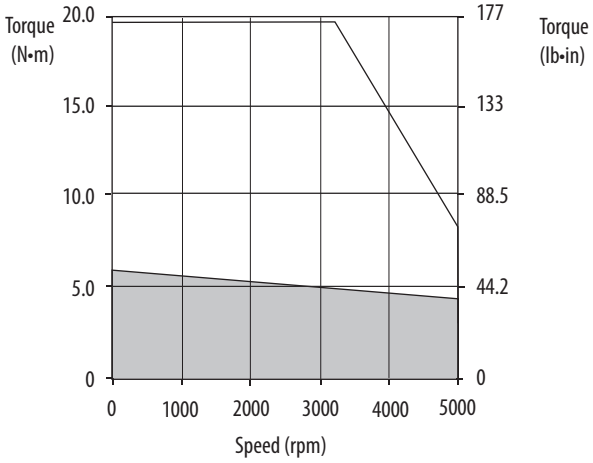
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/MP-Series Low Inertia Motor Curves (continued)

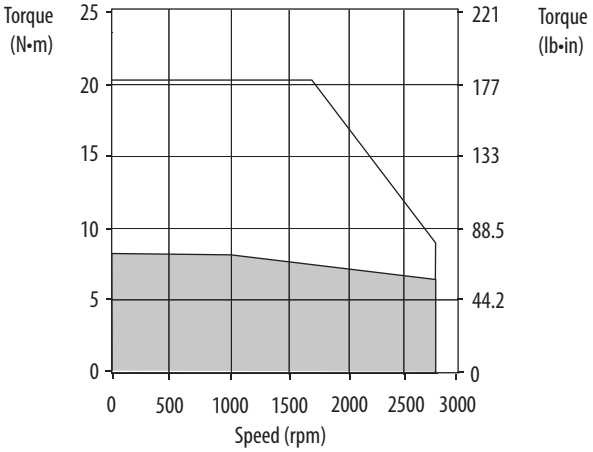
2098-DSD-075 and MPL-A430H



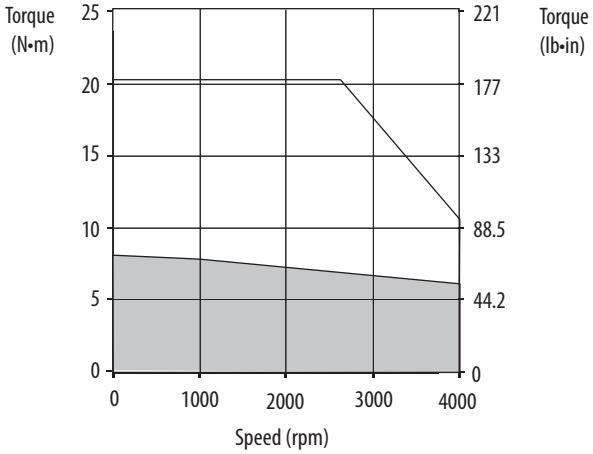
2098-DSD-075 and MPL-A430P



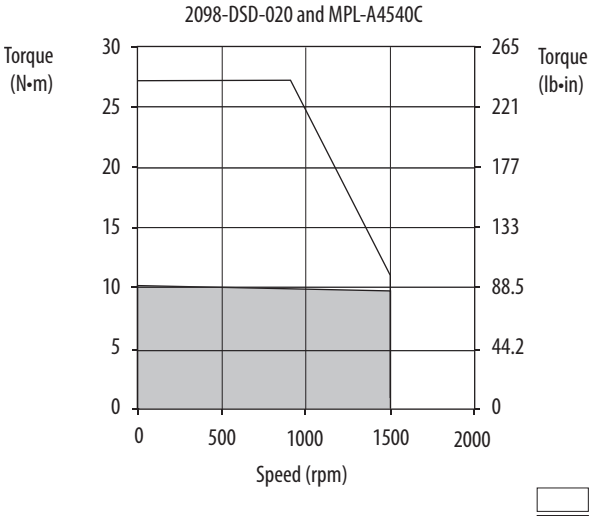
2098-DSD-075 and MPL-A4530F



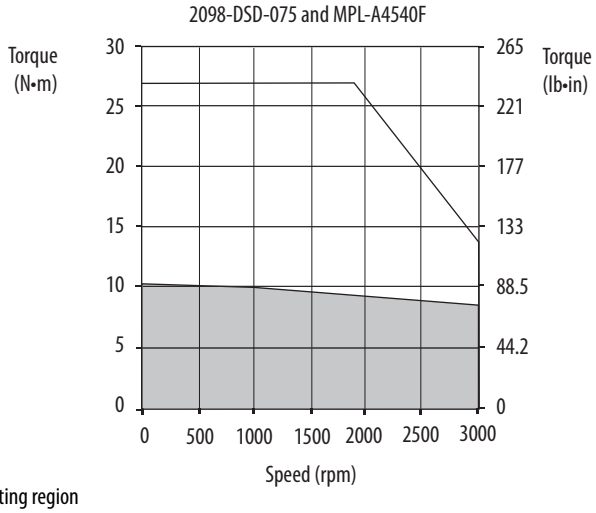
2098-DSD-075 and MPL-A4530K



2098-DSD-020 and MPL-A4540C



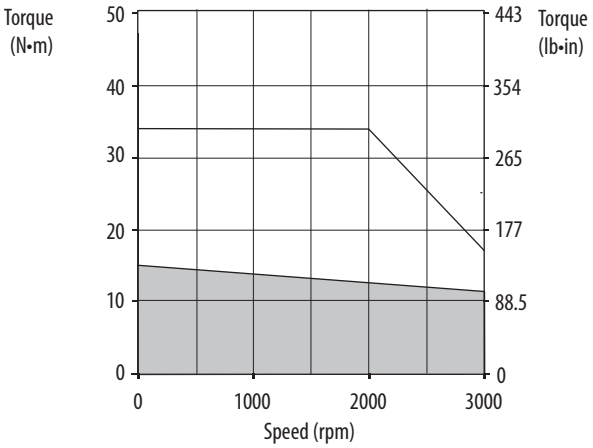
2098-DSD-075 and MPL-A4540F



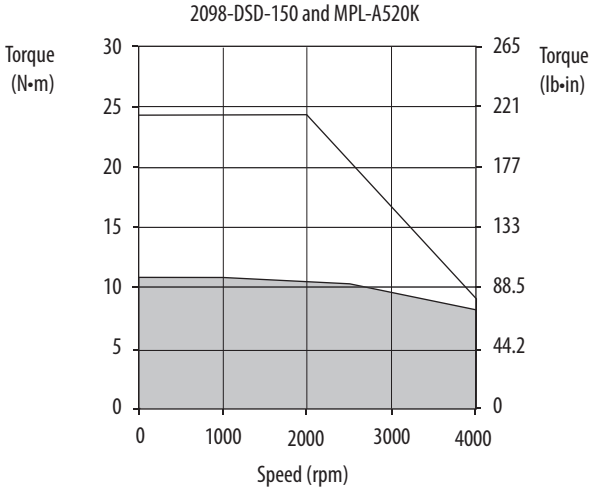
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/MP-Series Low Inertia Motor Curves (continued)

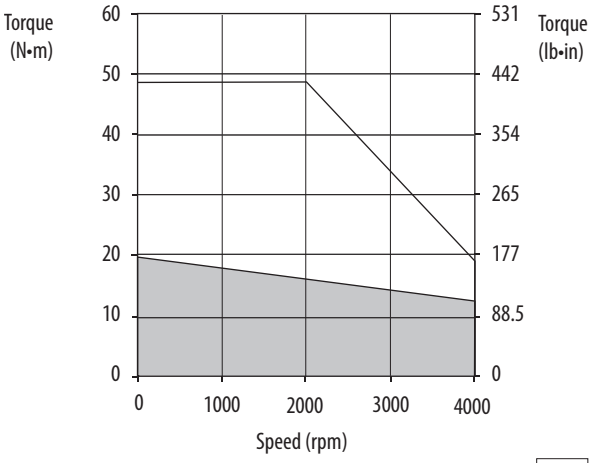
2098-DSD-075 and MPL-A4560F



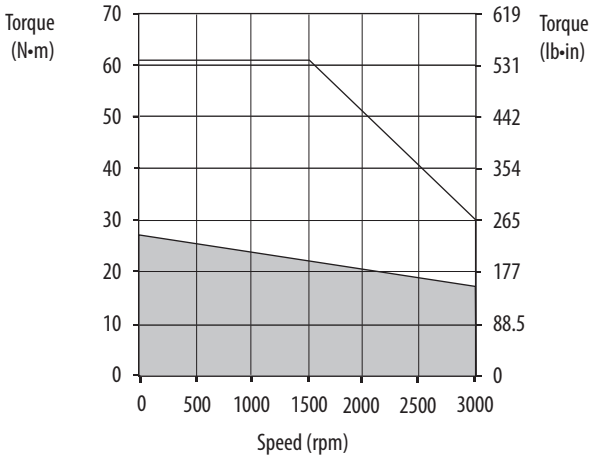
2098-DSD-150 and MPL-A520K



2098-DSD-150 and MPL-A540K



2098-DSD-150 and MPL-A560F



= Intermittent operating region

= Continuous operating region

Ultra3000 (400V class) Drives with MP-Series Low Inertia Motors

This section provides system combination information for the Ultra3000 (400V class) drives when matched with MP-Series low-inertia motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

IMPORTANT The MP-Series low-inertia motors on this page are equipped with DIN connectors (specified by 7 in the catalog number) and are not compatible with cables designed for motors equipped with bayonet connectors (specified by 2 in the catalog number). The motors with bayonet connectors (for example, MPL-A310P-*xx*2*x*AA) are being discontinued and require 2090-XXN*x*MP (bayonet) cables. For help with migration or to select bayonet cables, contact your Rockwell Automation sales representative.

Bulletin MPL Motor Cable Combinations

Motor Cat. No. (400V class)	Motor Power/Brake Cable	Motor Feedback Cable [1]
MPL-B1510V-*xx*7*x*AA, MPL-B1520U-*xx*7*x*AA, MPL-B1530U-*xx*7*x*AA	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or [2] [3] 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback 2090-XXNFMF-S*xx* (standard, non-flex) [4] 2090-CFBM7DF-CDAF*xx* (continuous-flex) Incremental Feedback
MPL-B210V-*xx*7*x*AA, MPL-B220T-*xx*7*x*AA, MPL-B230P-*xx*7*x*AA		
MPL-B310P-*xx*7*x*AA, MPL-B320P-*xx*7*x*AA, MPL-B330P-*xx*7*x*AA		
MPL-B420P-*xx*7*x*AA, MPL-B430P-*xx*7*x*AA		
MPL-B4530F-*xx*7*x*AA, MPL-B4530K-*xx*7*x*AA, MPL-B4540F-*xx*7*x*AA, MPL-B4560F-*xx*7*x*AA		
MPL-B520K-*xx*7*x*AA		
MPL-B540D-*xx*7*x*AA, MPL-B540K-*xx*7*x*AA, MPL-B560F-*xx*7*x*AA	2090-CP*x*M7DF-14AA*xx* (standard, non-flex) 2090-CP*x*M7DF-14AF*xx* (continuous-flex)	
MPL-B580F-*xx*7*x*AA, MPL-B580J-*xx*7*x*AA, MPL-B640F-*xx*7*x*AA	2090-CP*x*M7DF-10AA*xx* (standard, non-flex) 2090-CP*x*M7DF-10AF*xx* (continuous-flex)	
MPL-B660F-*xx*7*x*AA, MPL-B680D-*xx*7*x*AA, MPL-B960B-*xx*7*x*AA, MPL-B980B-*xx*7*x*AA	2090-CP*x*M7DF-08AA*xx* (standard, non-flex) 2090-CP*x*M7DF-08AF*xx* (continuous-flex)	
MPL-B680F-*xx*7*x*AA, MPL-B860D-*xx*7*x*AA, MPL-B880C-*xx*7*x*AA,	2090-CPBM7DF-06AA*xx* (standard, non-flex)	
MPL-B880D-*xx*7*x*AA, MPL-B960C-*xx*7*x*AA, MPL-B980C-*xx*7*x*AA,	2090-CPBM7DF-04AA*xx* (standard, non-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.
(2) Applies to Ultra3000 drives and MPL-B3*xxx*-M/S…MPL-B9*xxx*-M/S motors with absolute high-resolution feedback.
(3) Applies to Ultra3000/5000 drives and MPL-B15*xxx*-V/E…MPL-B2*xxx*-V/E motors with absolute high-resolution feedback.
(4) Applies to Ultra3000 drives and MPL-B15*xxx*-H…MPL-B45*xxx*-H motors with incremental feedback.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Bulletin MPL Motor Performance Specifications with Ultra3000 (400V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A (0-pk)	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A (0-pk)	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPL-B1510V	8000	0.95	0.26 (2.3)	3.10	0.77 (6.80)	0.16	2098-DSD-HV030
MPL-B1520U	7000	1.80	0.49 (4.3)	6.10	1.58 (13.9)	0.27	2098-DSD-HV030
MPL-B1530U	7000	2.0	0.90 (8.0)	7.20	2.82 (24.9)	0.39	2098-DSD-HV030

Bulletin MPL Motor Performance Specifications with Ultra3000 (400V class) Drives (continued)

Rotary Motor	Speed, max rpm	System Continuous Stall Current A (0-pk)	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A (0-pk)	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPL-B210V	8000	1.75	0.55 (4.8)	5.80	1.52 (13.5)	0.37	2098-DSD-HV030
MPL-B220T	6000	3.30	1.61 (14.2)	11.3	4.74 (41.9)	0.62	2098-DSD-HV030
MPL-B230P	5000	2.60	2.10 (18.6)	11.3	8.20 (73.0)	0.86	2098-DSD-HV030
MPL-B310P	5000	2.4	1.58 (14)	7.1	3.61 (32)	0.77	2098-DSD-HV030
MPL-B320P	5000	4.5	2.94 (26)	13.0	7.91 (70)	1.5	2098-DSD-HV030
MPL-B330P	5000	6.1	4.18 (37)	14.0	8.59 (76)	1.8	2098-DSD-HV030
				17.0	11.1 (98)		2098-DSD-HV050
MPL-B420P	5000	6.4	4.74 (42)	14.0	8.59 (76)	1.9	2098-DSD-HV030
				22.0	12.9 (114)		2098-DSD-HV050
				23.0	13.5 (120)		2098-DSD-HV100
MPL-B430P	5000	9.2	6.55 (58)	22.0	12.9 (114)	2.2	2098-DSD-HV050
				31.0	19.8 (175)		2098-DSD-HV100
MPL-B4530F	3000	7.0	8.25 (73)	14.0	13.5 (120)	2.1	2098-DSD-HV030
		7.1	8.36 (74)	21.0	20.3 (180)		2098-DSD-HV050
MPL-B4530K	4000	11.0	8.36 (74)	22.0	14.5 (128)	2.6	2098-DSD-HV050
				31.0	20.3 (180)		2098-DSD-HV100
MPL-B4540F	3000	9.1	10.2 (90)	22.0	22.0 (195)	2.6	2098-DSD-HV050
				26.0	27.1 (240)		2098-DSD-HV100
MPL-B4560F	3000	11.0	13.1 (116)	22.0	21.0 (186)	3.2	2098-DSD-HV050
		11.8	14.1 (125)	36.0	34.4 (305)		2098-DSD-HV100
MPL-B520K	4000	11.0	10.3 (91)	22.0	15.8 (140)	3.5	2098-DSD-HV050
		11.5	10.7 (95)	33.0	23.2 (205)		2098-DSD-HV100
MPL-B540D	2000	10.5	19.4 (172)	22.0	39.2 (346)	3.4	2098-DSD-HV050
				23.0	41.0 (362)		2098-DSD-HV100
MPL-B540K	4000	20.5	19.4 (172)	46.0	33.9 (300)	5.4	2098-DSD-HV100
				60.0	45.2 (400)		2098-DSD-HV150
MPL-B560F	3000	20.6	26.8 (237)	46.0	50.4 (446)	5.5	2098-DSD-HV100
				68.0	67.8 (600)		2098-DSD-HV150
MPL-B580F	3000	26.0	34.0 (301)	68.0	70.5 (623)	7.1	2098-DSD-HV150
				94.0	87.0 (769)		2098-DSD-HV220
MPL-B580J	3800	32.0	34.0 (301)	68.0	62.4 (552)	7.9	2098-DSD-HV150
				94.0	81.0 (717)		2098-DSD-HV220
MPL-B640F	3000	32.1	36.7 (325)	65.0	72.3 (640)	6.1	2098-DSD-HV220
MPL-B660F	3000	34.0	40.7 (360)	68.0	73.4 (650)	6.1	2098-DSD-HV150
		38.5	48.0 (425)	94.0	96.0 (850)		2098-DSD-HV220
MPL-B680D	2000	34.0	62.8 (556)	94.0	154.2 (1365)	9.3	2098-DSD-HV220
MPL-B680F	3000	48.0	58.2 (515)	94.0	101.7 (900)	7.5	2098-DSD-HV220
MPL-B860D	2000	47.5	83.1 (735)	94.0	151 (1335)	12.5	2098-DSD-HV220
MPL-B880C	1500	47.5	109.9 (973)	94.0	197 (1742)	12.6	2098-DSD-HV220

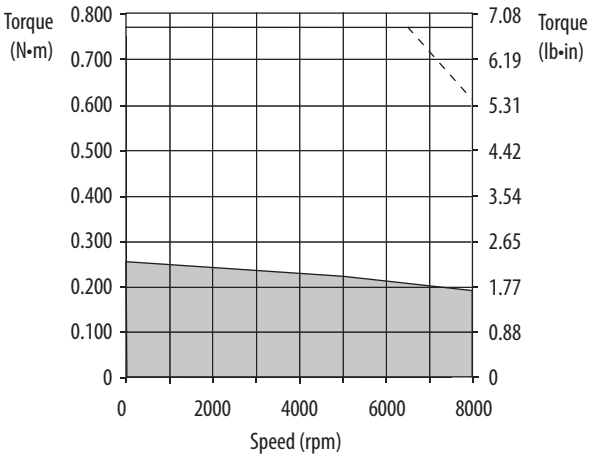
Bulletin MPL Motor Performance Specifications with Ultra3000 (400V class) Drives (continued)

Rotary Motor	Speed, max rpm	System Continuous Stall Current A (0-pk)	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A (0-pk)	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPL-B880D	2000	47.0	77.4 (685)	94.0	144 (1275)	12.6	2098-DSD-HV220
MPL-B960B	1200	42.5	130 (1150)	94.0	231 (2050)	12.7	2098-DSD-HV220
MPL-B960C	1500	41.5	112 (990)	94.0	181 (1600)	14.8	2098-DSD-HV220
MPL-B980B	1000	40.0	163 (1440)	94.0	278 (2460)	15.2	2098-DSD-HV220
MPL-B980C	1500	47.5	118.6 (1050)	94.0	213 (1890)	16.8	2098-DSD-HV220

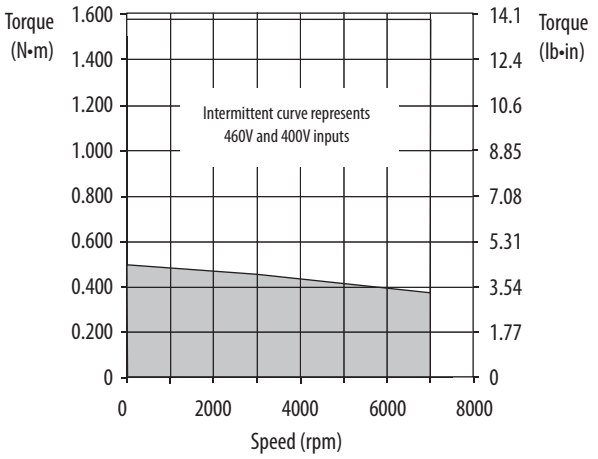
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motor Curves

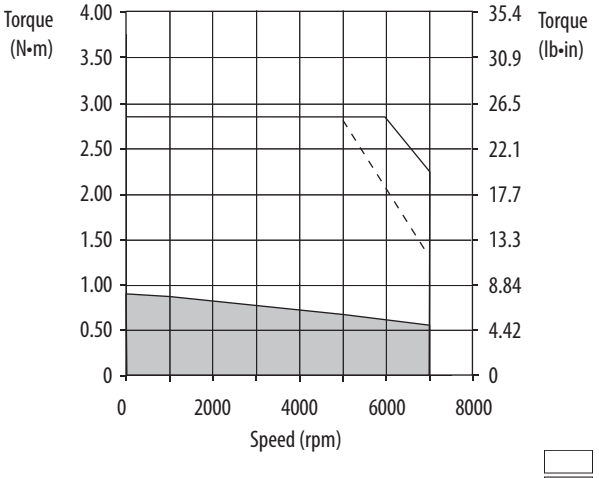
2098-DSD-HV030 and MPL-B1510V



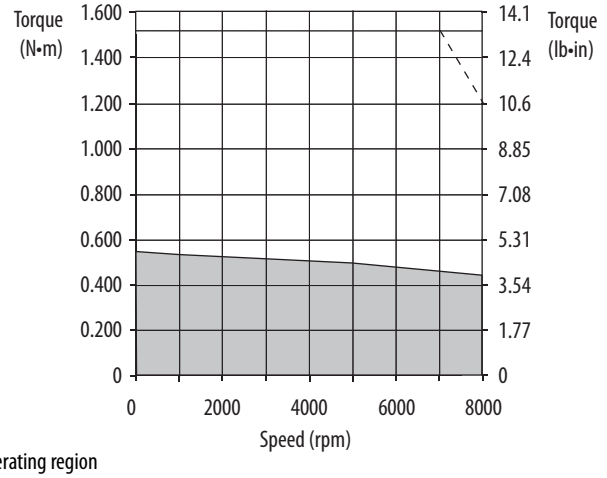
2098-DSD-HV030 and MPL-B1520U



2098-DSD-HV030 and MPL-B1530U



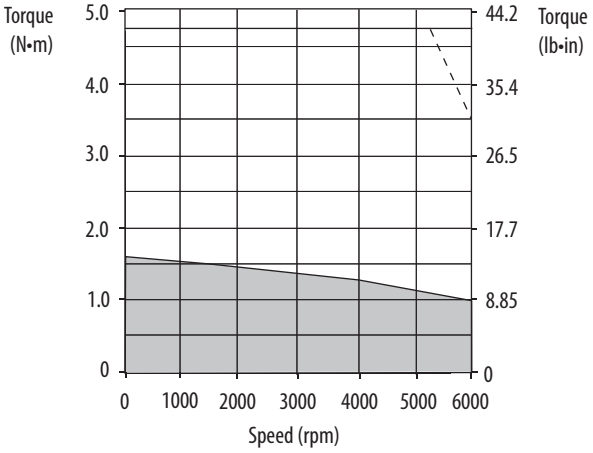
2098-DSD-HV030 and MPL-B210V



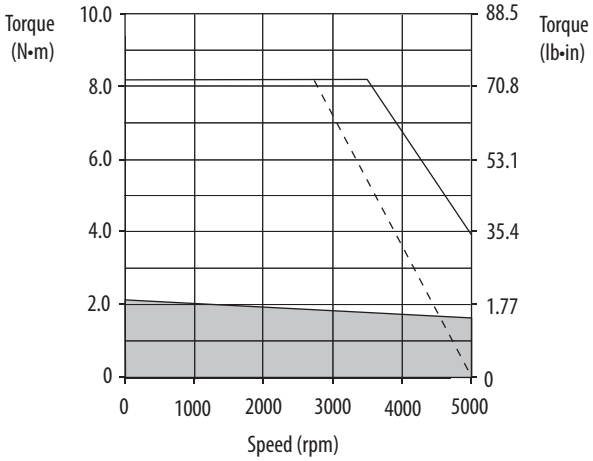
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motors (continued)

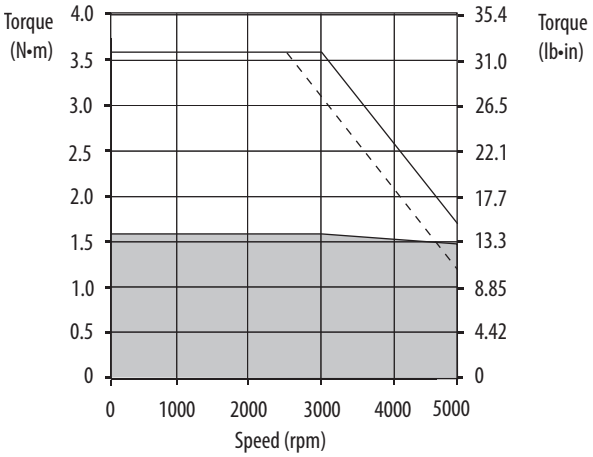
2098-DSD-HV030 and MPL-B220T



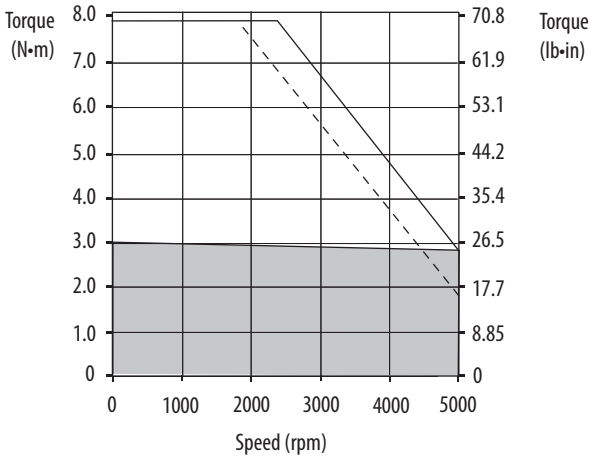
2098-DSD-HV030 and MPL-B230P



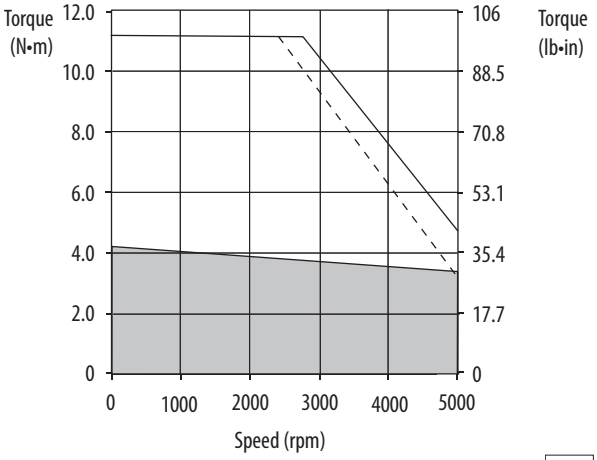
2098-DSD-HV030 and MPL-B310P



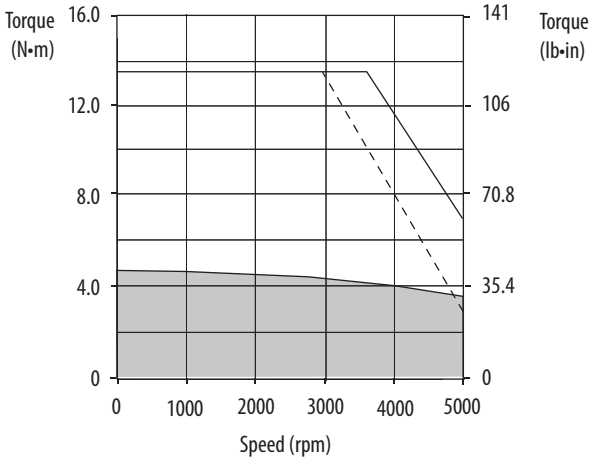
2098-DSD-HV030 and MPL-B320P



2098-DSD-HV050 and MPL-B330P



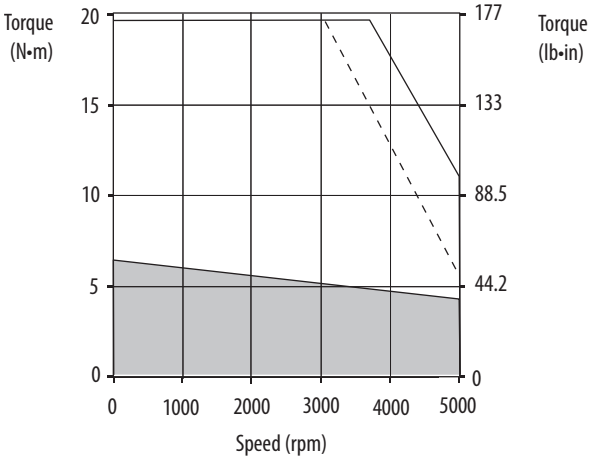
2098-DSD-HV100 and MPL-B420P



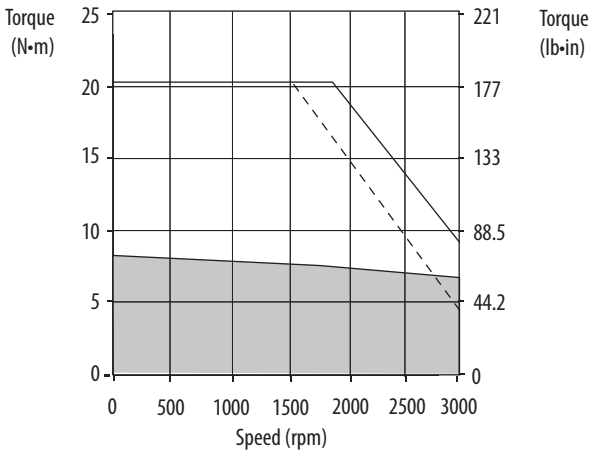
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motors (continued)

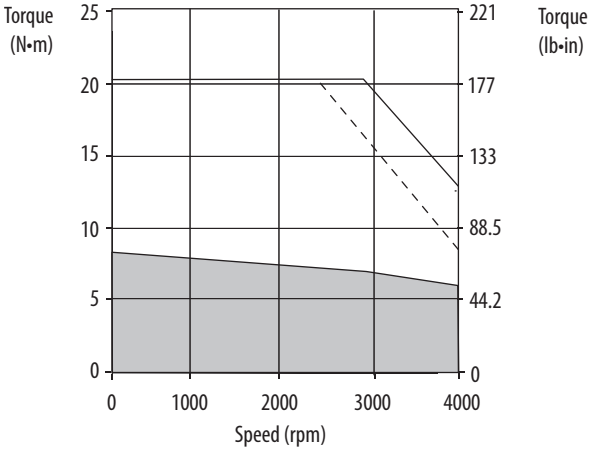
2098-DSD-HV100 and MPL-B430P



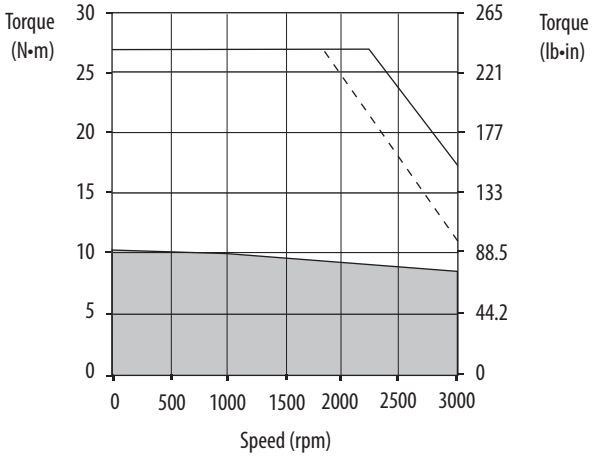
2098-DSD-HV050 and MPL-B4530F



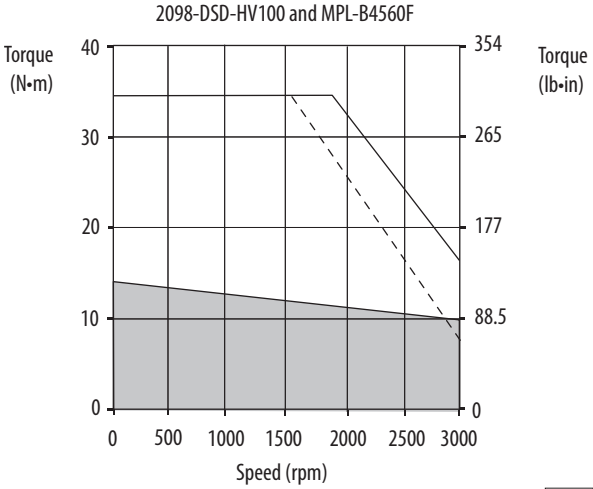
2098-DSD-HV100 and MPL-B4530K



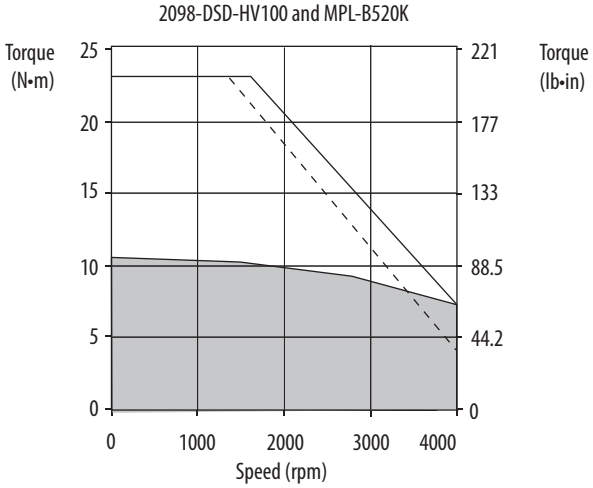
2098-DSD-HV100 and MPL-B4540F



2098-DSD-HV100 and MPL-B4560F



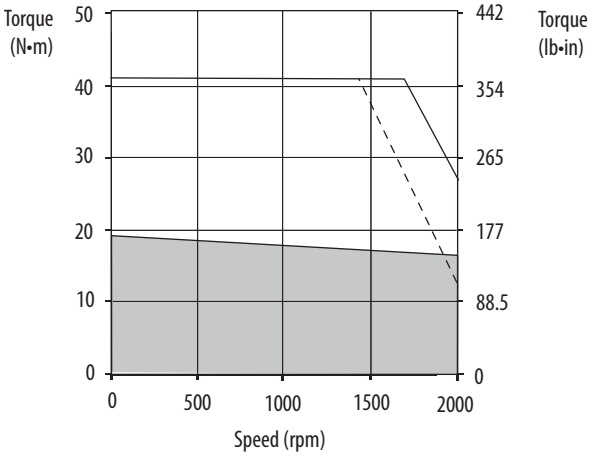
2098-DSD-HV100 and MPL-B520K



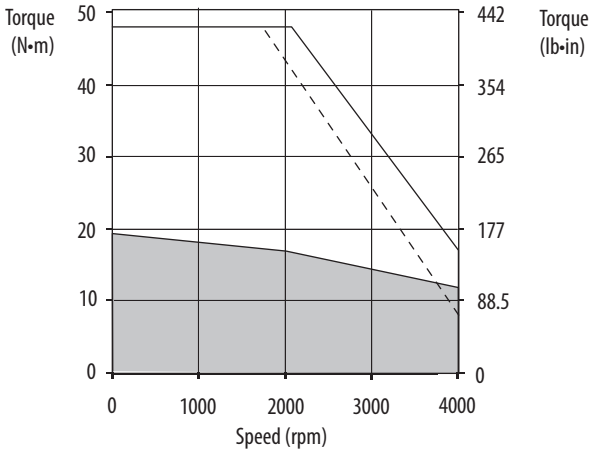
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motors (continued)

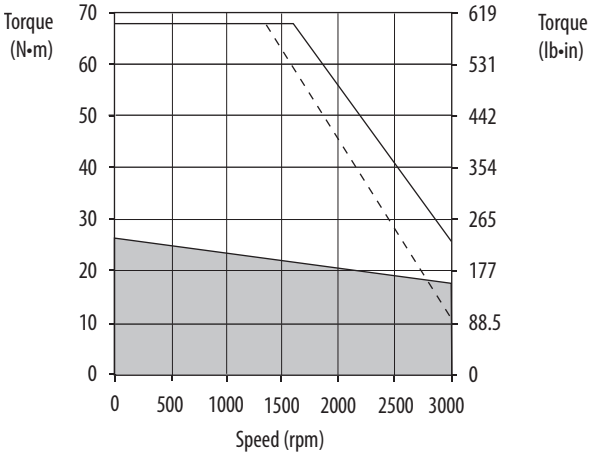
2098-DSD-HV100 and MPL-B540D



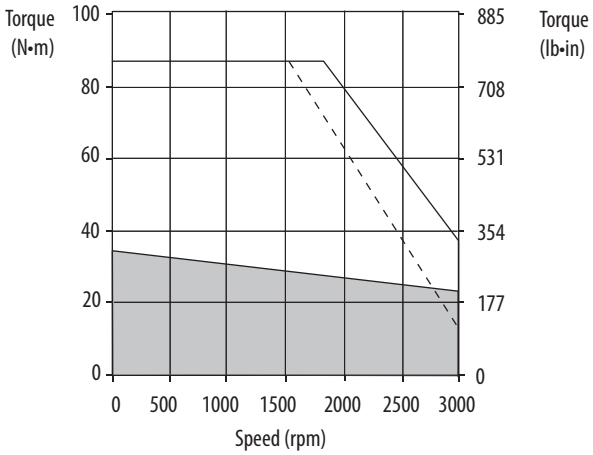
2098-DSD-HV150 and MPL-B540K



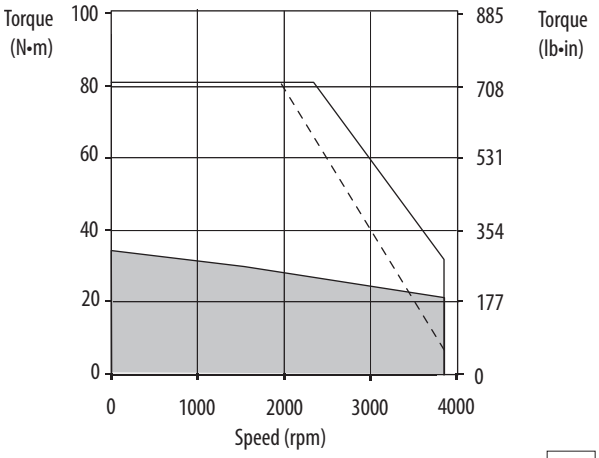
2098-DSD-HV150 and MPL-B560F



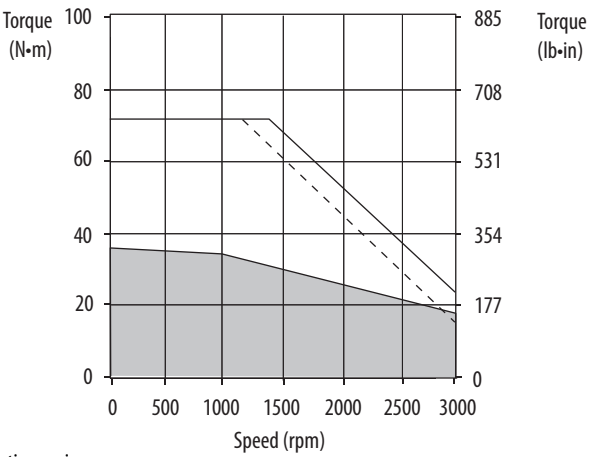
2098-DSD-HV220 and MPL-B580F



2098-DSD-HV220 and MPL-B580J



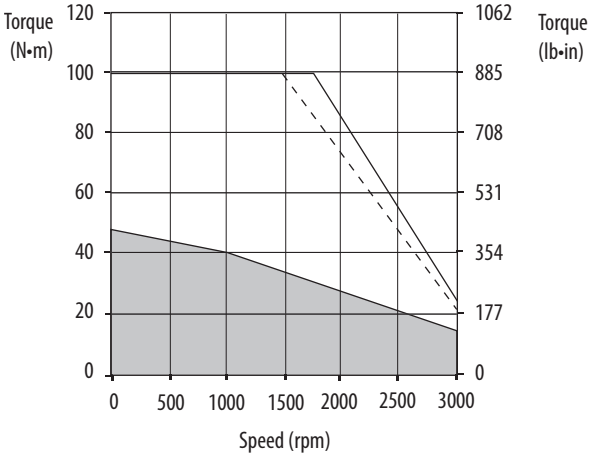
2098-DSD-HV220 and MPL-B640F



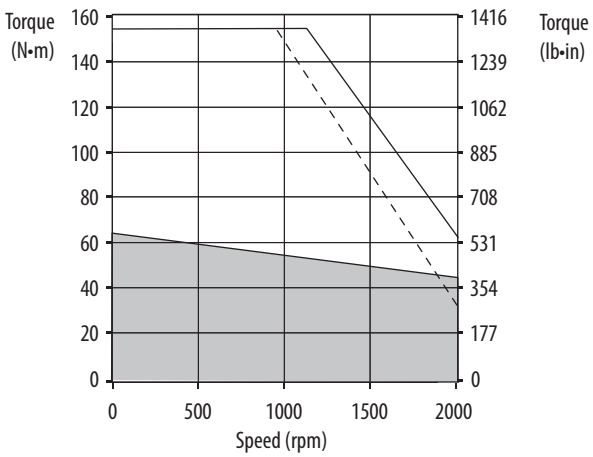
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motors (continued)

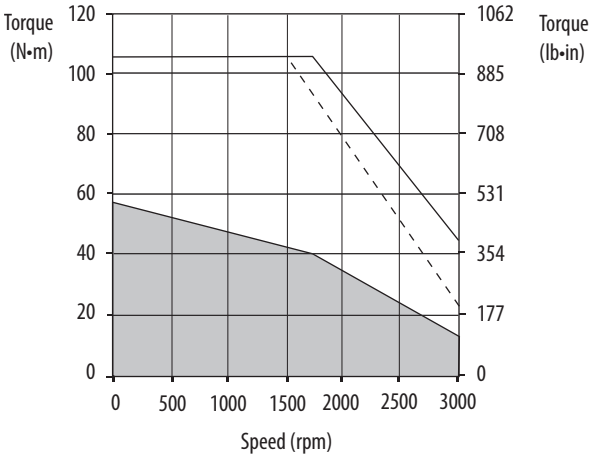
2098-DSD-HV220 and MPL-B660F



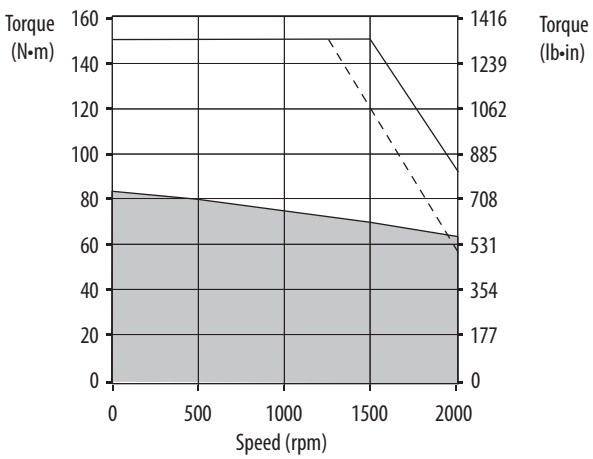
2098-DSD-HV220 and MPL-B680D



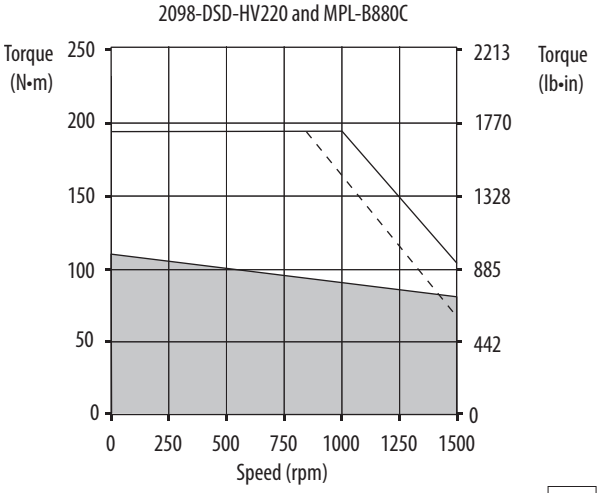
2098-DSD-HV220 and MPL-B680F



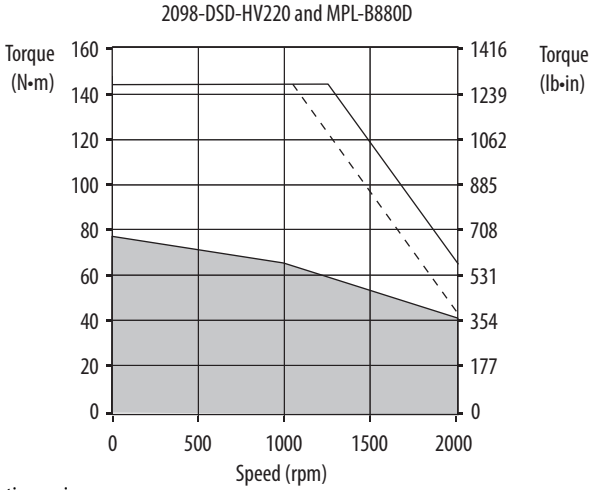
2098-DSD-HV220 and MPL-B860D



2098-DSD-HV220 and MPL-B880C



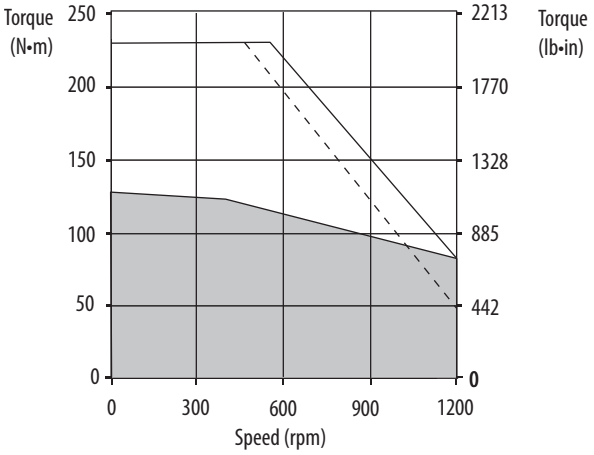
2098-DSD-HV220 and MPL-B880D



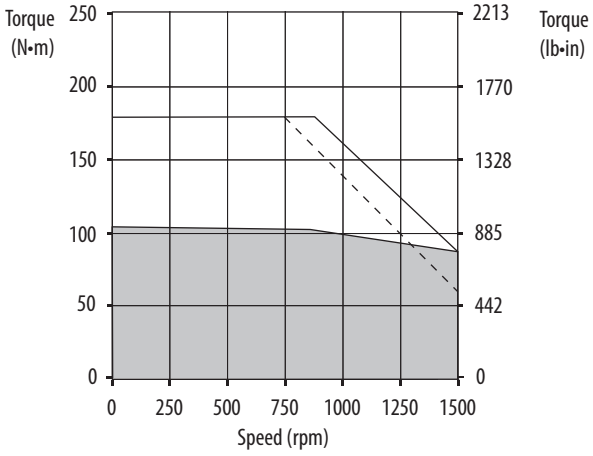
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Low Inertia Motors (continued)

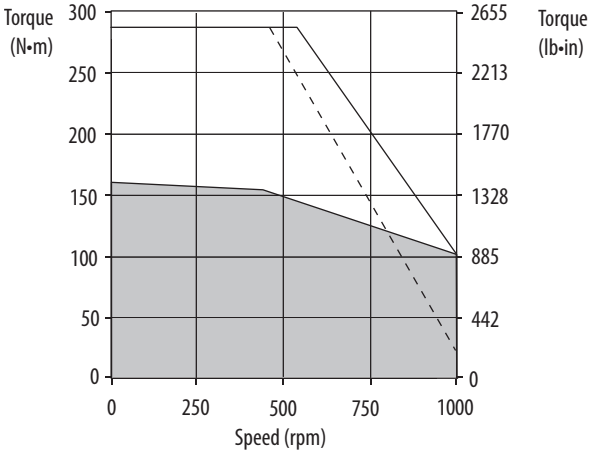
2098-DSD-HV220 and MPL-B960B



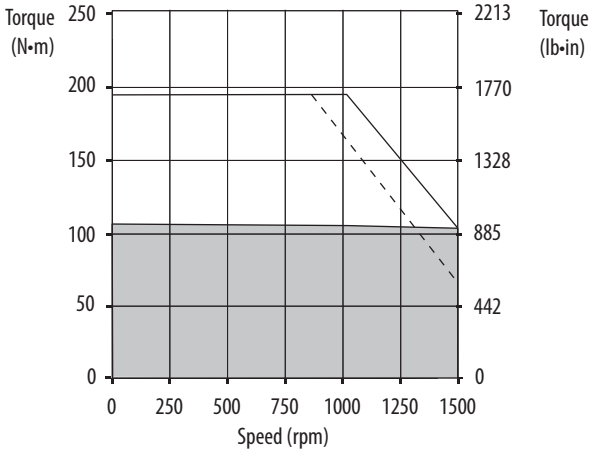
2098-DSD-HV220 and MPL-B960C



2098-DSD-HV220 and MPL-B980B



2098-DSD-HV220 and MPL-B980C



= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (200V class) Drives with MP-Series Medium Inertia Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with MP-Series medium-inertia motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPM Motor Cable Combinations

Motor Cat. No. (200V class)	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPM-A1151M, MPM-A1152F, MPM-A1153F	2090-CPxM7DF-16AA*xx* (standard, non-flex) 2090-CPxM7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPM-A1302F	2090-CPxM7DF-14AA*xx* (standard, non-flex) 2090-CPxM7DF-14AF*xx* (continuous-flex)	
MPM-A1304F	2090-CPxM7DF-12AA*xx* (standard, non-flex)	
MPM-A1651F	2090-CPxM7DF-10AA*xx* (standard, non-flex) 2090-CPxM7DF-10AF*xx* (continuous-flex)	
MPM-A1652F, MPM-A1653F	2090-CPxM7DF-08AA*xx* (standard, non-flex) 2090-CPxM7DF-08AF*xx* (continuous-flex)	
MPM-A2152F, MPM-A2153F, MPM-A2154C, MPM-A2154E	2090-CPBM7DF-06AA*xx* (standard, non-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

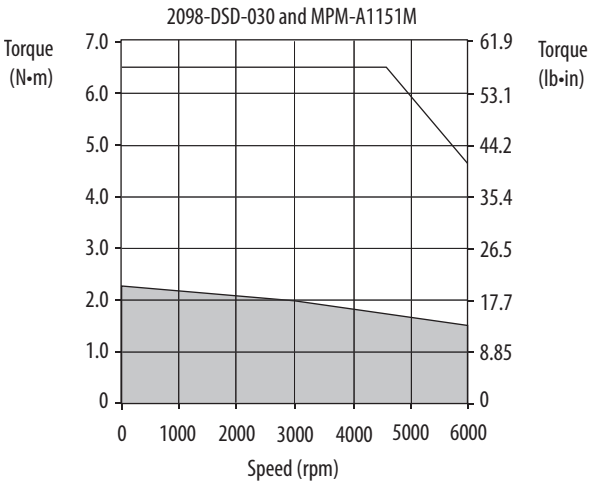
For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

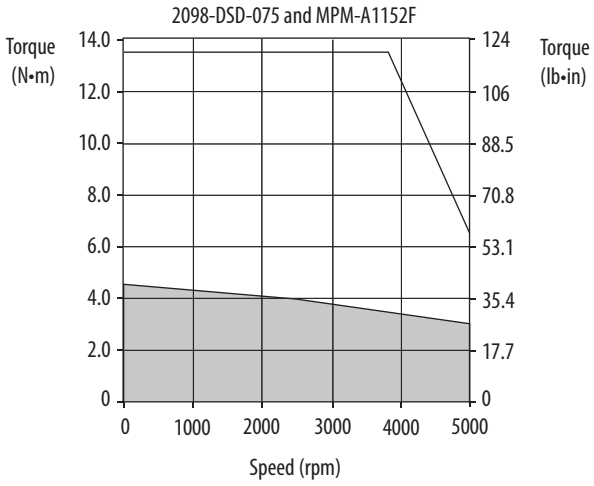
Bulletin MPM Motor Performance Specifications with Ultra3000 (200V class) Drives

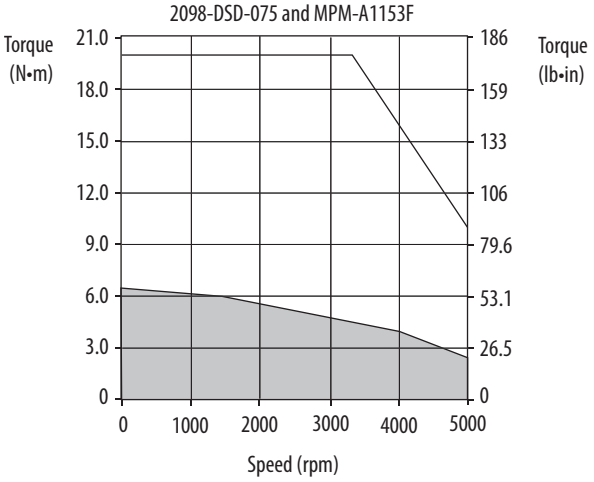
Rotary Motor	Speed, base rpm	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
MPM-A1151M	4500	6000	10.3	2.3 (20.3)	30.5	6.6 (58.4)	0.90	2098-DSD-030
MPM-A1152F	3000	5000	14.9	4.7 (41.6)	44.8	13.5 (119)	1.40	2098-DSD-075
MPM-A1153F	3000	5000	18.6	6.5 (57.5)	64.5	19.8 (175)	1.45	2098-DSD-075
MPM-A1302F	3000	4500	19.8	6.6 (58.4)	50.2	13.5 (119)	1.65	2098-DSD-075
MPM-A1304F	3000	4000	22.5	9.2 (81.4)	48.3	19.3 (171)	2.20	2098-DSD-075
MPM-A1651F	3000	5000	30.96	10.7 (94.7)	75.0	20.4 (180)	2.50	2098-DSD-075
MPM-A1652F	3000	4000	33.54	13.4 (119)	103.2	36.0 (318)	4.03	2098-DSD-150
MPM-A1653F	3000	4000	42.4	18.6 (165)	119.1	41.9 (371)	5.10	2098-DSD-150
MPM-A2152F	3000	4000	59.04	26.9 (238)	125.8	56.0 (495)	5.20	2098-DSD-150
MPM-A2153F	3000	3600	59.65	35.2 (311)	120.4	58.0 (513)	5.80	2098-DSD-150
MPM-A2154C	1500	2000	58.68	55.5 (491)	127.3	106 (938)	6.50	2098-DSD-150
MPM-A2154E	2250	3000	59.67	44.0 (389)	128.2	83.9 (742)	7.00	2098-DSD-150

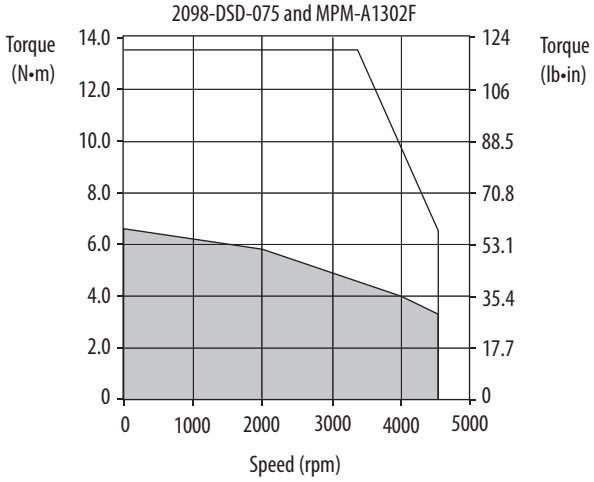
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

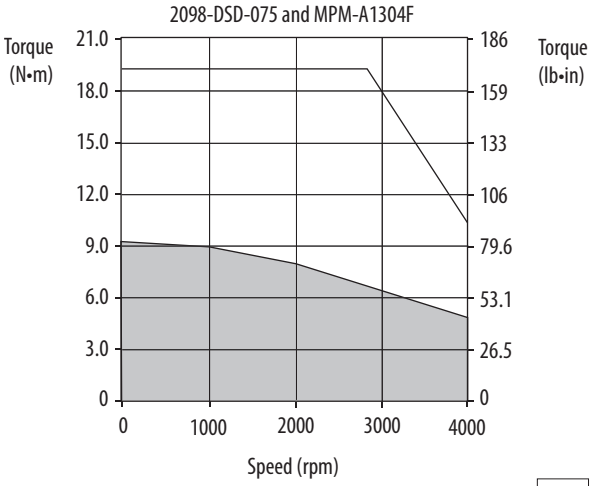
Ultra3000 (200V class) Drives/MP-Series Medium Inertia Motor Curves

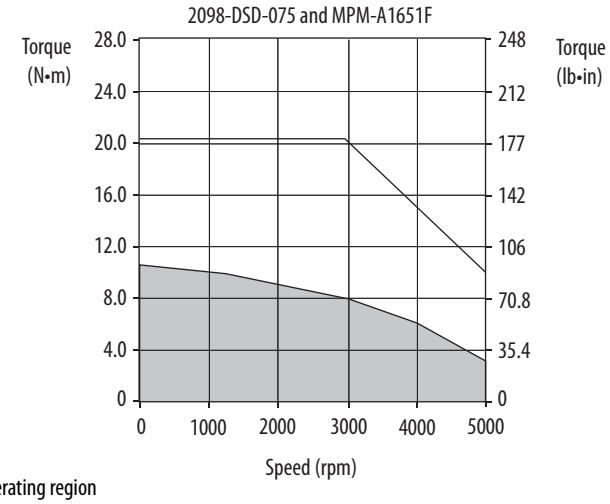








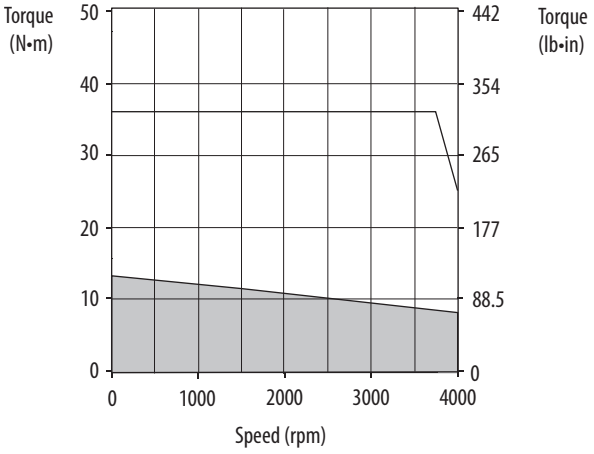




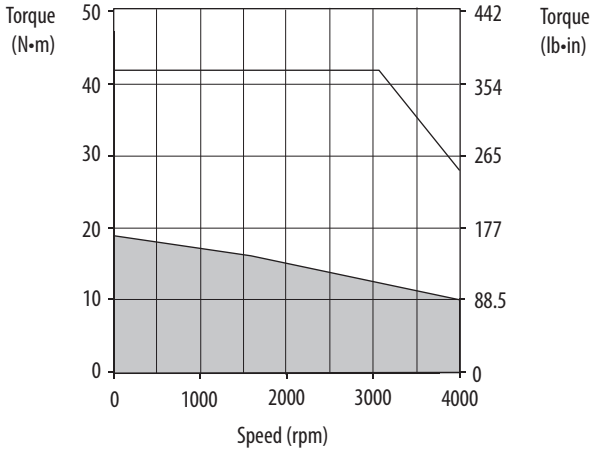
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

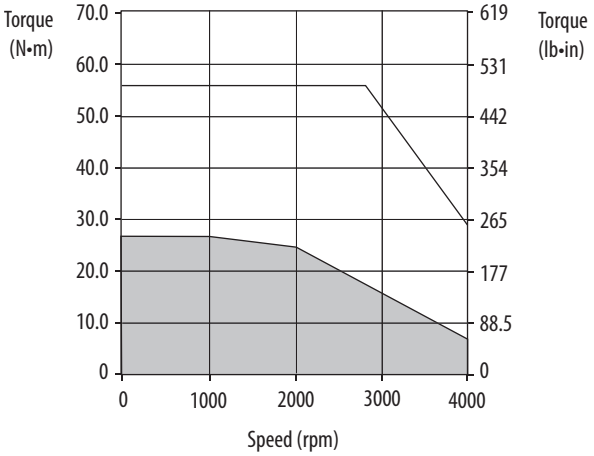
2098-DSD-HV150 and MPM-A1652F



2098-DSD-HV150 and MPM-A1653F



2098-DSD-HV150 and MPM-A2152F



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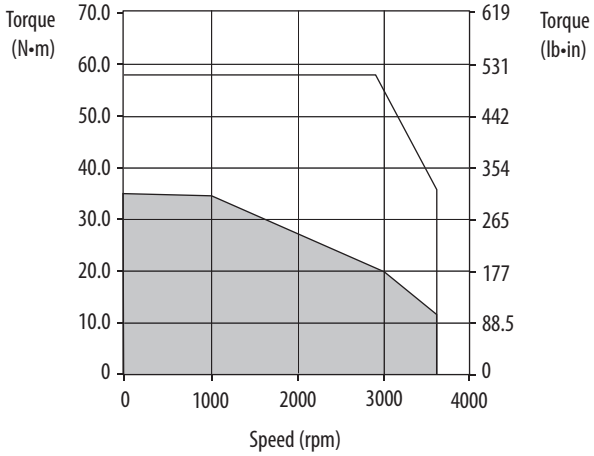
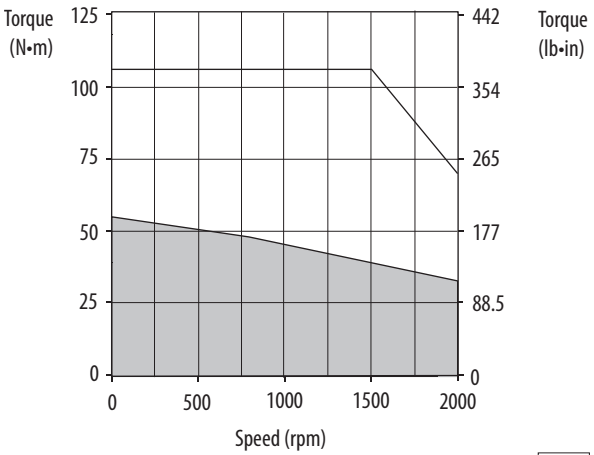
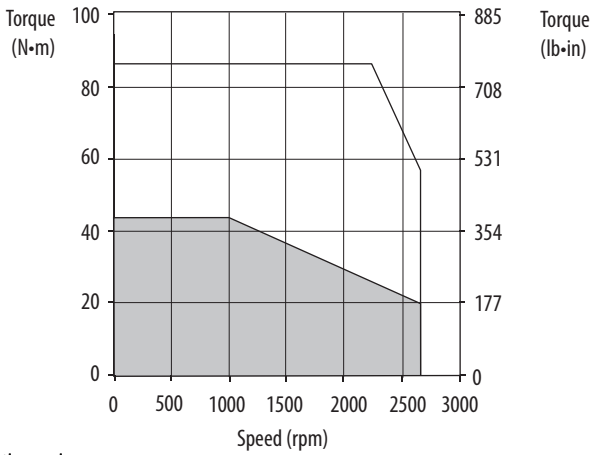


2098-DSD-HV150 and MPM-A2154C



2098-DSD-150 and MPM-A2154E



= Intermittent operating region

= Continuous operating region

Ultra3000 (400V class) Drives with MP-Series Medium Inertia Motors

This section provides system combination information for the Ultra3000 (400V class) drives when matched with MP-Series medium-inertia motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPM Motor Cable Combinations

Motor Cat. No. (400V class)	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPM-B1151*x*, MPM-B1152*x*, MPM-B1153E, MPM-B1153F	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPM-B1302F, MPM-B1302M, MPM-B1304C, MPM-B1304E		
MPM-B1651C, MPM-B1652C		
MPM-B1153T	2090-CP*x*M7DF-14AA*xx* (standard, non-flex) 2090-CP*x*M7DF-14AF*xx* (continuous-flex)	
MPM-B1302T, MPM-B1304M		
MPM-B1651F, MPM-B1653C		
MPM-B1651M, MPM-B1652E, MPM-B1652F, MPM-B1653E	2090-CP*x*M7DF-10AA*xx* (standard, non-flex) 2090-CP*x*M7DF-10AF*xx* (continuous-flex)	
MPM-B2152C, MPM-B2153B		
MPM-B1653F	2090-CP*x*M7DF-08AA*xx* (standard, non-flex) 2090-CP*x*M7DF-08AF*xx* (continuous-flex)	
MPM-B2152F, MPM-B2152M, MPM-B2153E, MPM-B2153F, MPM-B2154B, MPM-B2154E, MPM-B2154F		

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Bulletin MPM Motor Performance Specifications with Ultra3000 (400V class) Drives

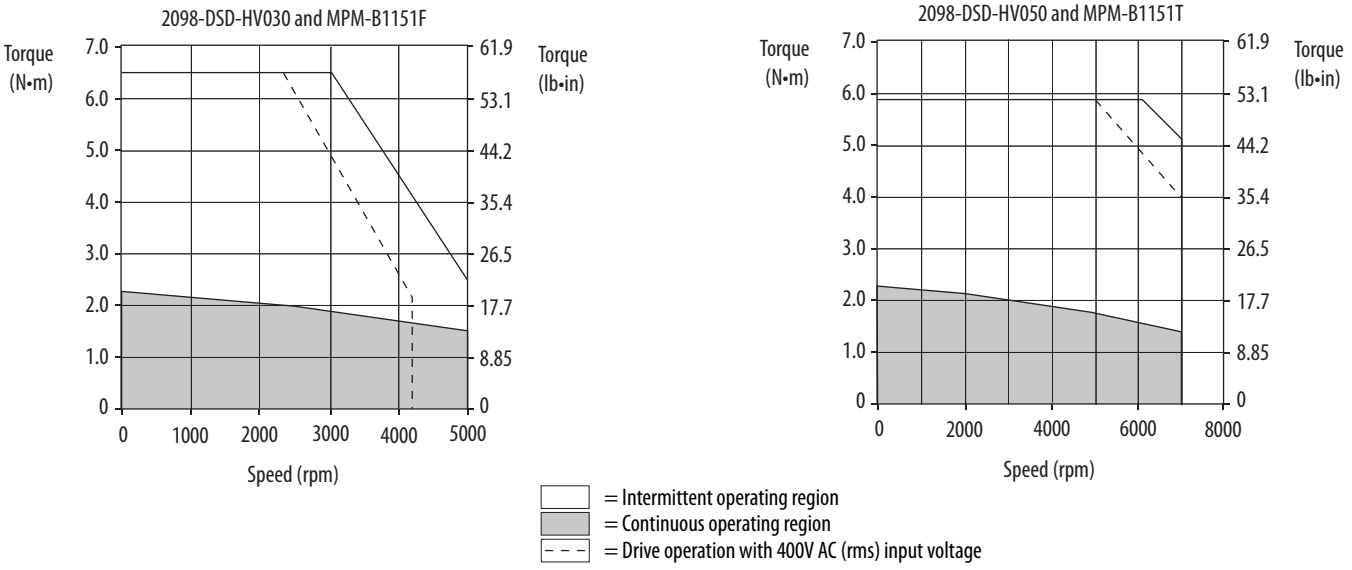
Rotary Motor	Speed, base rpm	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPM-B1151F	3000	5000	2.71	2.3 (20.3)	9.9	6.6 (58.4)	0.75	2098-DSD-HV030
MPM-B1151T	6000	7000	5.62	2.3 (20.3)	14.0	4.4 (38.9)	0.90	2098-DSD-HV030
					20.5	5.8 (51.3)		2098-DSD-HV050
MPM-B1152C	1500	3000	3.61	5.0 (44.2)	12.4	13.5 (119)	1.20	2098-DSD-HV030
MPM-B1152F	3000	5200	6.17	5.0 (44.2)	14.0	9.6 (84.9)	1.40	2098-DSD-HV030
					21.1	13.3 (118)		2098-DSD-HV050
MPM-B1152T	6000	7000	11.02	5.0 (44.2)	22.0	8.6 (76.1)	1.40	2098-DSD-HV050
					37.8	13.5 (119)		2098-DSD-HV100
MPM-B1153E	2250	3500	6.21	6.5 (57.5)	14.0	13.8 (122)	1.40	2098-DSD-HV030
					21.6	19.7 (174)		2098-DSD-HV050
MPM-B1153F	3000	5500	9.20	6.4 (56.6)	22.0	14.6 (129)	1.40	2098-DSD-HV050
					32.0	19.7 (174)		2098-DSD-HV100
MPM-B1153T	6000	7000	15.95	6.4 (56.6)	46.0	14.8 (131)	1.45	2098-DSD-HV100
					55.4	16.5 (146)		2098-DSD-HV150
MPM-B1302F	3000	4500	8.57	6.6 (58.4)	22.0	13.2 (117)	1.65	2098-DSD-HV050
MPM-B1302M	4500	6000	12.57	6.6 (58.4)	32.4	13.3 (118)	1.65	2098-DSD-HV100
MPM-B1302T	6000	7000	16.83	6.7 (59.3)	43.4	13.3 (118)	1.65	2098-DSD-HV100
MPM-B1304C	1500	2750	7.00	10.3 (91.1)	14.0	18.7 (165)	2.00	2098-DSD-HV030
					22.0	26.8 (237)		2098-DSD-HV050
MPM-B1304E	2250	4000	10.75	10.2 (90.3)	22.0	19.1 (169)	2.20	2098-DSD-HV050
					34.2	27.1 (240)		2098-DSD-HV100
MPM-B1304M	4500	6000	19.02	10.4 (92.0)	46.0	21.9 (194)	2.20	2098-DSD-HV100
					60.6	27.1 (240)		2098-DSD-HV150
MPM-B1651C	1500	3500	10.21	11.4 (101)	22.0	19.5 (172)	2.50	2098-DSD-HV050
					29.2	23.2 (205)		2098-DSD-HV100
MPM-B1651F	3000	5000	17.75	11.4 (101)	46.0	21.8 (193)	2.50	2098-DSD-HV100
					50.9	23.2 (205)		2098-DSD-HV150
MPM-B1651M	4500	5000	22.46	11.3 (100)	46.0	18.5 (164)	2.50	2098-DSD-HV100
					56.8	21.4 (189)		2098-DSD-HV150
MPM-B1652C	1500	2500	11.51	16.4 (145)	22.0	30.0 (265)	3.80	2098-DSD-HV050
					33.6	40.2 (356)		2098-DSD-HV100
MPM-B1652E	2250	3500	20.94	21.1 (187)	46.0	39.1 (346)	4.30	2098-DSD-HV100
					60.5	48.0 (425)		2098-DSD-HV150
MPM-B1652F	3000	4500	28.74	21.1 (187)	68.0	39.1 (346)	4.30	2098-DSD-HV150
					84.1	45.0 (398)		2098-DSD-HV220
MPM-B1653C	1500	2500	20.05	26.7 (236)	46.0	56.1 (496)	4.60	2098-DSD-HV100
					59.2	67.7 (599)		2098-DSD-HV150

Bulletin MPM Motor Performance Specifications with Ultra3000 (400V class) Drives (continued)

Rotary Motor	Speed, base rpm	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPM-B1653E	2250	3500	27.00	26.8 (237)	68.0	58.8 (520)	5.10	2098-DSD-HV150
					72.9	62.0 (549)		2098-DSD-HV220
MPM-B1653F	3000	4000	34.94	31.0 (274)	94.0	56.1 (496)	5.10	2098-DSD-HV220
MPM-B2152C	1500	2500	27.40	36.7 (325)	55.4	72.2 (639)	5.60	2098-DSD-HV150
MPM-B2152F	3000	4500	43.54	33.9 (300)	94.0	69.8 (618)	5.90	2098-DSD-HV220
MPM-B2152M	4500	5000	44.58	34.1 (302)	94.0	52.9 (468)	5.90	2098-DSD-HV220
MPM-B2153B	1250	2000	24.06	47.1 (417)	46.0	81.5 (721)	6.80	2098-DSD-HV100
				48.0 (425)	60.0	101.2 (895)		2098-DSD-HV150
MPM-B2153E	2250	3000	39.63	47.9 (424)	94.0	97.1 (859)	7.20	2098-DSD-HV220
MPM-B2153F	3000	3800	43.86	45.6 (403)	94.0	94.8 (839)	7.20	2098-DSD-HV220
MPM-B2154B	1250	2000	35.46	62.7 (555)	94.0	149 (1319)	6.90	2098-DSD-HV220
MPM-B2154E	2250	3000	43.68	55.9 (495)	94.0	108 (956)	7.50	2098-DSD-HV220
MPM-B2154F	3000	3300	44.40	56.2 (497)	83.6	87.9 (778)	7.50	2098-DSD-HV220

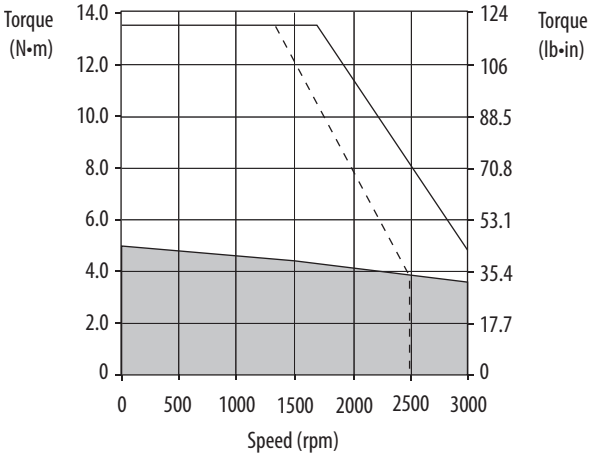
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves

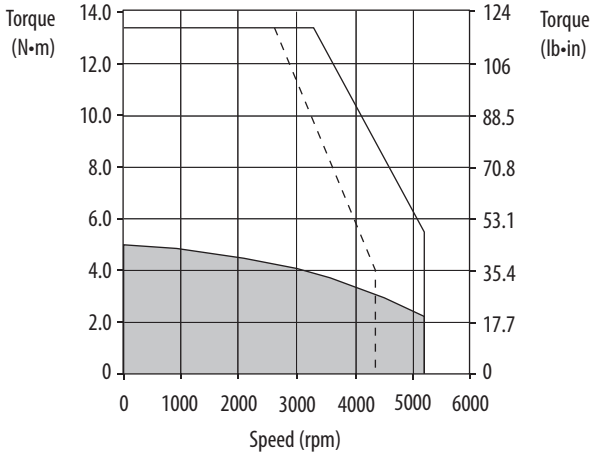


Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

2098-DSD-HV030 and MPM-B1152C



2098-DSD-HV050 and MPM-B1152F



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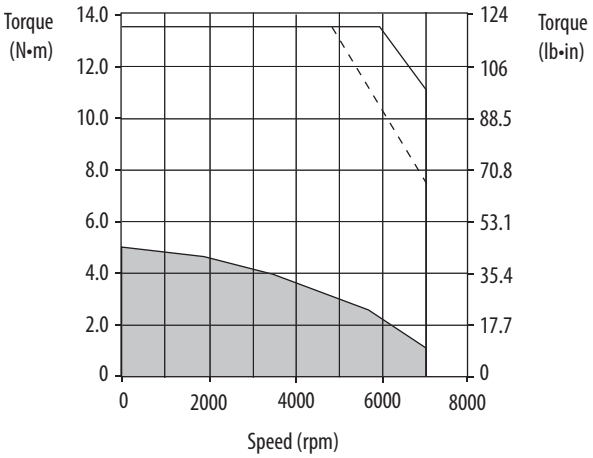

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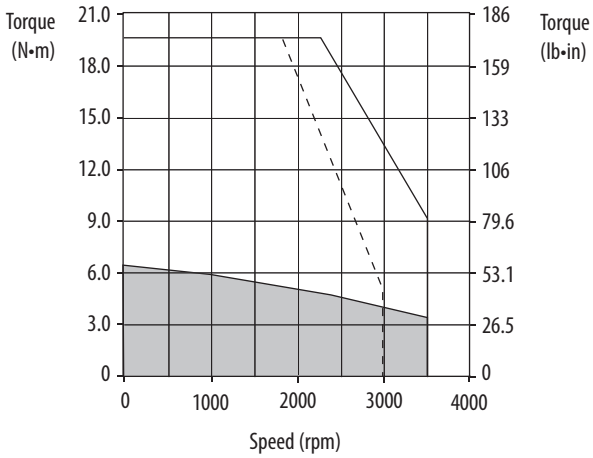

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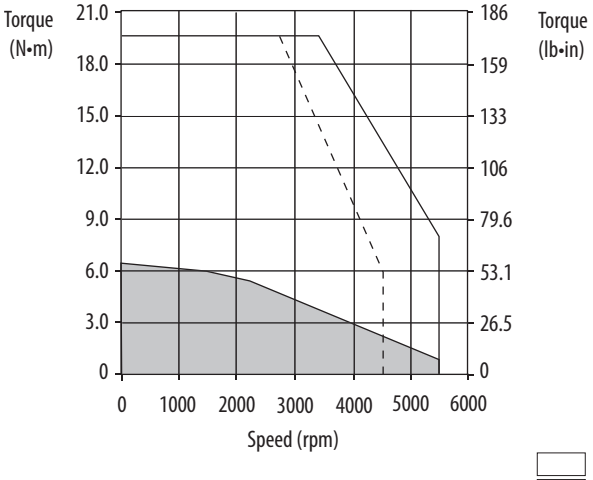

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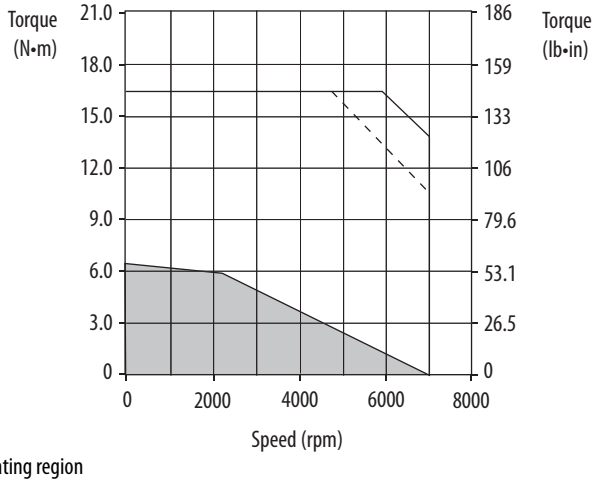
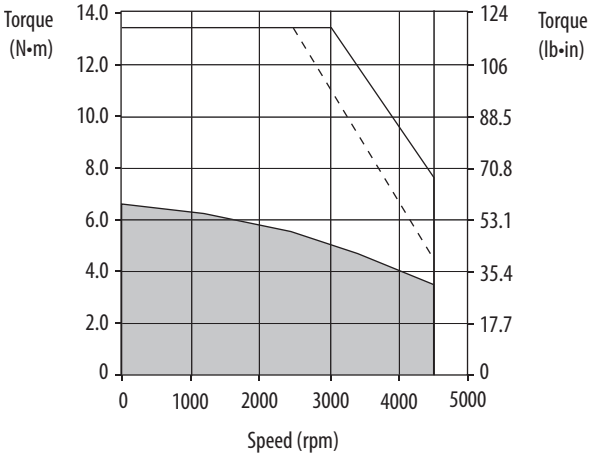


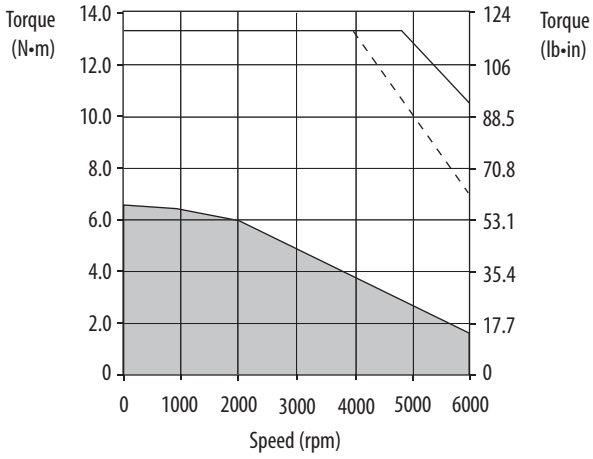
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

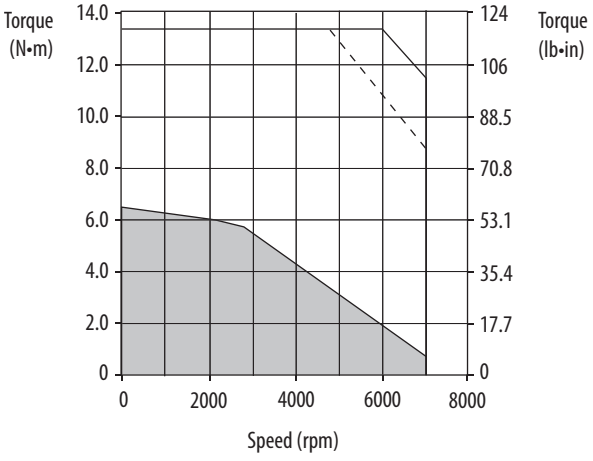
2098-DSD-HV050 and MPM-B1302F



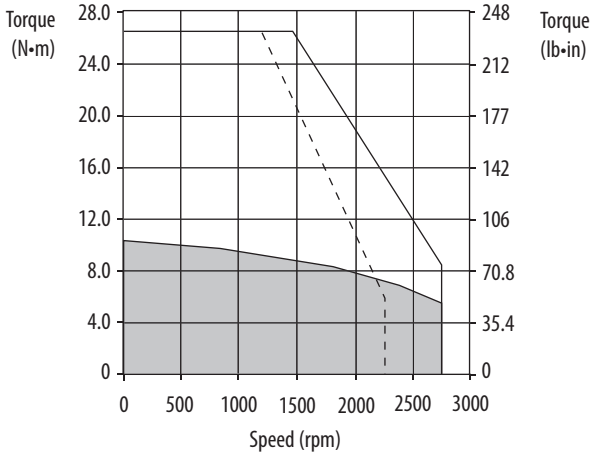
2098-DSD-HV100 and MPM-B1302M



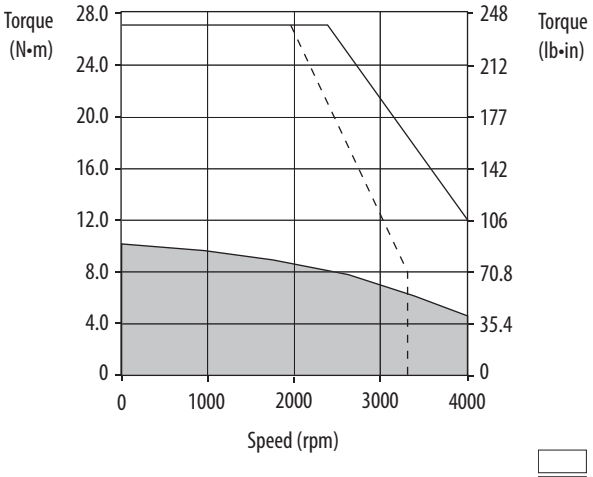
2098-DSD-HV100 and MPM-B1302T



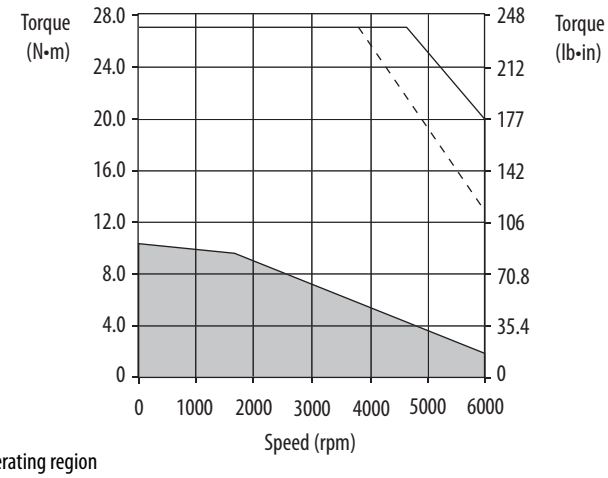
2098-DSD-HV050 and MPM-B1304C



2098-DSD-HV100 and MPM-B1304E



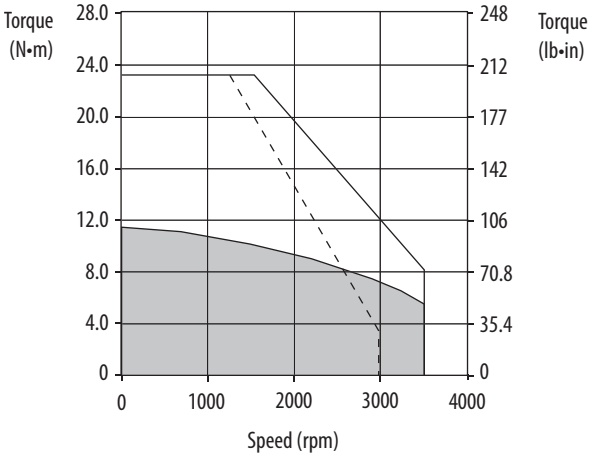
2098-DSD-HV150 and MPM-B1304M



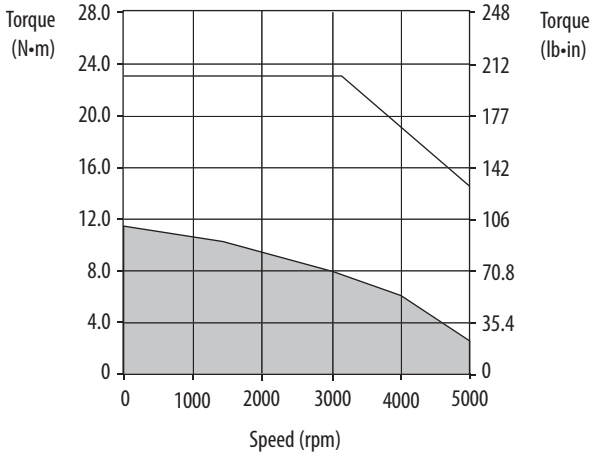
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

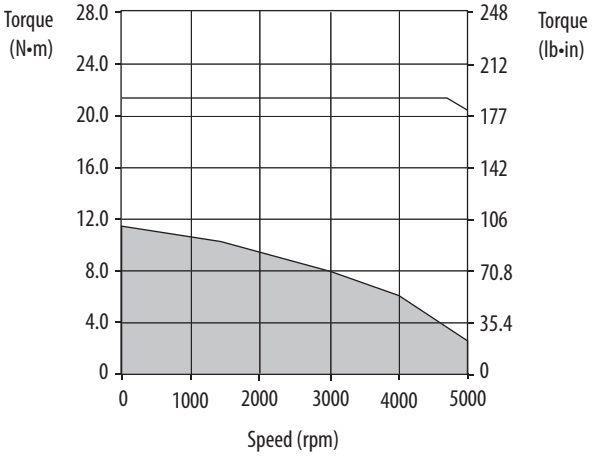
2098-DSD-HV100 and MPM-B1651C



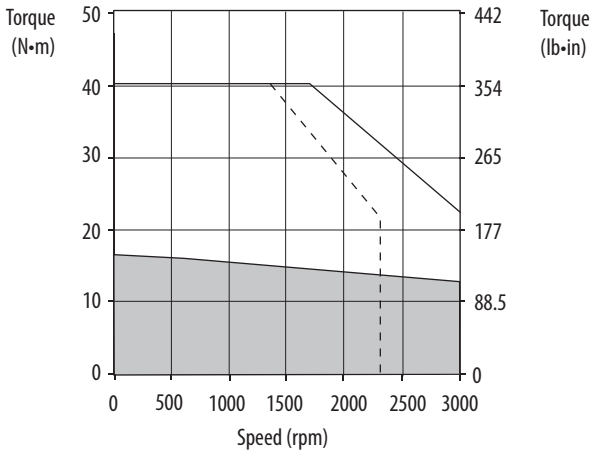
2098-DSD-HV150 and MPM-B1651F



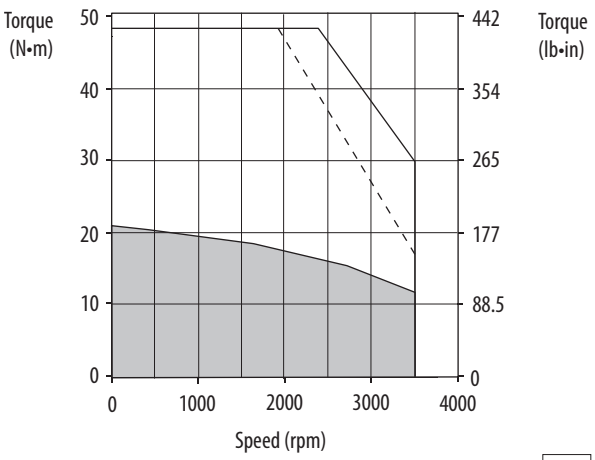
2098-DSD-HV150 and MPM-B1651M



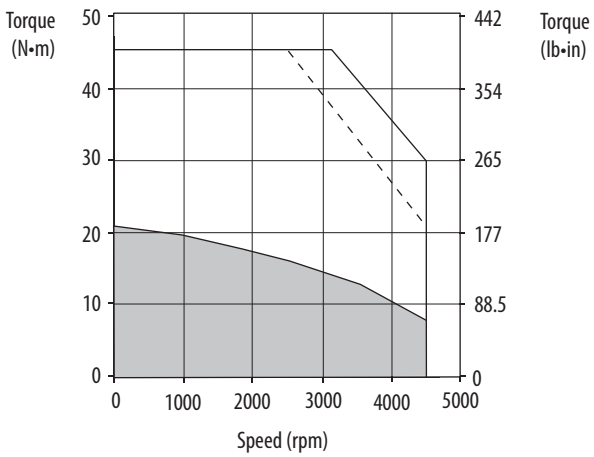
2098-DSD-HV100 and MPM-B1652C



2098-DSD-HV150 and MPM-B1652E



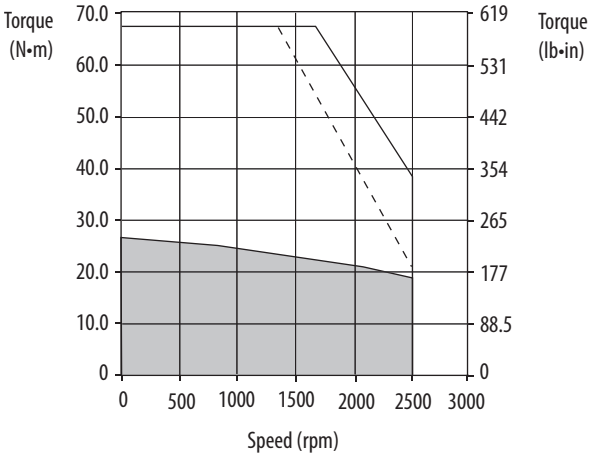
2098-DSD-HV220 and MPM-B1652F



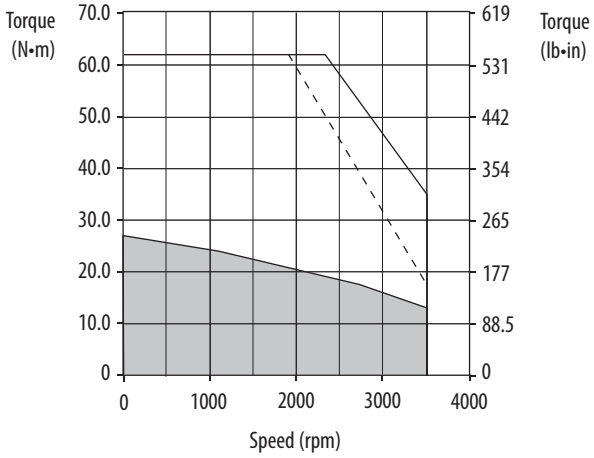
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

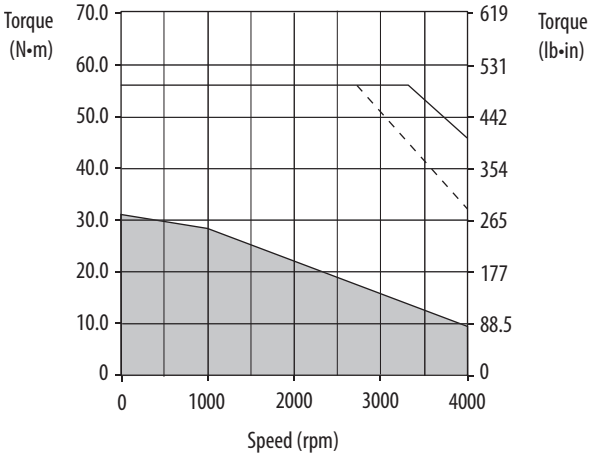
2098-DSD-HV150 and MPM-B1653C



2098-DSD-HV220 and MPM-B1653E



2098-DSD-HV220 and MPM-B1653F



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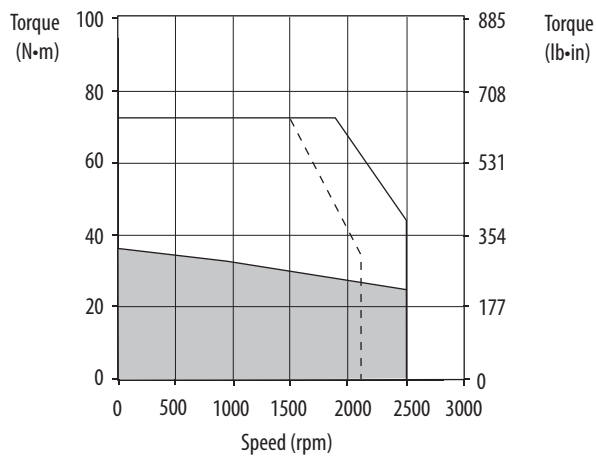
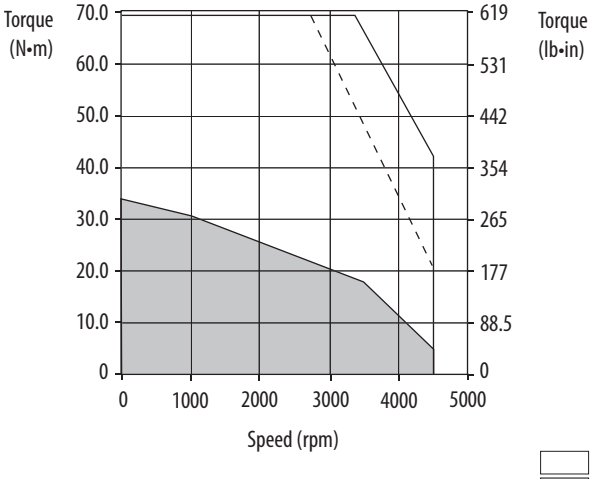


2098-DSD-HV220 and MPM-B2152F



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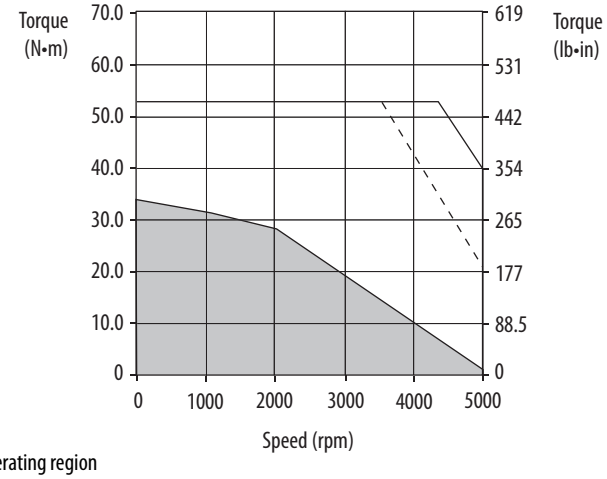
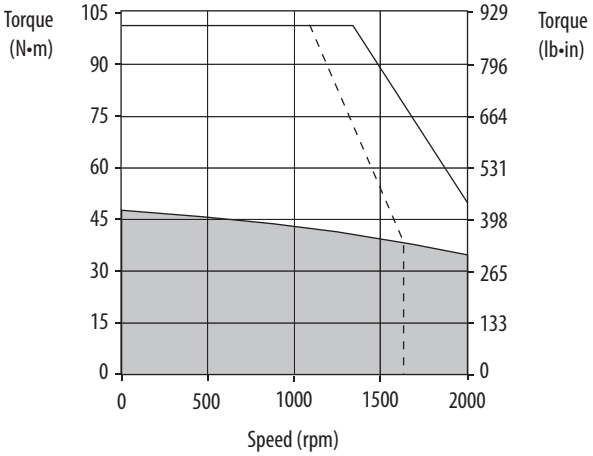


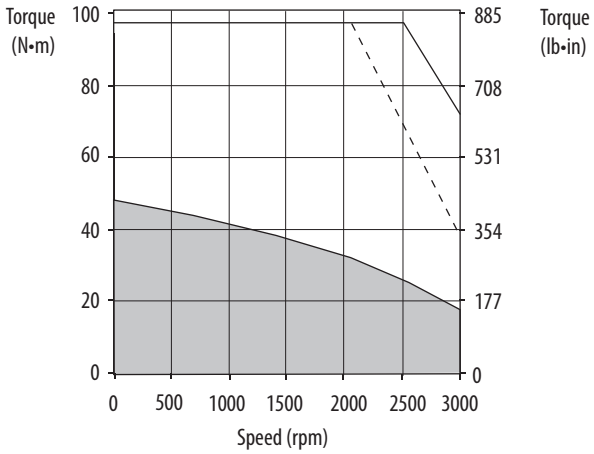
= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Medium Inertia Motor Curves (continued)

2098-DSD-HV150 and MPM-B2153B



2098-DSD-HV220 and MPM-B2153E



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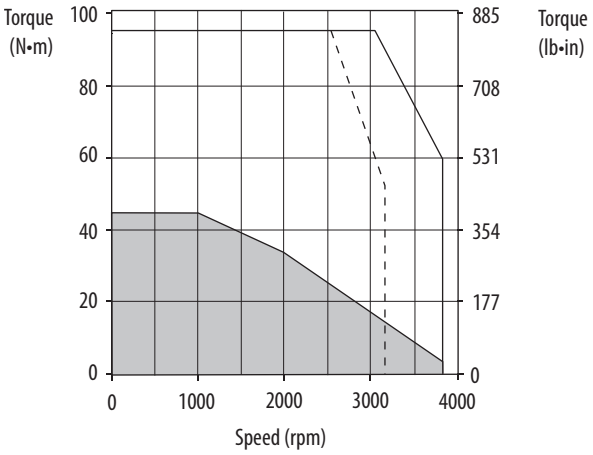

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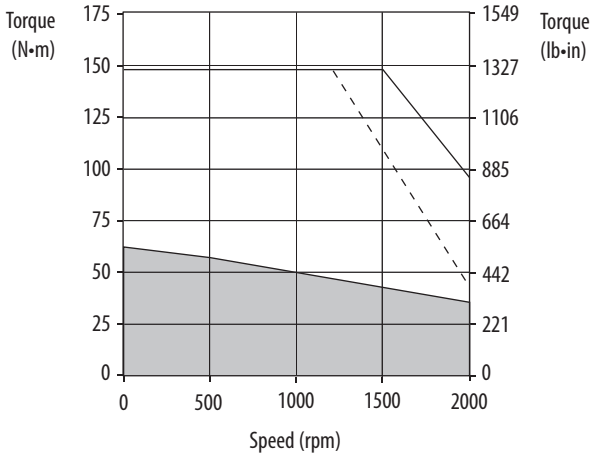

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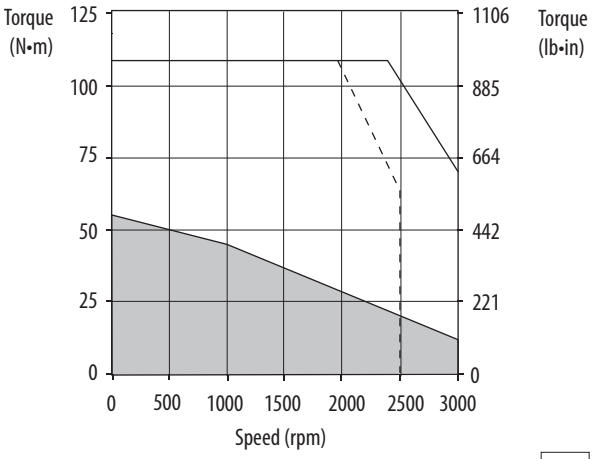

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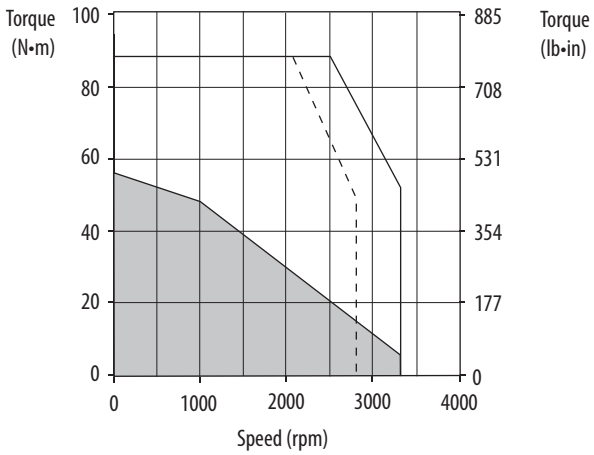


= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (200V class) Drives with MP-Series Food Grade Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with MP-Series food-grade motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPF Motor Cable Combinations

Motor Cat. No. (200V class)	Motor Power Cable	Motor Feedback Cable (1)
MPF-A310P, MPF-A320H, MPF-A320P, MPF-A330P	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPF-A430H		
MPF-A430P	2090-CP*x*M7DF-14AA*xx* (standard, non-flex) 2090-CP*x*M7DF-14AF*xx* (continuous-flex)	
MPF-A4530K, MPF-A4540F		
MPF-A540K	2090-CP*x*M7DF-08AA*xx* (standard, non-flex) 2090-CP*x*M7DF-08AF*xx* (continuous-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

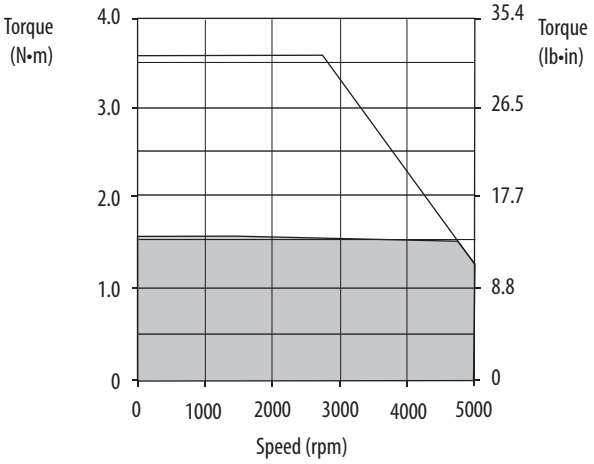
Bulletin MPF Motor Performance Specifications with Ultra3000 (200V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
MPF-A310P	5000	2.50	0.79 (7)	7.5	1.92 (17)	0.73	2098-DSD-005
		4.85	1.58 (14)	14	3.61 (32)		2098-DSD-010
MPF-A320H	3500	5.0	2.48 (22)	15	6.44 (57)	1.0	2098-DSD-010
		6.1	3.05 (27)	19.3	7.91 (70)		2098-DSD-020
MPF-A320P	5000	5.0	1.69 (15)	15	3.95 (35)	1.3	2098-DSD-010
		9.0	3.05 (27)	29.5	7.91 (70)		2098-DSD-020
MPF-A330P	5000	12.0	4.18 (37)	30	9.60 (85)	1.6	2098-DSD-030
				38	11.1 (98)		2098-DSD-075
MPF-A430H	3500	12.2	6.21 (55)	30	14.7 (130)	1.8	2098-DSD-030
				45	19.8 (175)		2098-DSD-075
MPF-A430P	5000	15.0	5.42 (48)	30	10.2 (90)	1.9	2098-DSD-030
		16.8	5.99 (53)	67	19.8 (175)		2098-DSD-075
MPF-A4530K	4000	15.0	6.21 (55)	30	11.3 (100)	2.3	2098-DSD-030
		19.5	8.13 (72)	62	20.3 (180)		2098-DSD-075
MPF-A4540F	3000	15.0	8.25 (73)	30	15.8 (140)	2.5	2098-DSD-030
		18.4	10.2 (90)	58	27.1 (240)		2098-DSD-075
MPF-A540K	4000	41.5	19.4 (172)	120	48.6 (430)	4.1	2098-DSD-150

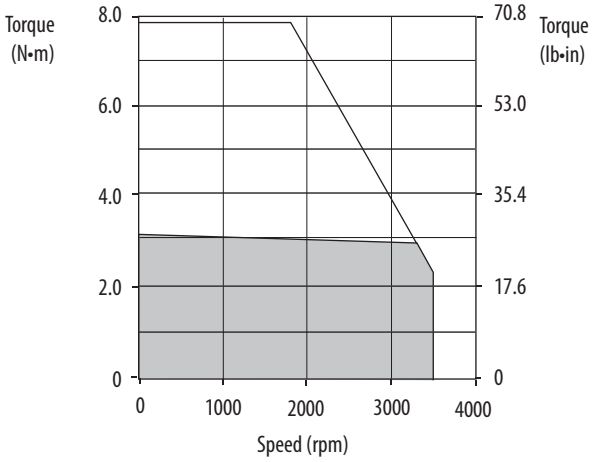
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/MP-Series Food Grade Motor Curves

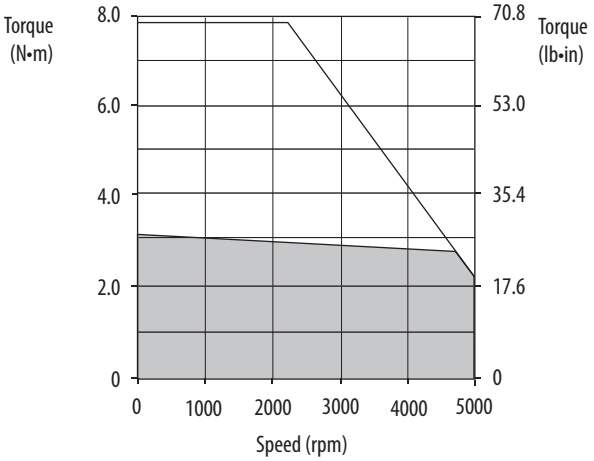
2098-DSD-010 and MPF-A310P



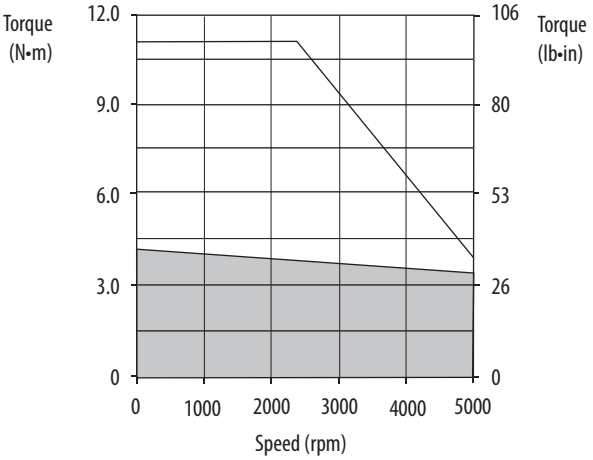
2098-DSD-020 and MPF-A320H



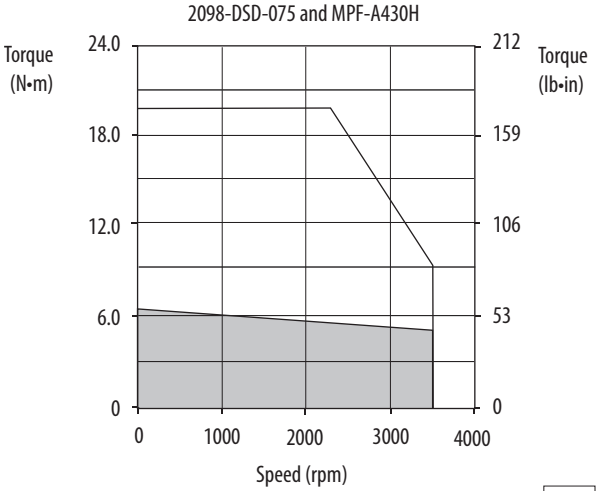
2098-DSD-020 and MPF-A320P



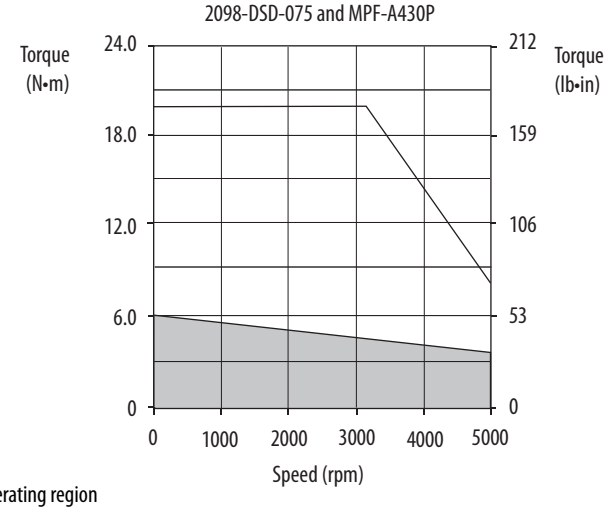
2098-DSD-075 and MPF-A330P



2098-DSD-075 and MPF-A430H



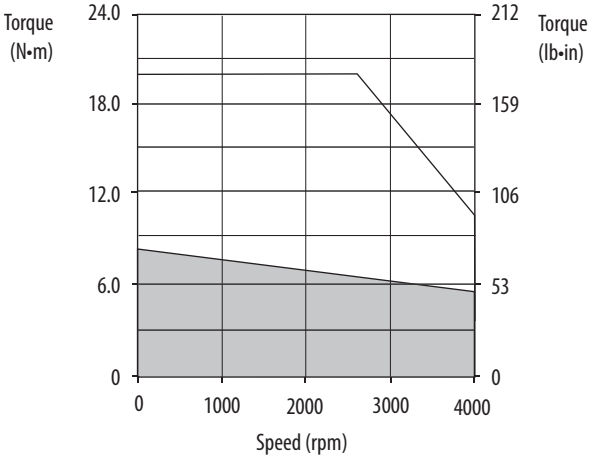
2098-DSD-075 and MPF-A430P



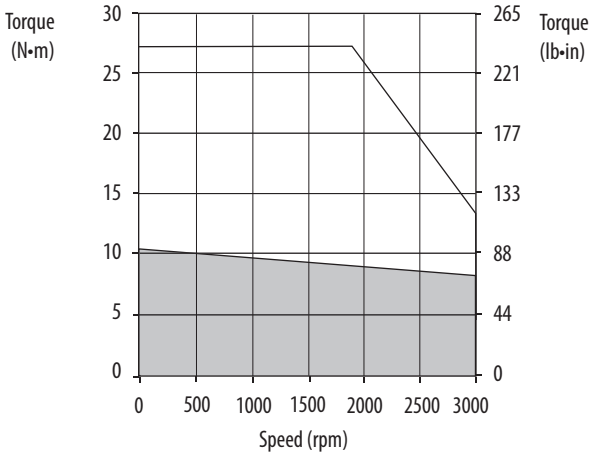
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/MP-Series Food Grade Motor Curves (continued)

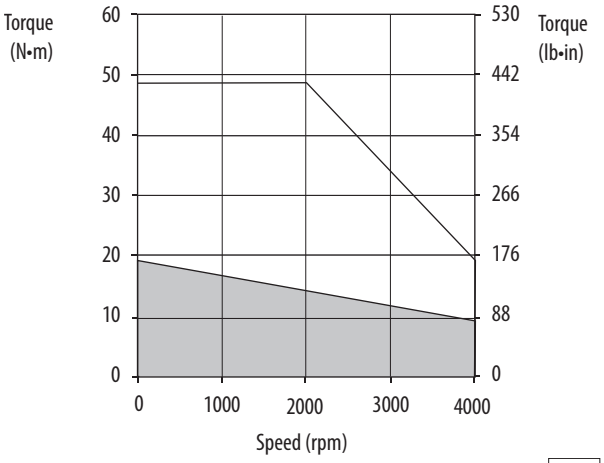
2098-DSD-075 and MPF-A4530K



2098-DSD-075 and MPF-A4540F



2098-DSD-150 and MPF-A540K



= Intermittent operating region
= Continuous operating region

Ultra3000 (400V class) Drives with MP-Series Food Grade Motors

This section provides system combination information for the Ultra3000 (400V class) drives when matched with MP-Series food-grade motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPF Motor Cable Combinations

Motor Cat. No. (400V class)	Motor Power Cable	Motor Feedback Cable (1)
MPF-B310P, MPF-B320P, MPF-B330P	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPF-B430P		
MPF-B4530K, MPF-B4540F		
MPF-B540K	2090-CP*x*M7DF-10AA*xx* (standard, non-flex) 2090-CP*x*M7DF-10AF*xx* (continuous-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

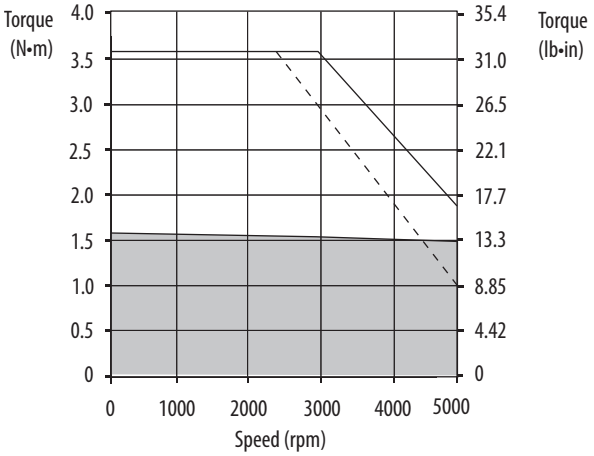
Bulletin MPF Motor Performance Specifications with Ultra3000 (400V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A (0-pk)	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A (0-pk)	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPF-B310P	5000	2.30	1.58 (14)	7.1	3.61 (32)	0.77	2098-DSD-HV030
MPF-B320P	5000	4.24	3.05 (27)	14.0	7.34 (65)	1.5	2098-DSD-HV030
MPF-B330P	5000	5.70	4.18 (37)	14.0	8.59 (76)	1.6	2098-DSD-HV030
				19.0	11.1 (98)		2098-DSD-HV050
MPF-B430P	5000	9.20	6.55 (58)	22.0	12.9 (114)	2.0	2098-DSD-HV050
				32.0	19.8 (175)		2098-DSD-HV100
MPF-B4530K	4000	9.90	8.25 (73)	22.0	14.5 (128)	2.4	2098-DSD-HV050
				31.0	20.3 (180)		2098-DSD-HV100
MPF-B4540F	3000	9.10	10.2 (90)	22.0	22.0 (195)	2.5	2098-DSD-HV050
				29.0	27.1 (240)		2098-DSD-HV100
MPF-B540K	4000	20.5	19.4 (172)	46.0	33.9 (300)	4.1	2098-DSD-HV100
				60.0	45.2 (400)		2098-DSD-HV150

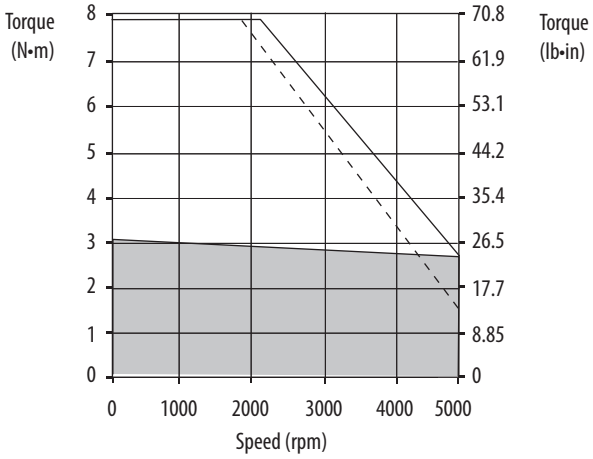
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/MP-Series Food Grade Motor Curves

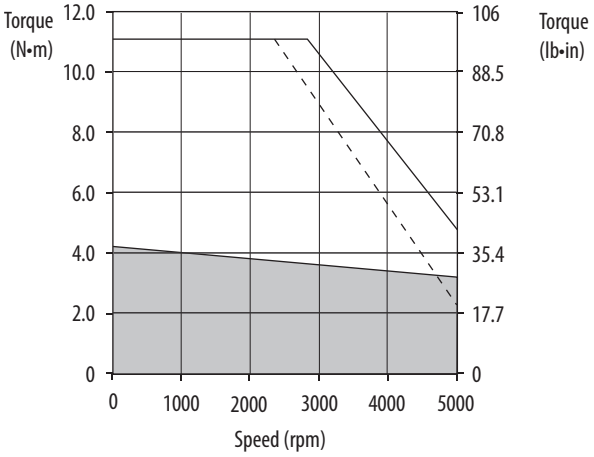
2098-DSD-HV030 and MPF-B310P



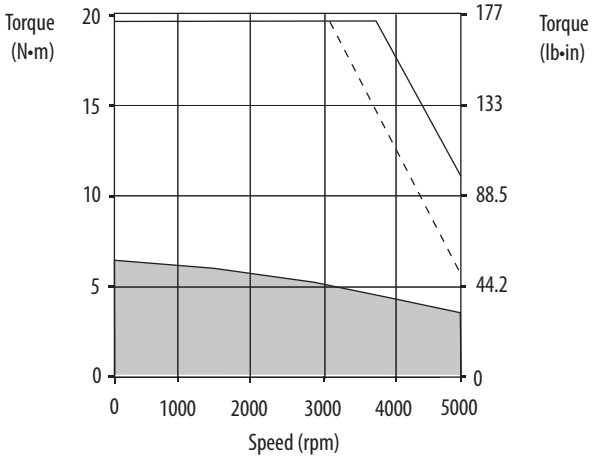
2098-DSD-HV030 and MPF-B320P



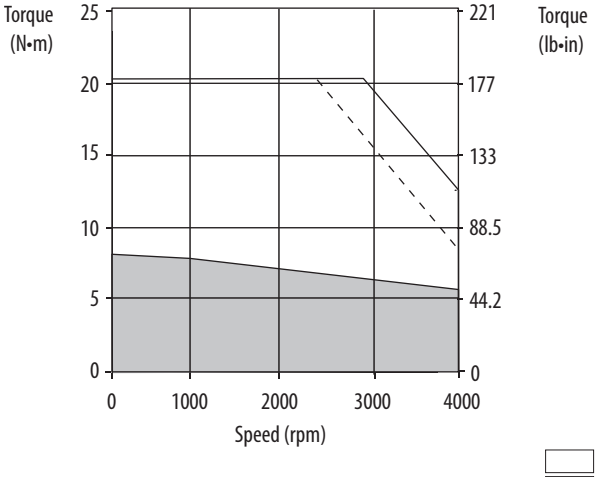
2098-DSD-HV050 and MPF-B330P



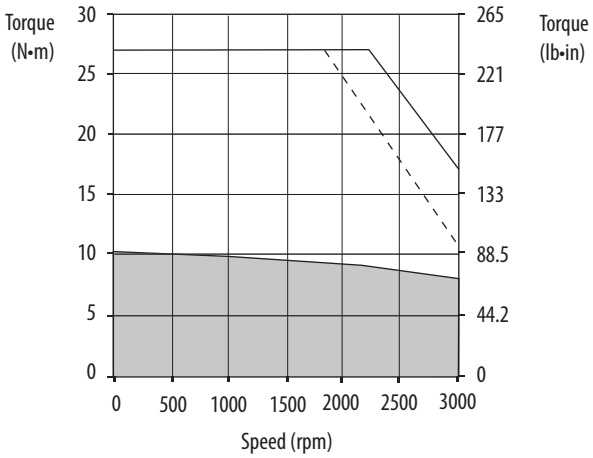
2098-DSD-HV100 and MPF-B430P



2098-DSD-HV100 and MPF-B4530K

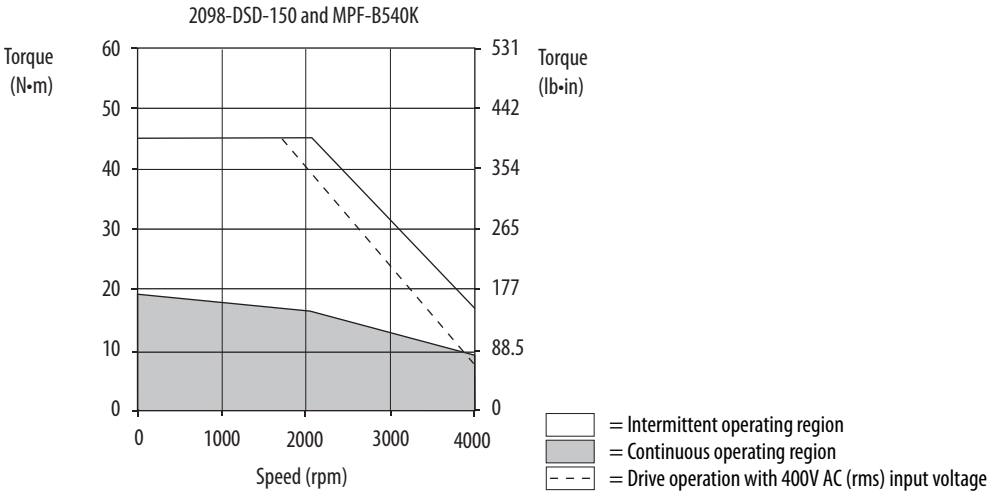


2098-DSD-HV100 and MPF-B4540F



= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 (400V class) Drives/MP-Series Food Grade Motor Curves (continued)



Ultra3000 (200V class) Drives with MP-Series Stainless Steel Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with MP-Series stainless-steel motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPS Motor Cable Combinations

Motor Cat. No. (200V class)	Motor Power Cable	Motor Feedback Cable (1)
MPS-A330P	2090-XXNPMF-16S*xx* (standard, non-flex) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPS-A4540F		

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

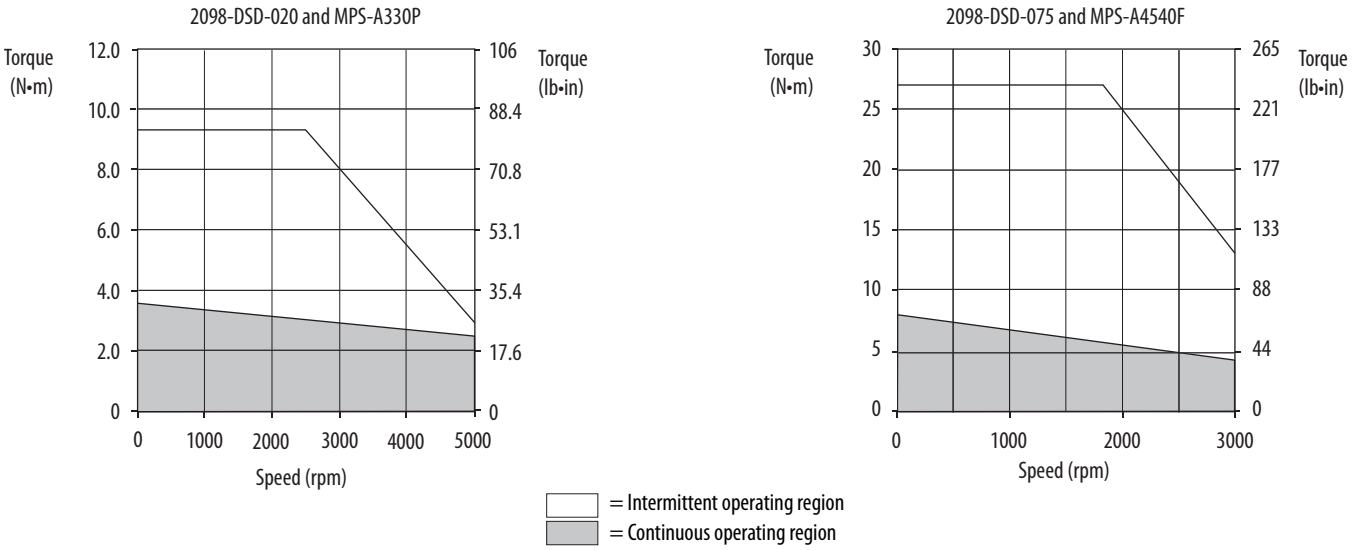
For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Bulletin MPS Motor Performance Specifications with Ultra3000 (200V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
MPS-A330P	5000	5.0	1.80 (16)	15.0	5.20 (46)	1.3	2098-DSD-010
		9.80	3.60 (32)	30.0	9.30 (82)		2098-DSD-020
MPS-A4540F	3000	14.4	8.1 (72)	30.0	15.9 (141)	1.4	2098-DSD-030
				56.0	27.1 (240)		2098-DSD-075

Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/MP-Series Stainless Steel Motor Curves



Ultra3000 (400V class) Drives with MP-Series Stainless Steel Motors

This section provides system combination information for the Ultra3000 (400V class) drives when matched with MP-Series stainless-steel motors. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin MPS Motor Cable Combinations

Motor Cat. No. (400V class)	Motor Power Cable	Motor Feedback Cable (1)
MPS-B330P	2090-XXNPMF-16S*xx* (standard, non-flex) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPS-B4540F		
MPS-B560F	2090-XXNPMF-14S*xx* (standard, non-flex) 2090-CP*x*M4DF-14AF*xx* (continuous-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

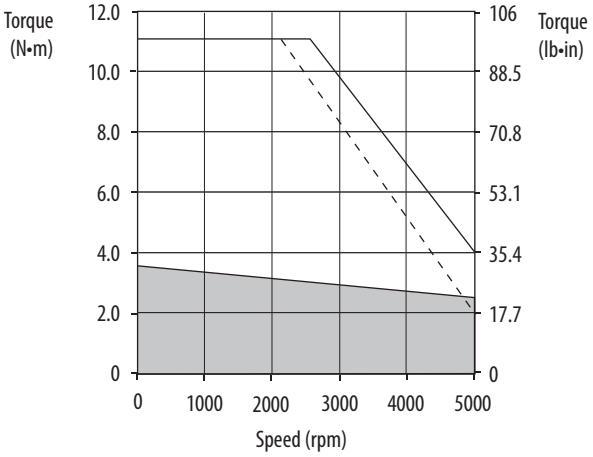
Bulletin MPS Motor Performance Specifications with Ultra3000 (400V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Stall Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 400V-class Drives
MPS-B330P	5000	4.90	3.6 (32)	14.0	8.80 (78)	1.3	2098-DSD-HV030
				19.0	11.10 (98)		2098-DSD-HV050
MPS-B4540F	3000	7.0	8.0 (71)	14.0	15.6 (138)	1.4	2098-DSD-HV030
		7.1	8.1 (72)	22.0	23.5 (208)		2098-DSD-HV050
				26.0	27.1 (240)		2098-DSD-HV100
MPS-B560F	3000	17.0	21.5 (190)	46.0	50.1 (443)	3.5	2098-DSD-HV100
				68.0	67.7 (599)		2098-DSD-HV150

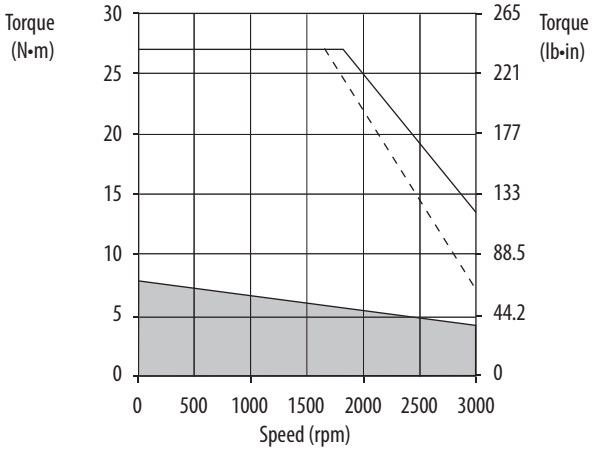
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/MP-Series Stainless Steel Motor Curves

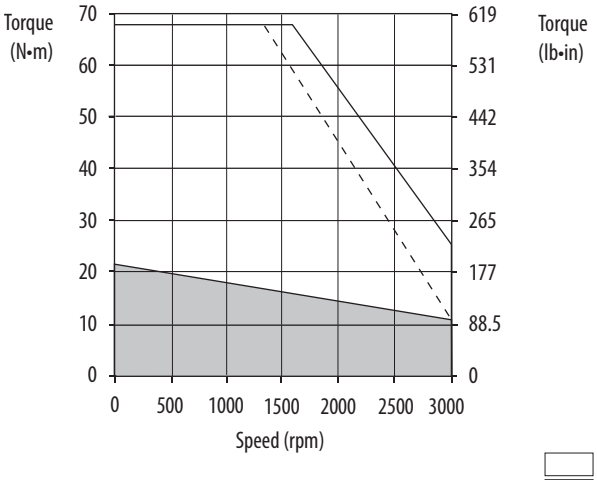
2098-DSD-HV050 and MPS-B330P



2098-DSD-HV100 and MPS-B4540F



2098-DSD-HV150 and MPS-B560F



= Intermittent operating region
= Continuous operating region
= Drive operation with 400V AC (rms) input voltage

Ultra3000 Drives with TL-Series Low Inertia Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with TL-Series™ (Bulletin TLY) low-inertia motors. Compatible TL-Series motors are equipped with incremental encoder feedback. Included are motor power/brake and feedback cable catalog numbers, system performance specifications, and the optimum torque/speed curves.

Bulletin TLY Motor Cable Combinations

Motor Cat. No. (200V class)	Motor Power/Brake Cable	Motor Feedback Cable (1)
TLY-A110T, TLY-A120T, TLY-A130T	2090-CPWM6DF-16AA*xx* (standard, non-flex) without brake 2090-CPBM6DF-16AA*xx* (standard, non-flex) with brake	2090-CFBM6DF-CBAA*xx* or 2090-CFBM6DD-CCAA*xx* (standard, non-flex) Incremental Feedback
TLY-A220T, TLY-A230T		
TLY-A2530P, TLY-A2540P		
TLY-A310M		

(1) For TLY-A*xxxx*-H motors with incremental encoder feedback, use 2090-CFBM6DF-CBAA*xx* flying-lead cables and 2090-UXBB-DM15 connector kit or use 2090-CFBM6DD-CCAA*xx* (15-pin connector) cable on the drive end. Refer to Required Drive Accessories on page 4.

TL-Series (Bulletin TLY-A*xxx*) motors are characterized as having 1000 mm (39.4 in.) cable extensions with circular plastic connectors.
For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Bulletin TLY (non-brake) Performance Specifications with Ultra3000 (200V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
TLY-A110T	6000	0.55	0.096 (0.85)	1.50	0.20 (1.75)	0.041	2098-DSD-005
TLY-A120T		1.03	0.181 (1.60)	2.50	0.36 (3.20)	0.086	2098-DSD-005
TLY-A130T		1.85	0.325 (2.88)	4.90	0.76 (6.70)	0.14	2098-DSD-005
TLY-A220T		2.50	0.576 (5.10)	7.50	1.40 (12.4)	0.35	2098-DSD-005
		3.50	0.836 (7.40)	7.90	1.48 (13.1)		2098-DSD-010
TLY-A230T		5.00	1.17 (10.4)	15.0	2.94 (26.0)	0.44	2098-DSD-010
		5.50	1.30 (11.5)	15.5	3.05 (27.0)		2098-DSD-020
TLY-A2530P	5000	5.00	1.32 (11.7)	15.0	3.73 (33.0)	0.69	2098-DSD-010
		10.0	2.60 (23.0)	21.0	5.20 (46.0)		2098-DSD-020
TLY-A2540P		5.00	1.49 (13.2)	15.0	4.40 (39.0)	0.86	2098-DSD-010
		10.0	2.94 (26.0)	24.8	7.10 (63.0)		2098-DSD-020
TLY-A310M	4500	10.0	3.61 (31.9)	30.0	9.0 (79.6)	0.95	2098-DSD-020

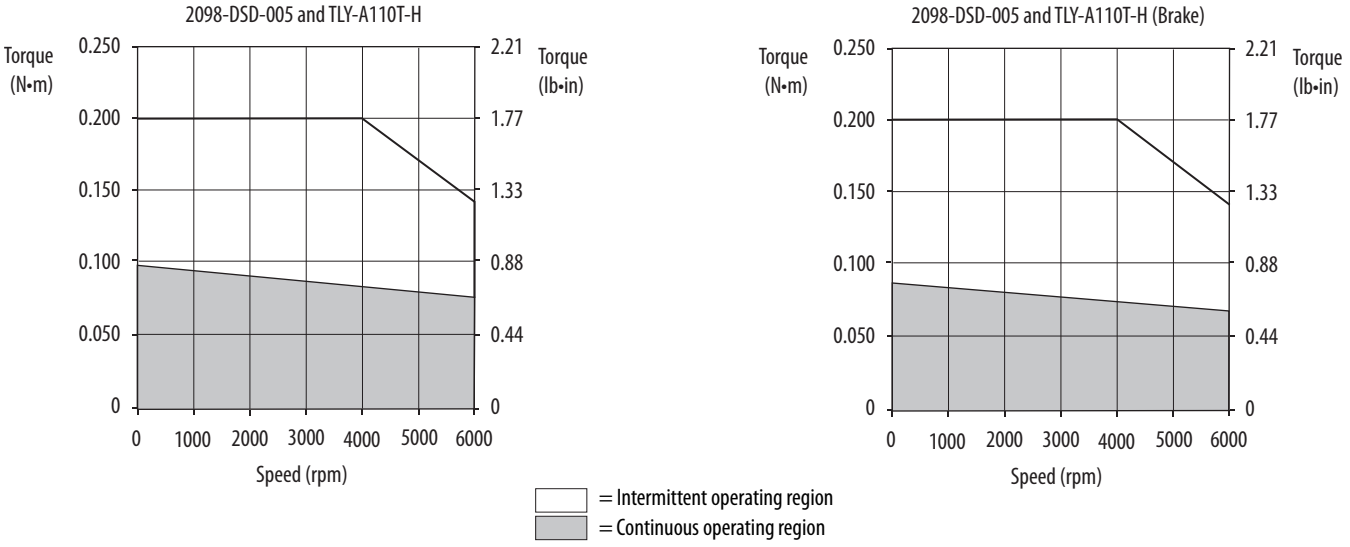
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Bulletin TLY (brake) Performance Specifications with Ultra3000 (200V class) Drives

Rotary Motor	Speed, max rpm	System Continuous Stall Current A 0-pk	System Continuous Stall Torque N•m (lb•in)	System Peak Stall Current A 0-pk	System Peak Torque N•m (lb•in)	Motor Rated Output kW	Ultra3000 200V-class Drives
TLY-A110T	6000	0.50	0.086 (0.76)	1.50	0.20 (1.75)	0.037	2098-DSD-005
TLY-A120T		0.93	0.163 (1.44)	2.50	0.36 (3.20)	0.077	2098-DSD-005
TLY-A130T		1.67	0.293 (2.59)	4.90	0.76 (6.70)	0.13	2098-DSD-005
TLY-A220T		2.50	0.576 (5.10)	7.50	1.40 (12.4)	0.24	2098-DSD-005
		3.15	0.757 (6.70)	7.90	1.48 (13.1)		2098-DSD-010
TLY-A230T		4.95	1.16 (10.3)	15.0	2.94 (26.0)	0.32	2098-DSD-010
				15.5	3.05 (27.0)		2098-DSD-020
TLY-A2530P	5000	5.00	1.32 (11.7)	15.0	3.73 (33.0)	0.55	2098-DSD-010
		10.0	2.60 (23.0)	21.0	5.20 (46.0)		2098-DSD-020
TLY-A2540P		5.0	1.49 (13.2)	15.0	4.40 (39.0)	0.66	2098-DSD-010
		10.0	2.94 (26.0)	24.8	7.10 (63.0)		2098-DSD-020
TLY-A310M	4500	10.0	3.61 (31.9)	30.0	9.0 (79.6)	0.90	2098-DSD-020

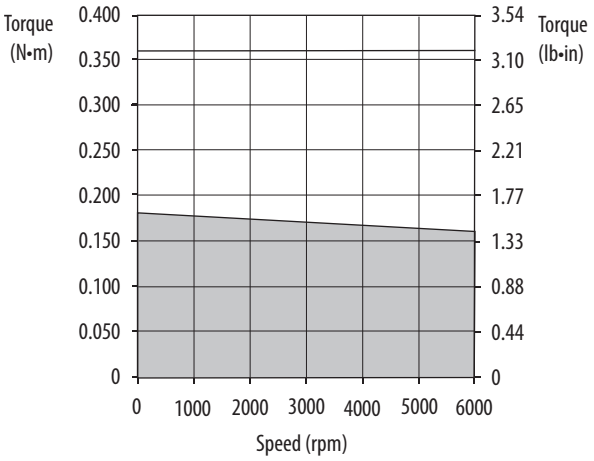
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/TLY-A*xxxx*-H (incremental) Motor Curves

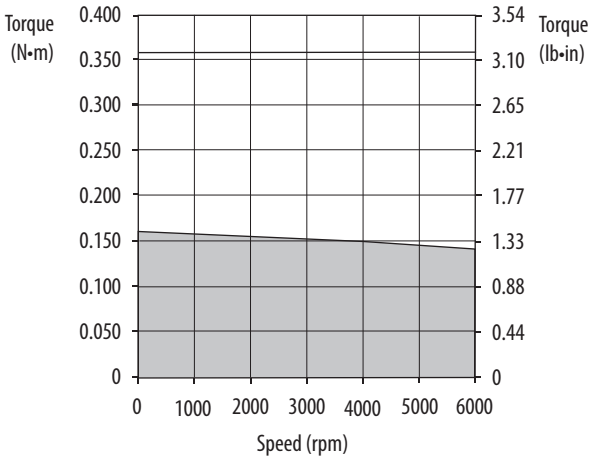


Ultra3000 (200V class) Drives/TLY-A*xxxx*-H (incremental) Motor Curves (continued)

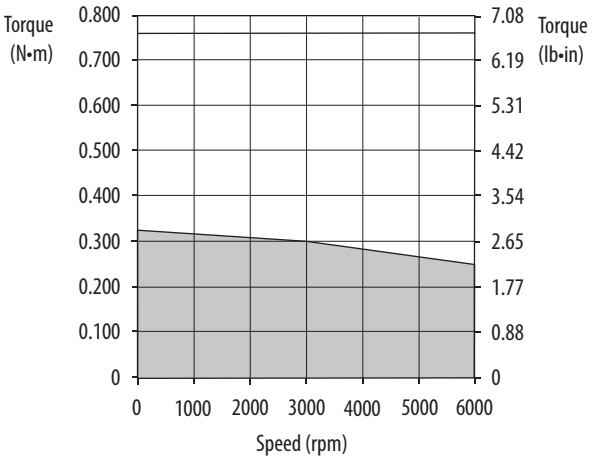
2098-DSD-005 and TLY-A120T-H



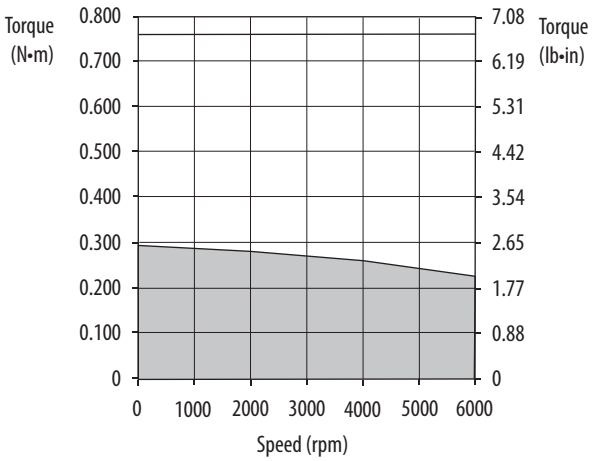
2098-DSD-005 and TLY-A120T-H (Brake)



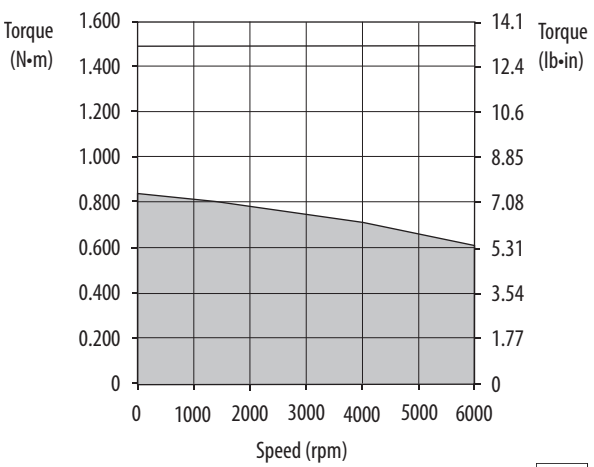
2098-DSD-005 and TLY-A130T-H



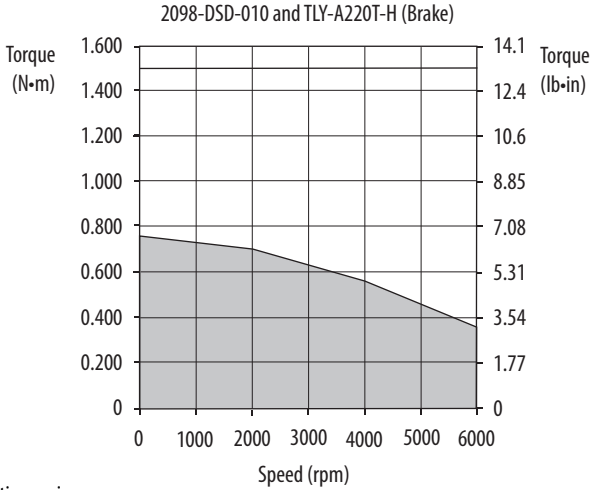
2098-DSD-005 and TLY-A130T-H (Brake)



2098-DSD-010 and TLY-A220T-H



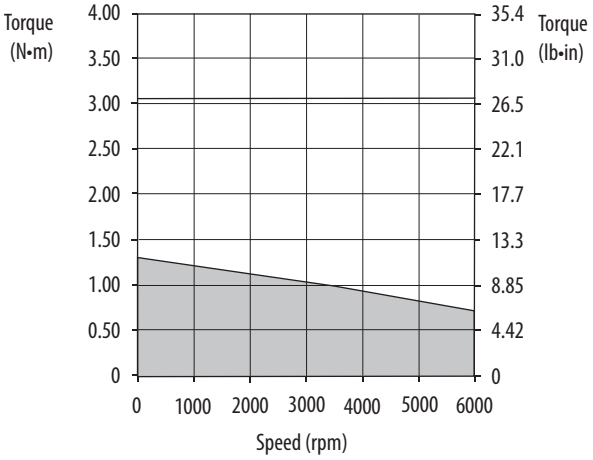
2098-DSD-010 and TLY-A220T-H (Brake)



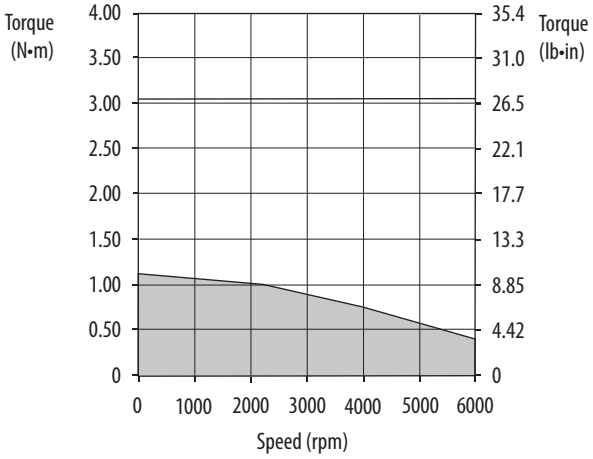
= Intermittent operating region
= Continuous operating region

Ultra3000 (200V class) Drives/TLY-A*xxxx*-H (incremental) Motor Curves (continued)

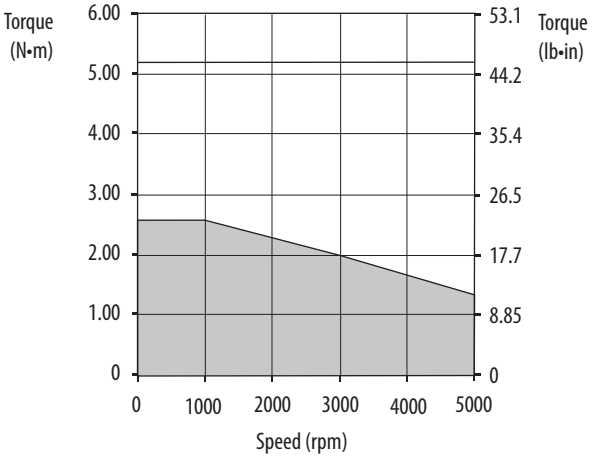
2098-DSD-020 and TLY-A230T-H



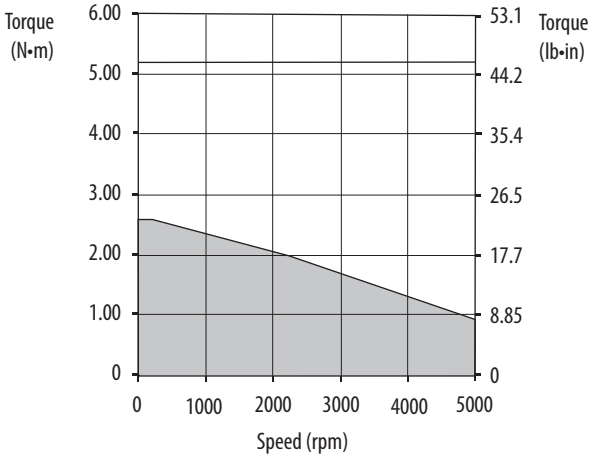
2098-DSD-020 and TLY-A230T-H (Brake)



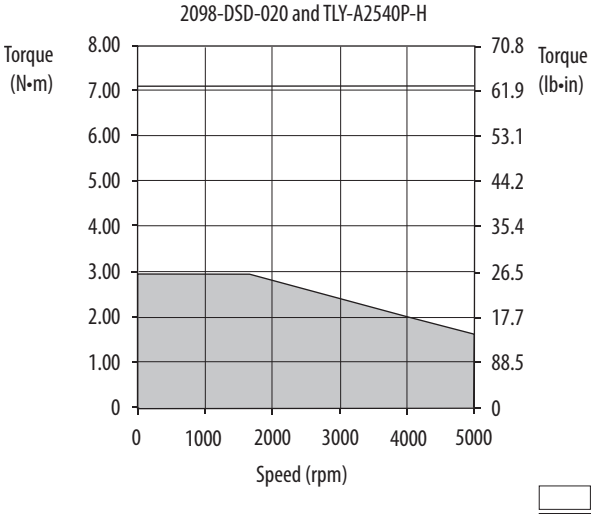
2098-DSD-020 and TLY-A2530P-H



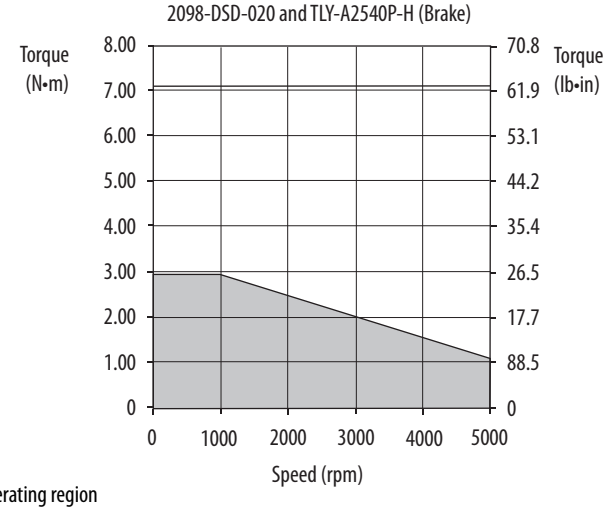
2098-DSD-020 and TLY-A2530P-H (Brake)

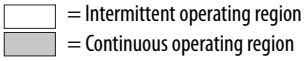


2098-DSD-020 and TLY-A2540P-H

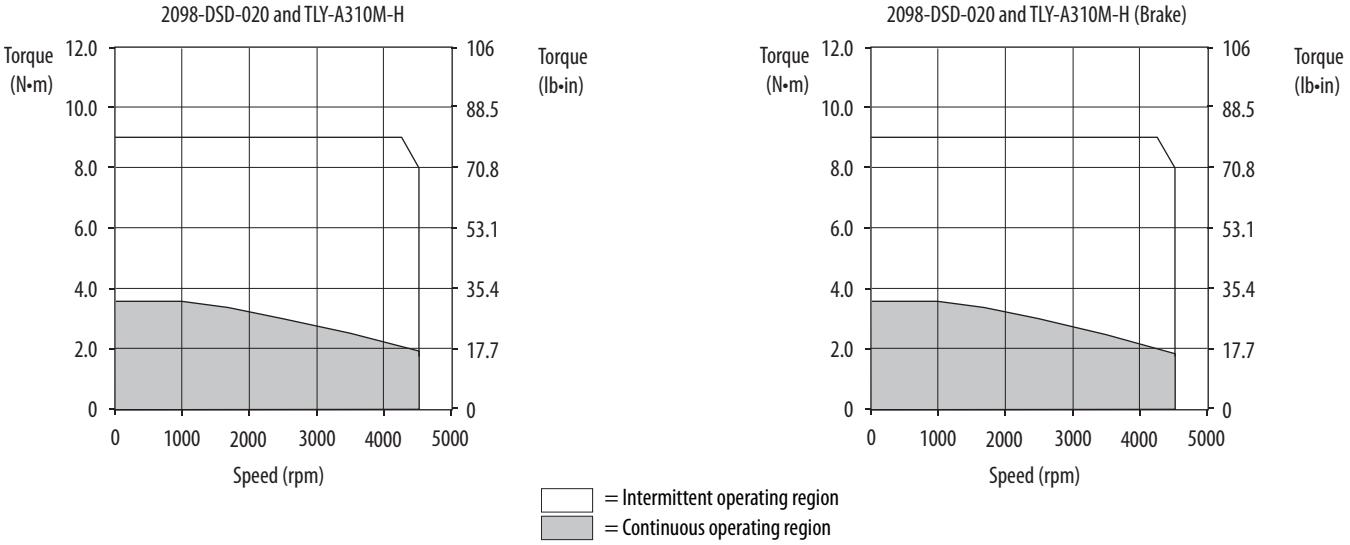


2098-DSD-020 and TLY-A2540P-H (Brake)





Ultra3000 (200V class) Drives/TLY-A*xxxx*-H (incremental) Motor Curves (continued)



Ultra3000 (200V class) Drives with MP-Series Integrated Linear Stages

This section provides system combination information for the Ultra3000 (200V class) drives when matched with MP-Series (200V class) integrated direct-drive or ballscrew linear stages. Included are power/brake and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Linear Stage Cable Combinations

Linear Stage	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPAS-A*xxxx*1-V05S*x*A, MPAS-A*xxxx*2-V20S*x*A	2090-XXNPMF-16S*xx* (standard, non-flex) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPAS-A6*xxx*B-ALM*x*2C, MPAS-A8*xxx*E-ALM*x*2C, MPAS-A9*xxx*K-ALM*x*2C		2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Incremental Feedback

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Linear Stage Performance Specifications with Ultra3000 (200V class) Drives

Linear Stage	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Stage Rated Output kW	Ultra3000 200V-class Drives
MPAS-A*xxxx*1-V05SxA	200 (7.9) (1)	2.50	422 (94.9)	6.10	1212 (272)	0.37	2098-DSD-005
		3.09	521 (117)				2098-DSD-010
MPAS-A*xxxx*2-V20SxA	1124 (44.3) (2)	2.50	254 (57.1)	7.50	798 (179)	0.62	2098-DSD-005
		4.54	462 (104)	9.10	968 (218)		2098-DSD-010
MPAS-A6*xxx*B-ALMO2C	5000 (200)	5.0	97.8 (22.0)	15.0	340 (76.4)	0.32	2098-DSD-010
		5.3	105 (23.6)	15.8	359 (80.7)		2098-DSD-020
MPAS-A6*xxx*B-ALMS2C		2.5	29.6 (6.65)	7.5	150 (33.7)	0.29	2098-DSD-005
		4.7	83.0 (18.7)	14.2	312 (70.1)		2098-DSD-010
MPAS-A8*xxx*E-ALMO2C		5.0	129 (29.0)	15.0	366 (82.3)	0.53	2098-DSD-010
		7.0	189 (42.5)	18.5	456 (103)		2098-DSD-020
MPAS-A8*xxx*E-ALMS2C		5.0	120 (27.0)	15.0	356 (80.0)	0.48	2098-DSD-010
		6.3	159 (35.7)	16.7	399 (89.7)		2098-DSD-020
MPAS-A9*xxx*K-ALMO2C		5.0	207 (46.5)	15.0	553 (124)	0.77	2098-DSD-010
		6.7	285 (64.1)	18.3	680 (153)		2098-DSD-020
MPAS-A9*xxx*K-ALMS2C		5.0	195 (43.8)	15.0	545 (123)	0.69	2098-DSD-010
		6.1	245 (55.1)	16.5	601 (135)		2098-DSD-020

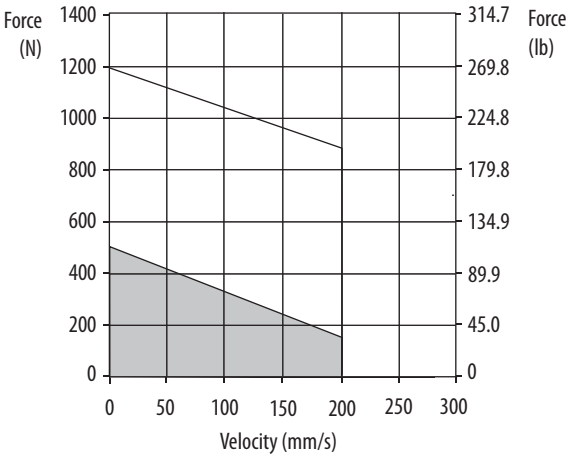
(1) For 900 mm stroke length, maximum speed is 176 mm/s (6.9 in/s). For 1020 mm stroke length, maximum speed is 143 mm/s (5.6 in/s).

(2) For 780 mm stroke length, maximum speed is 889 mm/s (35.0 in/s). For 900 mm stroke length, maximum speed is 715 mm/s (28.2 in/s). For 1020 mm stroke length, maximum speed is 582 mm/s (22.9 in/s).

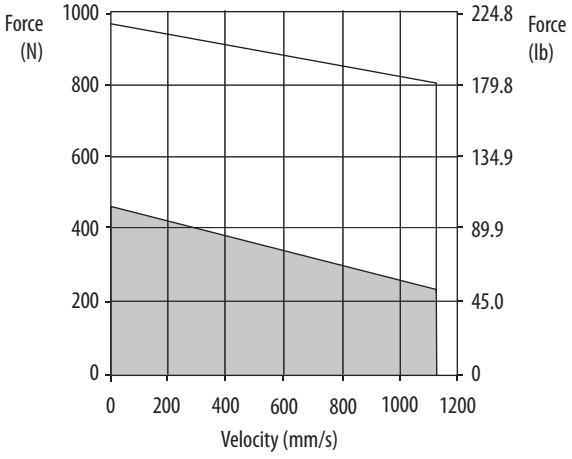
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/MP-Series Integrated Linear Stage Curves

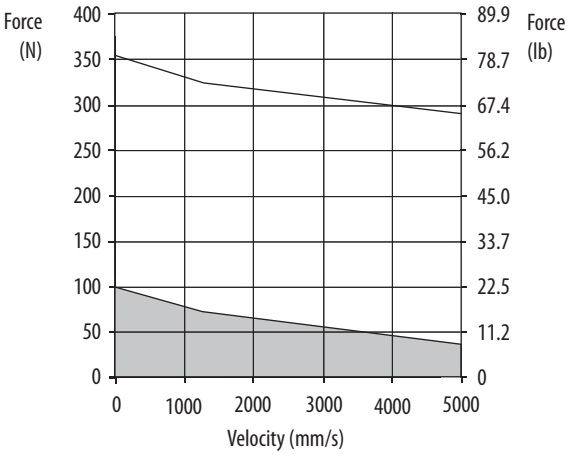
2098-DSD-010 and MPAS-A6*xxx*1-V05S*x*A



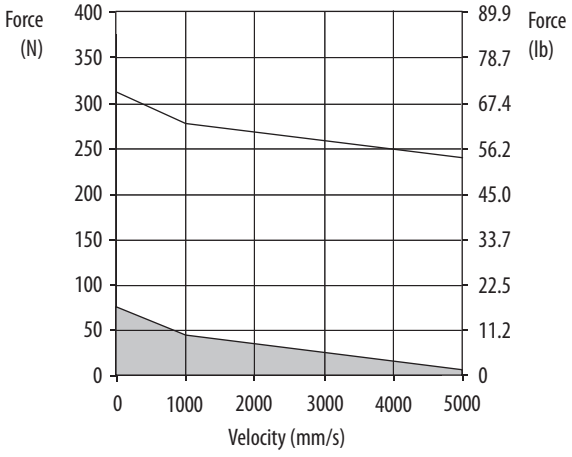
2098-DSD-010 and MPAS-A6*xxx*2-V20S*x*A



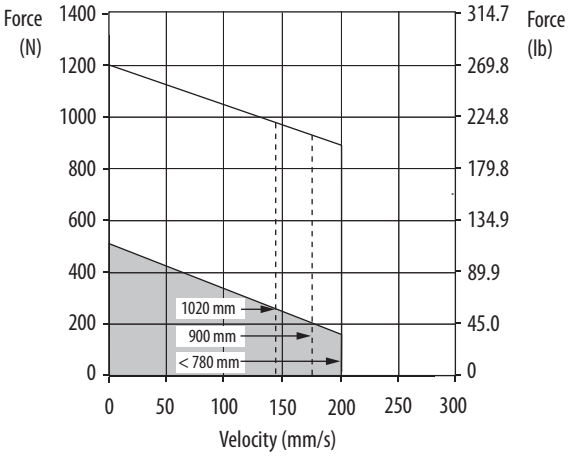
2098-DSD-020 and MPAS-A6*xxx*B-ALM02C



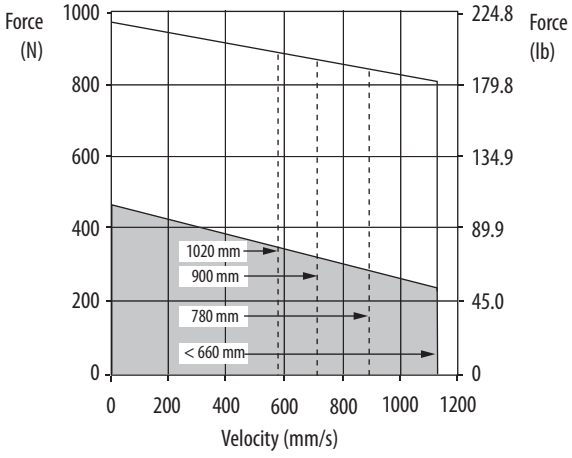
2098-DSD-010 and MPAS-A6*xxx*B-ALMS2C



2098-DSD-010 and MPAS-A8*xxx*1-V05S*x*A



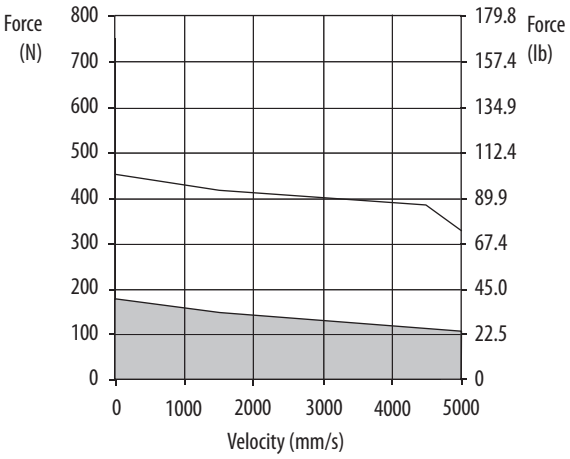
2098-DSD-010 and MPAS-A8*xxx*2-V20S*x*A



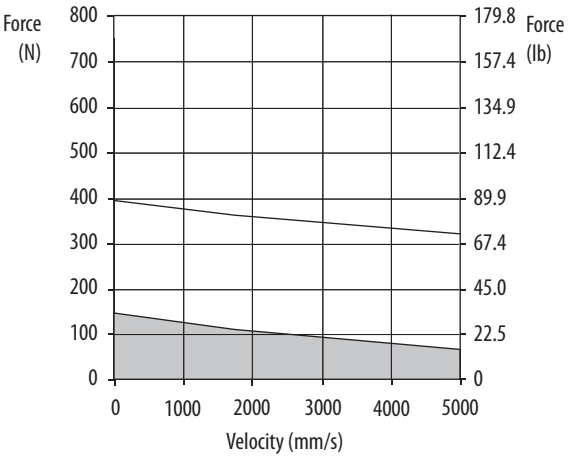
= Intermittent operating region
= Continuous operating region
= System operation for specified stroke length

Ultra3000 (200V class) Drives/MP-Series Integrated Linear Stage Curves (continued)

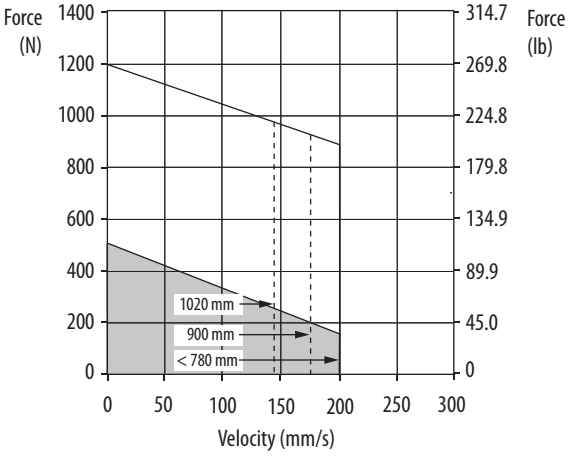
2098-DSD-020 and MPAS-A8*xxx*E-ALM02C



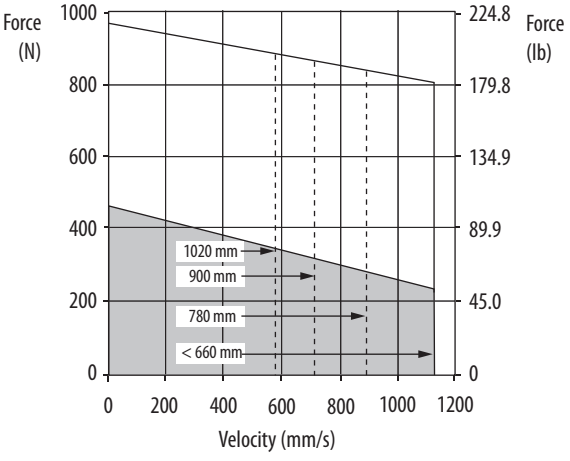
2098-DSD-020 and MPAS-A8*xxx*E-ALMS2C



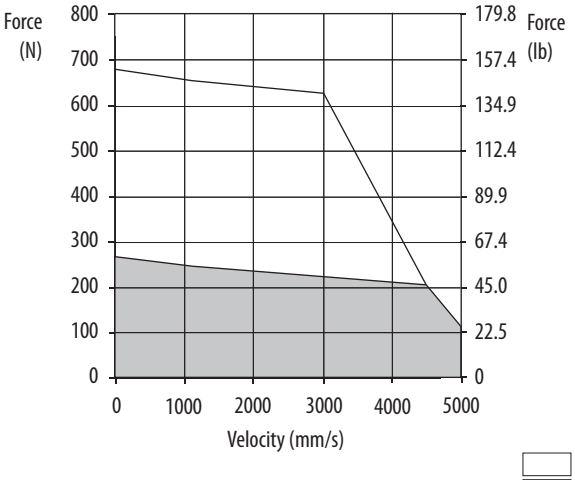
2098-DSD-010 and MPAS-A9*xxx*1-V05S*x*A



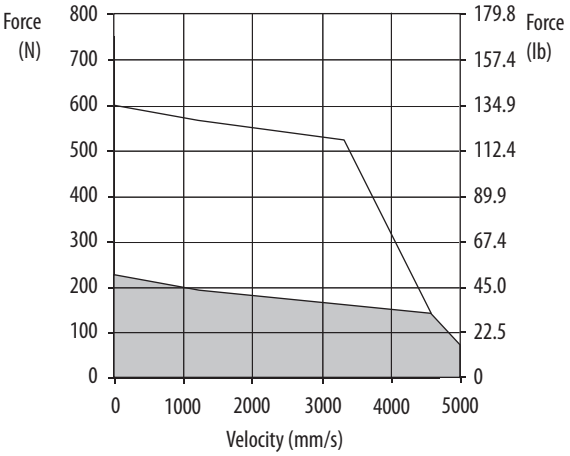
2098-DSD-010 and MPAS-A9*xxx*2-V20S*x*A



2098-DSD-020 and MPAS-A9*xxx*K-ALM02C



2098-DSD-020 and MPAS-A9*xxx*K-ALMS2C



= Intermittent operating region
= Continuous operating region
= System operation for specified stroke length

Ultra3000 (400V class) Drives with MP-Series Integrated Linear Stages

This section provides system combination information for the Ultra3000 (400V class) drives when matched with MP-Series (400V class) integrated direct-drive or ballscrew linear stages. Included are motor power and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Linear Stage Cable Combinations

Linear Stage	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPAS-B*xxxx*1-V05S*x*A, MPAS-B*xxxx*2-V20S*x*A	2090-XXNPMF-16S*xx* (standard, non-flex) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPAS-B8*xxx*F-ALM*x*2C, MPAS-B9*xxx*L-ALM*x*2C		2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Incremental Feedback

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Linear Stage Performance Specifications with Ultra3000 (400V class) Drives

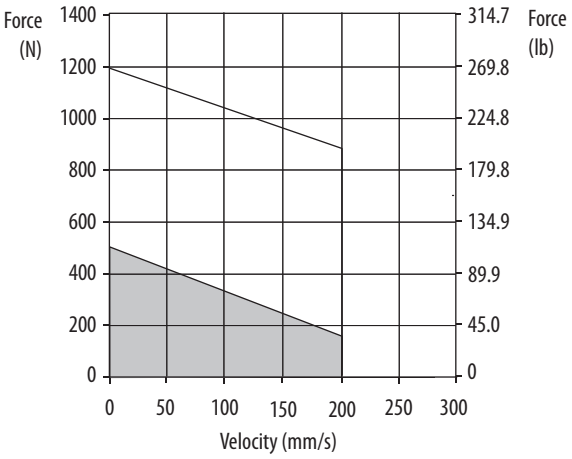
Linear Stage	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Stage Rated Output kW	Ultra3000 400V-class Drives
MPAS-B*xxxx*1-V05S*x*A	200 (7.9) (1)	1.75	521 (117)	3.50	1212 (272)	0.138	2098-DSD-HV030
MPAS-B*xxxx*2-V20S*x*A	1124 (44.3) (2)	3.30	462 (104)	6.60	968 (218)	0.52	2098-DSD-HV030
MPAS-B8*xxx*F-ALMO2C	5000 (200)	3.50	189 (42.5)	9.30	456 (103)	0.527	2098-DSD-HV030
MPAS-B8*xxx*F-ALMS2C	5000 (200)	3.15	159 (35.7)	8.37	399 (89.7)	0.475	2098-DSD-HV030
MPAS-B9*xxx*L-ALMO2C	5000 (200)	3.40	285 (64.1)	9.10	680 (153)	0.768	2098-DSD-HV030
MPAS-B9*xxx*L-ALMS2C	5000 (200)	3.03	245 (55.1)	8.19	601 (135)	0.69	2098-DSD-HV030

(1) For 900 mm stroke length, maximum speed is 176 mm/s (6.9 in/s). For 1020 mm stroke length, maximum speed is 143 mm/s (5.6 in/s).
(2) For 780 mm stroke length, maximum speed is 889 mm/s (35.0 in/s). For 900 mm stroke length, maximum speed is 715 mm/s (28.2 in/s). For 1020 mm stroke length, maximum speed is 582 mm/s (22.9 in/s).

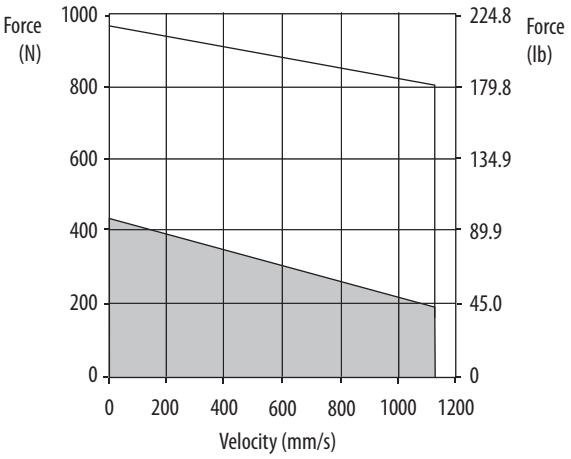
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/MP-Series Integrated Linear Stage Curves

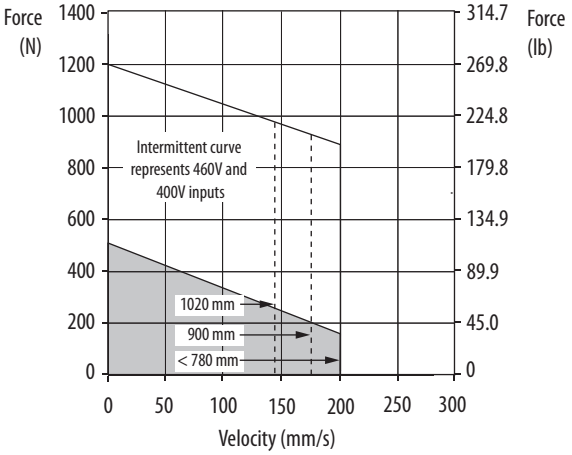
2098-DSD-HV030 and MPAS-B6*xxx*1-V05S*x*A



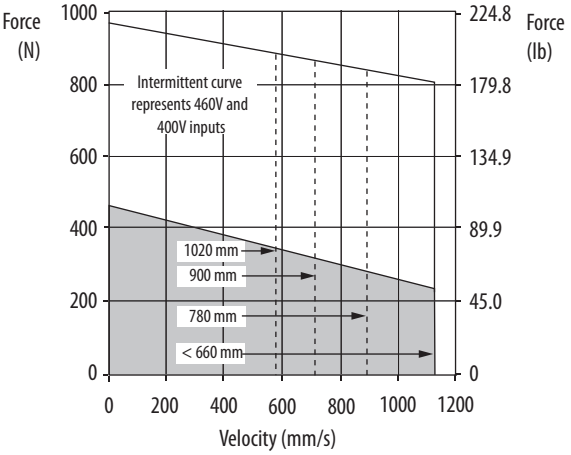
2098-DSD-HV030 and MPAS-B6*xxx*2-V20S*x*A



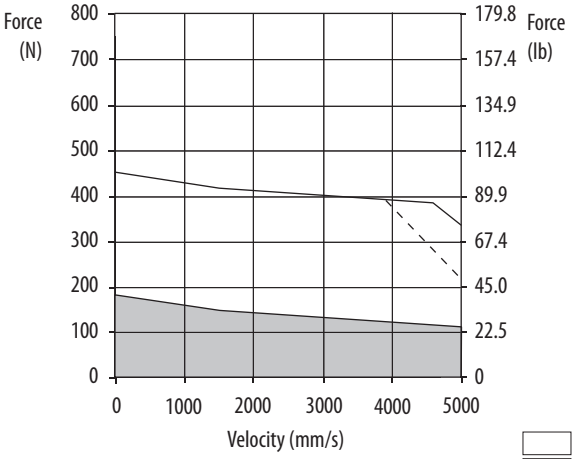
2098-DSD-HV030 and MPAS-B8*xxx*1-V05S*x*A



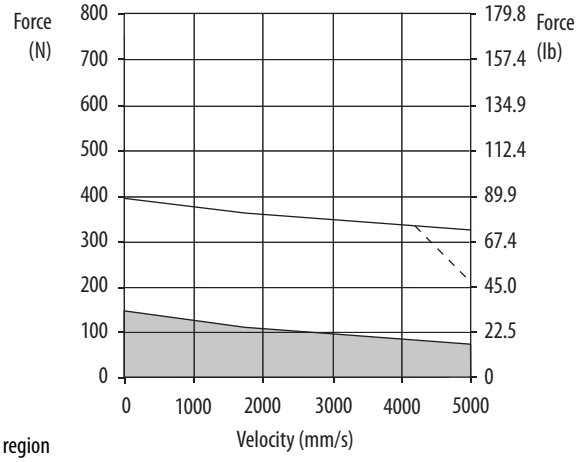
2098-DSD-HV030 and MPAS-B8*xxx*2-V20S*x*A



2098-DSD-HV030 and MPAS-B8*xxx*F-ALM02C



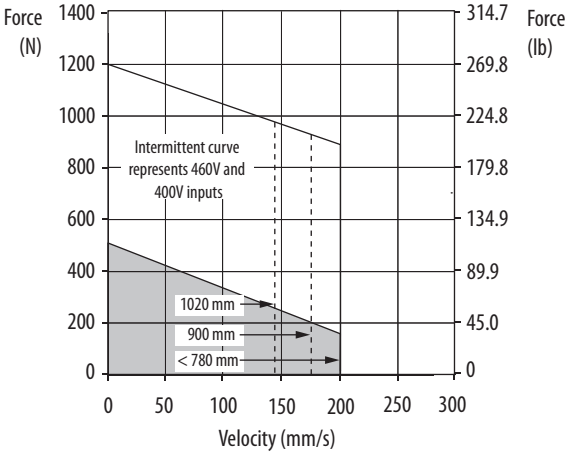
2098-DSD-HV030 and MPAS-B8*xxx*F-ALMS2C



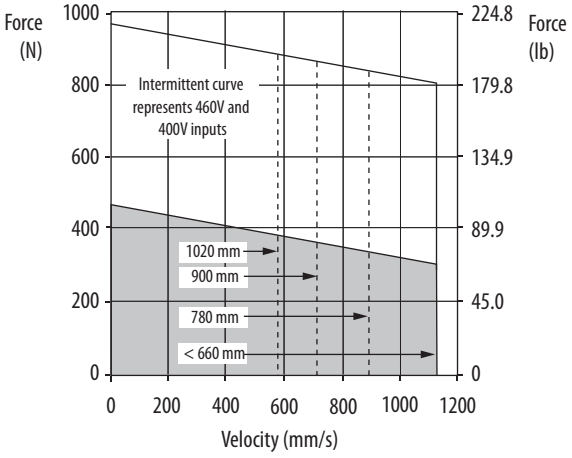
= Intermittent operating region
= Continuous operating region
= System operation with 400V AC (rms) input voltage
= System operation for specified stroke length

Ultra3000 (400V class) Drives/MP-Series Integrated Linear Stage Curves (continued)

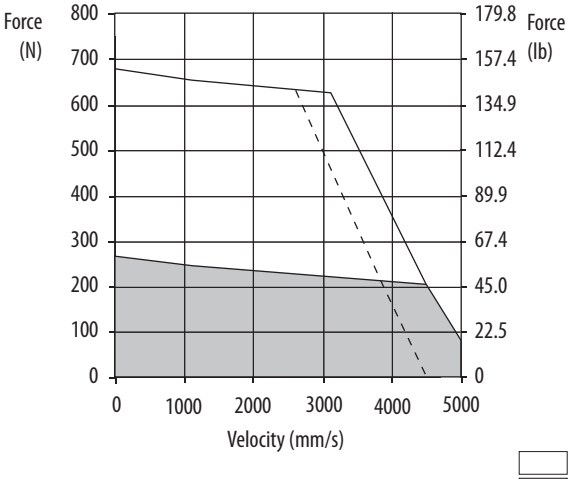
2098-DSD-HV030 and MPAS-B9*xxx*1-V05S*x*A



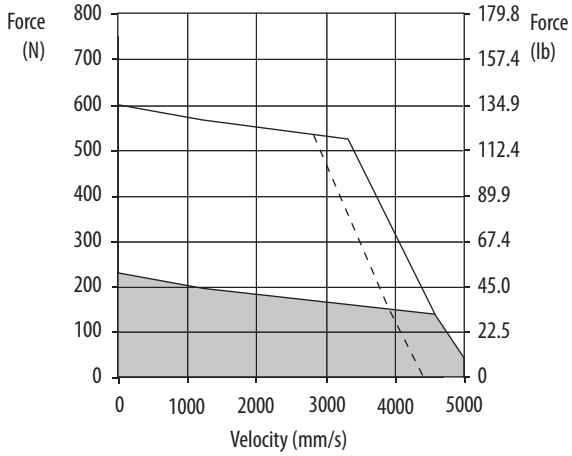
2098-DSD-HV030 and MPAS-B9*xxx*2-V20S*x*A



2098-DSD-HV030 and MPAS-B9*xxx*L-ALM02C



2098-DSD-HV030 and MPAS-B9*xxx*L-ALMS2C



= Intermittent operating region
= Continuous operating region
= System operation with 400V AC (rms) input voltage
= System operation for specified stroke length

Ultra3000 Drives with MP-Series Electric Cylinders

This section provides system combination information for the Ultra3000 drives when matched with MP-Series electric cylinders. Included are power/brake and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Electric Cylinder Cable Combinations

Electric Cylinders	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPAR-A/B1*xxx*B MPAR-A/B1*xxx*E MPAR-A/B2*xxx*C MPAR-A/B2*xxx*F	2090-XXNPMF-16S*xx* (standard, non-flex) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM4DF-CDAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPAR-A/B3*xxx*E MPAR-A/B3*xxx*H	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Electric Cylinder Performance Specifications with Ultra3000 Drives

Performance Specifications with Ultra3000 (200V class) Drives

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 200V-class Drives
MPAR-A1*xxx*B	150	1.15	240 (53.9)	1.35	300 (67.4)	0.036	2098-DSD-005
MPAR-A1*xxx*E	500	2.16	280 (62.9)	2.48	350 (78.7)	0.140	
MPAR-A2*xxx*C	250	2.42	420 (94.4)	2.72	525 (118)	0.105	2098-DSD-010
MPAR-A2*xxx*F	640	4.54	640 (144)	5.41	800 (180)	0.410	
MPAR-A3*xxx*E	500	10.33	2000 (450)	12.34	2500 (562)	1.00	2098-DSD-030 (1)
MPAR-A3*xxx*H	1000	12.20	1300 (292)	16.40	1625 (365)	1.30	2098-DSD-030

(1) Use of catalog number 2098-DSD020*x-xx* is acceptable for applications with actuators and continuous force derated by 5%.

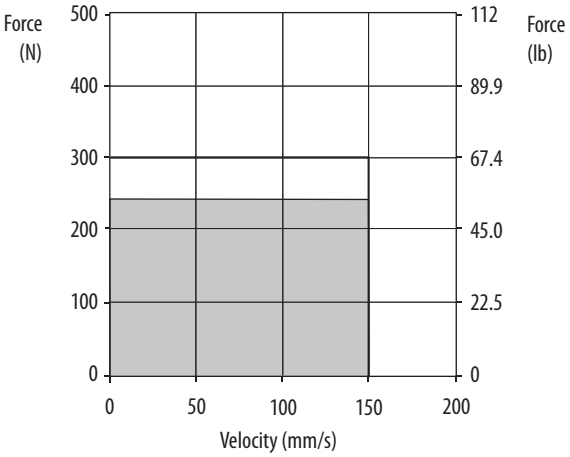
Performance Specifications with Ultra3000 (400V class) Drives

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 400V-class Drives
MPAR-B1*xxx*B	150	1.15	240 (53.9)	1.35	300 (67.4)	0.036	2098-DSD-HV030
MPAR-B1*xxx*E	500	1.49	280 (62.9)	1.71	350 (78.7)	0.140	
MPAR-B2*xxx*C	250	1.67	420 (94.4)	1.90	525 (118)	0.105	
MPAR-B2*xxx*F	640	3.29	640 (144)	3.93	800 (180)	0.410	
MPAR-B3*xxx*E	500	5.16	2000 (450)	6.17	2500 (562)	1.00	
MPAR-B3*xxx*H	1000	6.13	1300 (292)	6.79	1625 (365)	1.30	

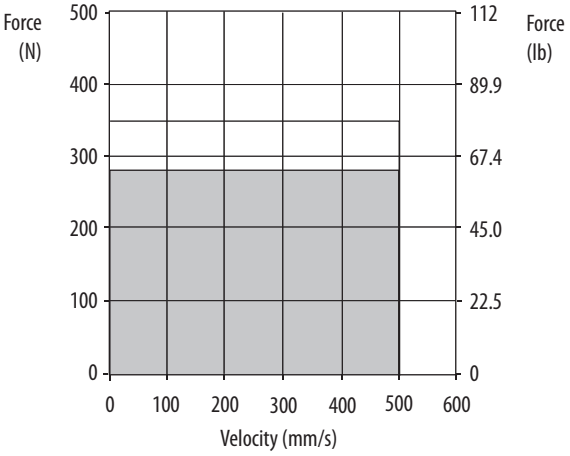
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 Drives/MP-Series Electric Cylinder Curves

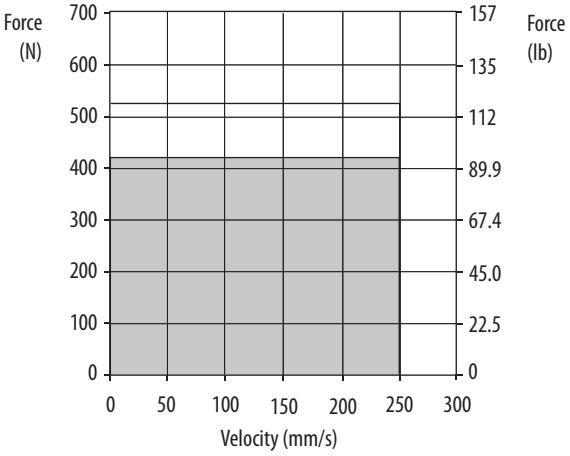
2098-DSD-005 and MPAR-A1*xxx*B-V*x*A
2098-DSD-HV030 and MPAR-B1*xxx*B-V*x*A



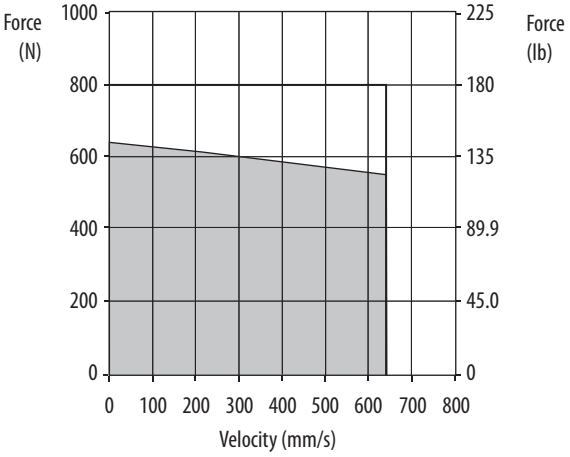
2098-DSD-005 and MPAR-A1*xxx*E-V*x*A
2098-DSD-HV030 and MPAR-B1*xxx*E-V*x*A



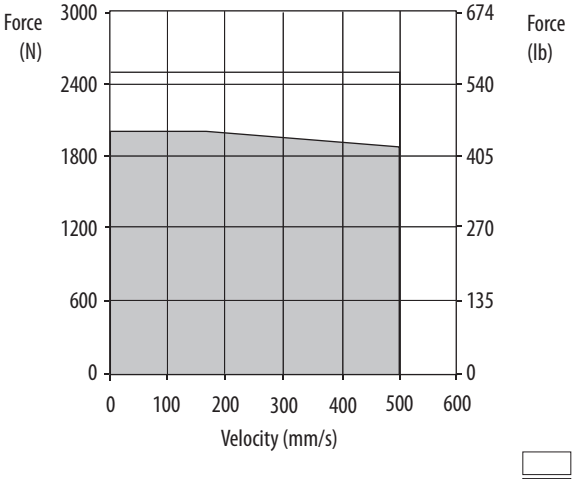
2098-DSD-010 and MPAR-A2*xxx*C-V*x*A
2098-DSD-HV030 and MPAR-B2*xxx*C-V*x*A



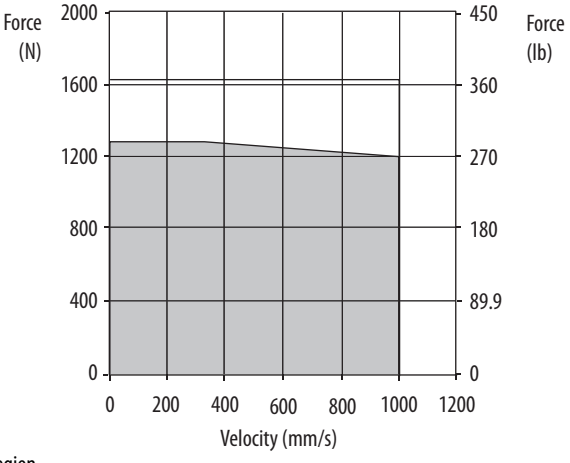
2098-DSD-010 and MPAR-A2*xxx*F-V*x*A
2098-DSD-HV030 and MPAR-B2*xxx*F-V*x*A



2098-DSD-030 and MPAR-A3*xxx*E-M*x*A
2098-DSD-HV030 and MPAR-B3*xxx*E-M*x*A



2098-DSD-030 and MPAR-A3*xxx*H-M*x*A
2098-DSD-HV030 and MPAR-B3*xxx*H-M*x*A



= Intermittent operating region
= Continuous operating region

Ultra3000 Drives with MP-Series Heavy Duty Electric Cylinders

This section provides system combination information for the Ultra3000 drives when matched with MP-Series heavy-duty electric cylinders. Included are power/brake and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Electric Cylinder Cable Combinations

Electric Cylinder	Motor Power/Brake Cable	Motor Feedback Cable (1)
MPAI-A/B3*xxx*C, MPAI-A/B3*xxx*E MPAI-A/B3*xxx*R, MPAI-A/B3*xxx*S	2090-CPWM7DF-16AA*xx* (standard, non-flex) 2090-CPWM7DF-16AF*xx* (continuous-flex)	2090-CFBM7DF-CEAA*xx* or 2090-CFBM7DD-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* or 2090-CFBM7DD-CEAF*xx* (continuous-flex) Absolute High-resolution Feedback
MPAI-A/B4*xxx*C, MPAI-A/B4*xxx*E MPAI-A/B4*xxx*R, MPAI-A/B4*xxx*S		
MPAI-B5*xxx*C, MPAI-B5*xxx*E		
MPAI-A5*xxx*C, MPAI-A5*xxx*E	2090-CPWM7DF-14AA*xx* (standard, non-flex) 2090-CPWM7DF-14AF*xx* (continuous-flex)	

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) with flying-lead cables on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

Electric Cylinder Performance Specifications with Ultra3000 (200V class) Drives

Performance Specifications with Ball Screw Electric Cylinders

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)		System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 200V-class Drives
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-A3076CM1	305 (12)	2.68	1624 (365)	1290 (290)	8.90	4448 (1000)	0.27	2098-DSD-010
MPAI-A3076EM1	610 (24)		814 (183)	645 (145)		2570 (578)		
MPAI-A3150CM3	279 (11)	5.61	4003 (900)	3176 (714)	8.40	4448 (1000)	0.39	2098-DSD-020
MPAI-A3300CM3								
MPAI-A3450CM3	188 (7.3)							
MPAI-A3150EM3	559 (22)		2002 (450)	1588 (357)	14.14	4003 (900)		
MPAI-A3300EM3								
MPAI-A3450EM3	376 (15)							
MPAI-A4150CM3	279 (11)	10.89	7784 (1750)	6179 (1389)	17.07	8896 (2000)	0.43	2098-DSD-030
MPAI-A4300CM3								
MPAI-A4450CM3	245 (9.5)							
MPAI-A4150EM3	559 (22)		3892 (875)	3092 (695)	27.44	7784 (1750)		
MPAI-A4300EM3								
MPAI-A4450EM3	491 (19)							
MPAI-A5*xxx*CM3	200 (7.8)	13.25	13,123 (2950)	10,415 (2341)	16.70	13,345 (3000)	0.55	2098-DSD-075
MPAI-A5*xxx*EM3	400 (15.6)		6562 (1475)	5208 (1171)	33.40	13,122 (2950)		

Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Performance Specifications with Roller Screw Electric Cylinders

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)		System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 200V-class Drives
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-A3076RM1	305 (12)	2.87	1557 (350)	1237 (278)	8.90	4862 (1093)	0.27	2098-DSD-010
MPAI-A3076SM1	610 (24)		778 (175)	618 (139)		2431 (547)		
MPAI-A3150RM3	279 (11)	5.61	3781 (850)	3003 (675)	14.14	7562 (1700)	0.39	2098-DSD-020
MPAI-A3300RM3								
MPAI-A3450RM3	176 (6.9)							
MPAI-A3150SM3	559 (22)		1891 (425)	1499 (337)		3781 (850)		
MPAI-A3300SM3								
MPAI-A3450SM3	353 (14)							
MPAI-A4150RM3	279 (11)	10.89	7340 (1650)	5827 (1310)	27.44	14,679 (3300)	0.43	2098-DSD-030
MPAI-A4300RM3								
MPAI-A4450RM3	196 (7.6)							
MPAI-A4150SM3	559 (22)		3670 (825)	2914 (655)		7340 (1650)		
MPAI-A4300SM3								
MPAI-A4450SM3	393 (15)							

Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Electric Cylinder Performance Specifications with Ultra3000 (400V class) Drives

Performance Specifications with Ball Screw Electric Cylinders

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)		System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 400V-class Drives
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-B3076CM1	305 (12)	1.35	1624 (365)	1290 (290)	4.57	4448 (1000)	0.27	2098-DSD-HV030
MPAI-B3076EM1	610 (24)		814 (183)	645 (145)		2570 (578)		
MPAI-B3150CM3	279 (11)	2.81	4003 (900)	3176 (714)	4.30	4448 (1000)	0.39	2098-DSD-HV030
MPAI-B3300CM3								
MPAI-B3450CM3	188 (7.3)							
MPAI-B3150EM3	559 (22)		2002 (450)	1588 (357)	7.07	4003 (900)		
MPAI-B3300EM3								
MPAI-B3450EM3	376 (15)							
MPAI-B4150CM3	279 (11)	5.61	7784 (1750)	6179 (1389)	8.68	8896 (2000)	0.43	2098-DSD-HV030
MPAI-B4300CM3								
MPAI-B4450CM3	245 (9.5)							
MPAI-B4150EM3	559 (22)		3892 (875)	3092 (695)	14.14	7784 (1750)		
MPAI-B4300EM3								
MPAI-B4450EM3	491 (19)							
MPAI-B5*xxx*CM3	200 (7.8)	6.62	13,123 (2950)	10,415 (2341)	8.48	13,345 (3000)	0.55	2098-DSD-HV050
MPAI-B5*xxx*EM3	400 (15.6)		6562 (1475)	5208 (1171)	16.70	13,122 (2950)		

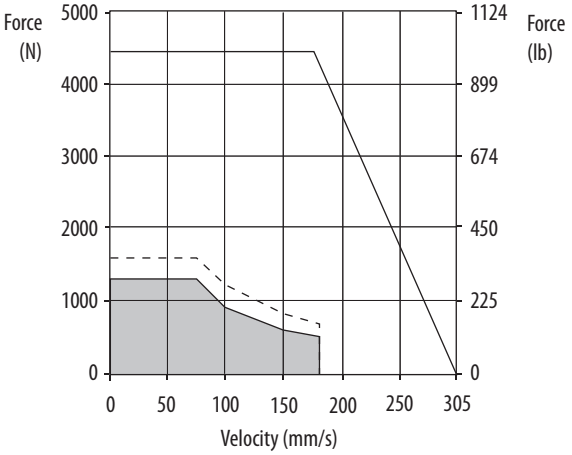
Performance Specifications with Roller Screw Electric Cylinders

Electric Cylinder	Speed, max mm/s (in/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)		System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output kW	Ultra3000 400V-class Drives
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-B3076RM1	305 (12)	1.45	1557 (350)	1237 (278)	4.57	4862 (1093)	0.27	2098-DSD-HV030
MPAI-B3076SM1	610 (24)		778 (175)	618 (139)		2431 (547)		
MPAI-B3150RM3	279 (11)	2.81	3781 (850)	3003 (675)	7.07	7562 (1700)	0.39	2098-DSD-HV030
MPAI-B3300RM3								
MPAI-B3450RM3	176 (6.9)							
MPAI-B3150SM3	559 (22)		1891 (425)	1499 (337)		3781 (850)		
MPAI-B3300SM3								
MPAI-B3450SM3	353 (14)							
MPAI-B4150RM3	279 (11)	5.61	7340 (1650)	5827 (1310)	14.14	14,679 (3300)	0.43	2098-DSD-HV030
MPAI-B4300RM3								
MPAI-B4450RM3	196 (7.6)							
MPAI-B4150SM3	559 (22)		3670 (825)	2914 (655)		7340 (1650)		
MPAI-B4300SM3								
MPAI-B4450SM3	393 (15)							

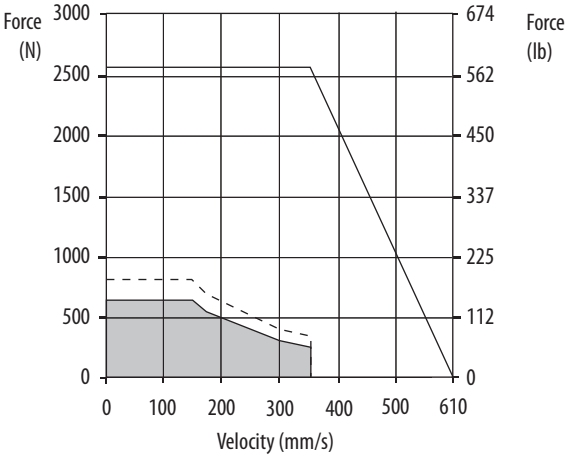
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 Drives/MP-Series Heavy Duty (ball screw) Electric Cylinder Curves

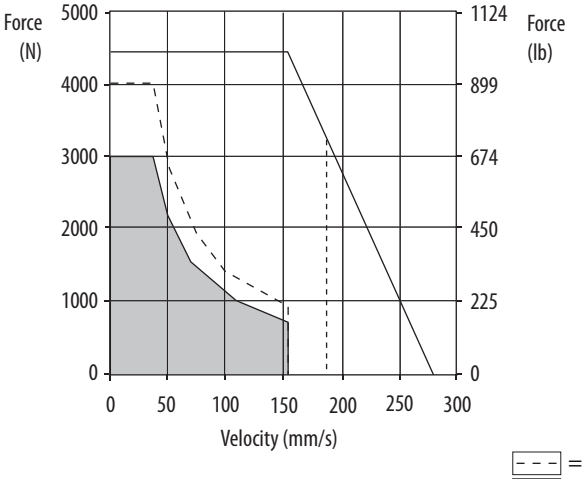
2098-DSD-010 and MPAI-A3076CM1
2098-DSD-HV030 and MPAI-B3076CM1



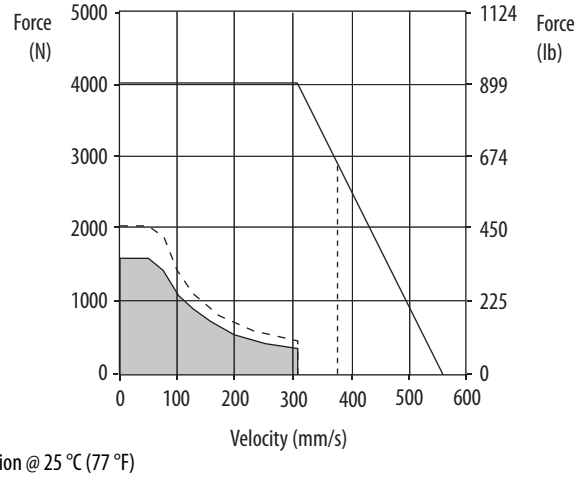
2098-DSD-010 and MPAI-A3076EM1
2098-DSD-HV030 and MPAI-B3076EM1



2098-DSD-020 and MPAI-A3*xxx*CM3
2098-DSD-HV030 and MPAI-B3*xxx*CM3



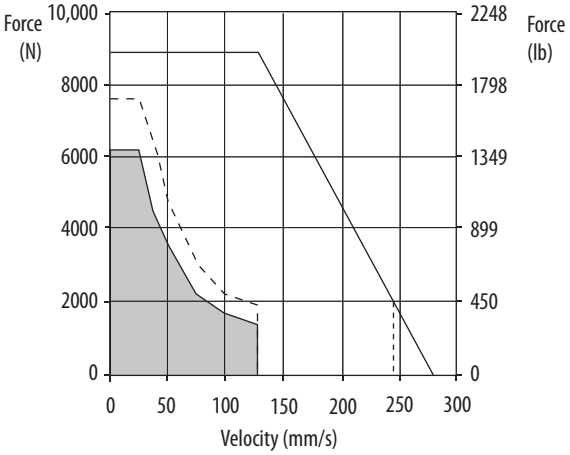
2098-DSD-020 and MPAI-A3*xxx*EM3
2098-DSD-HV030 and MPAI-B3*xxx*EM3



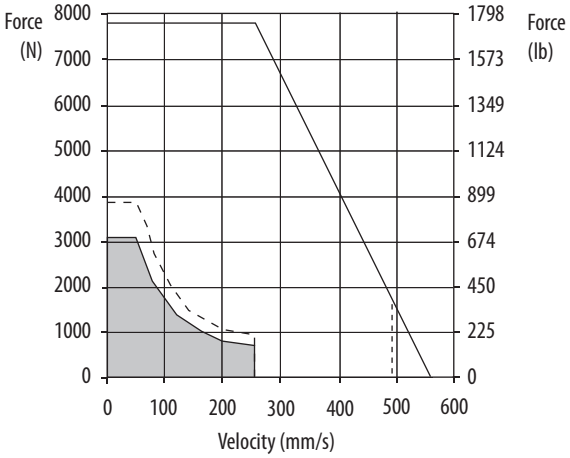
= Continuous operating region @ 25 °C (77 °F)
= Continuous operating region @ 40 °C (104 °F)
= Intermittent operating region, 450 mm (18 in.) stroke length only
= Intermittent operating region, 076…300 mm (3…12 in.) stroke lengths

Ultra3000 Drives/MP-Series Heavy Duty (ball screw) Electric Cylinder Curves (continued)

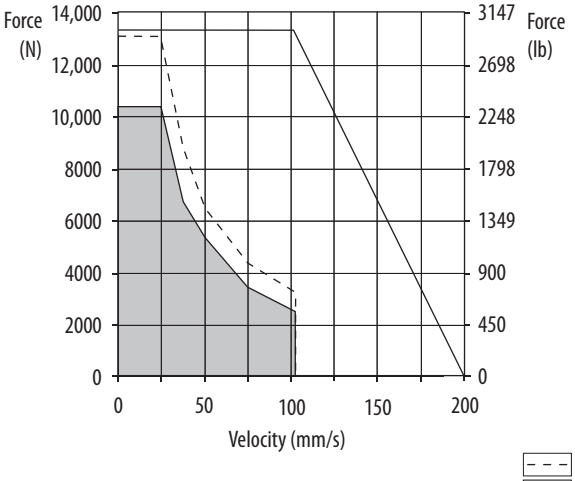
2098-DSD-030 and MPAI-A4*xxx*CM3
2098-DSD-HV030 and MPAI-B4*xxx*CM3



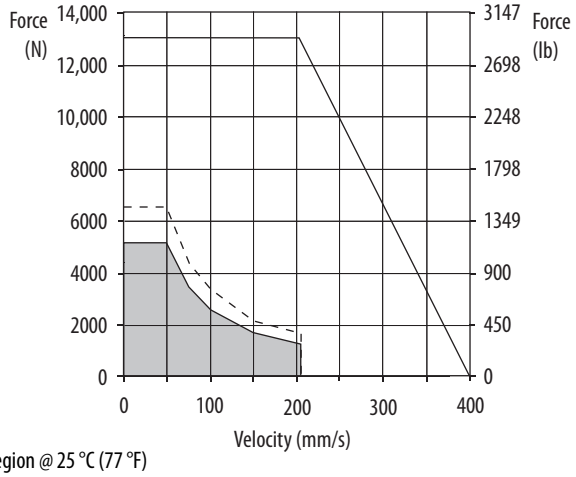
2098-DSD-030 and MPAI-A4*xxx*EM3
2098-DSD-HV030 and MPAI-B4*xxx*EM3



2098-DSD-075 and MPAI-A5*xxx*CM3
2098-DSD-HV050 and MPAI-B5*xxx*CM3



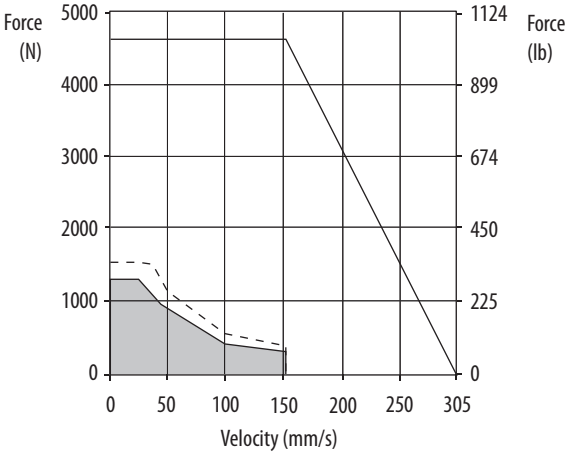
2098-DSD-075 and MPAI-A5*xxx*EM3
2098-DSD-HV050 and MPAI-B5*xxx*EM3



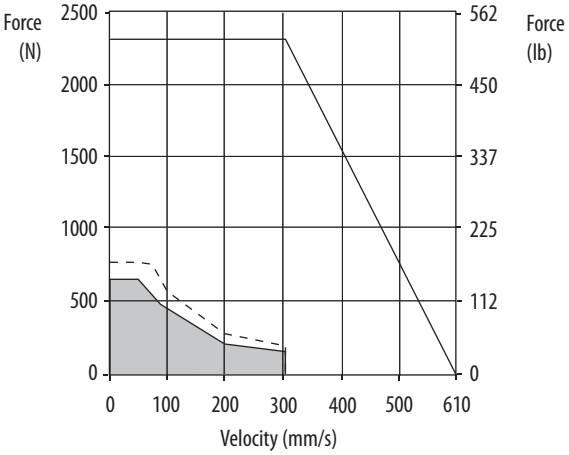
= Continuous operating region @ 25 °C (77 °F)
= Continuous operating region @ 40 °C (104 °F)
= Intermittent operating region, 450 mm (18 in.) stroke length only
= Intermittent operating region, 076…300 mm (3…12 in.) stroke lengths

Ultra3000 Drives/MP-Series Heavy Duty (roller screw) Electric Cylinder Curves

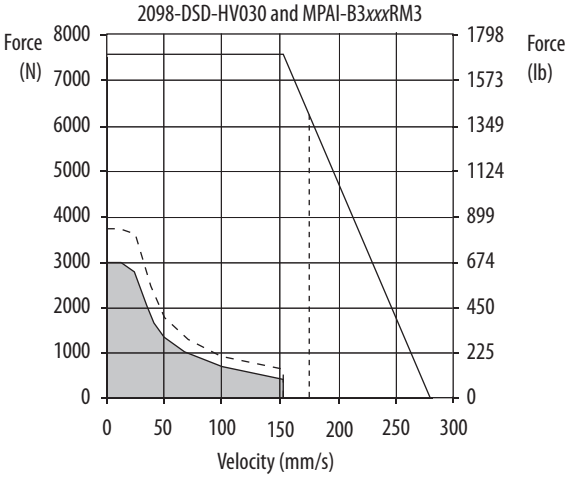
2098-DSD-010 and MPAI-A3076RM1
2098-DSD-HV030 and MPAI-B3076RM1



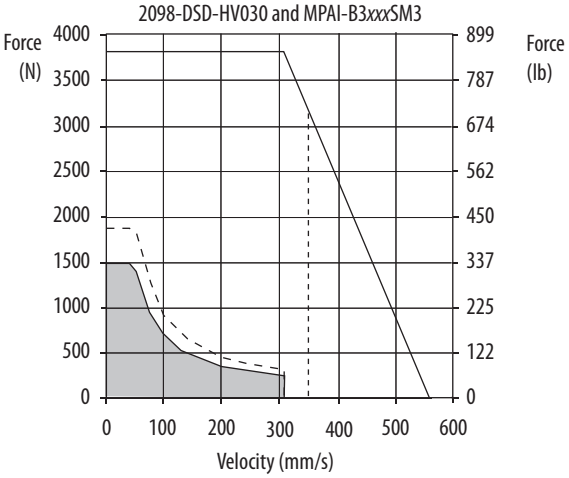
2098-DSD-010 and MPAI-A3076SM1
2098-DSD-HV030 and MPAI-B3076SM1



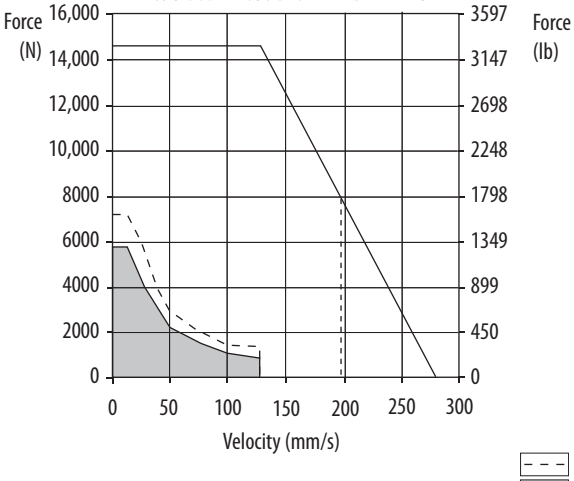
2098-DSD-020 and MPAI-A3*xxx*RM3
2098-DSD-HV030 and MPAI-B3*xxx*RM3



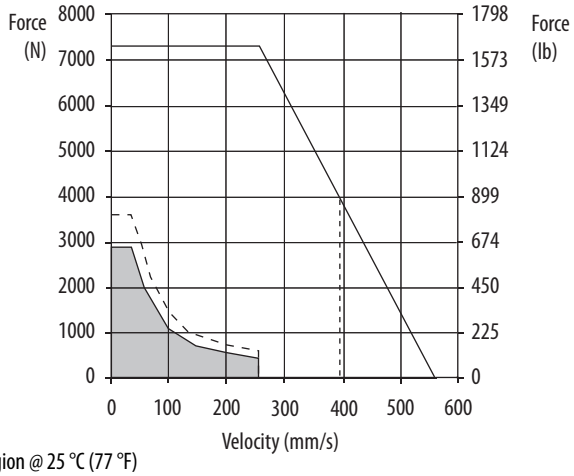
2098-DSD-020 and MPAI-A3*xxx*SM3
2098-DSD-HV030 and MPAI-B3*xxx*SM3



2098-DSD-030 and MPAI-A4*xxx*RM3
2098-DSD-HV030 and MPAI-B4*xxx*RM3



2098-DSD-030 and MPAI-A4*xxx*SM3
2098-DSD-HV030 and MPAI-B4*xxx*SM3



= Continuous operating region @ 25 °C (77 °F)
= Continuous operating region @ 40 °C (104 °F)
= Intermittent operating region, 450 mm (18 in.) stroke length only
= Intermittent operating region, 076…300 mm (3…12 in.) stroke lengths

Ultra3000 (200V class) Drives with LDC-Series Linear Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with LDC-Series™ iron-core linear motors. Included are power and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Linear Motor Cable Combinations

Linear Motor	Motor Power Cable	Motor Feedback Cable (1)
LDC-C030100-DHT, LDC-C030200-DHT, LDC-C030200-EHT	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM7DF-CDAF*xx* (continuous-flex) Sin/Cos or TTL Encoder Feedback
LDC-C050100-DHT, LDC-C050200-DHT, LDC-C050200-EHT, LDC-C050300-DHT, LDC-C050300-EHT		
LDC-C075200-DHT, LDC-C075200-EHT, LDC-C075300-DHT, LDC-C075300-EHT, LDC-C075400-DHT, LDC-C075400-EHT		
LDC-C100300-DHT, LDC-C100300-EHT, LDC-C100400-DHT, LDC-C100400-EHT, LDC-C100600-DHT		
LDC-C150400-DHT, LDC-C150600-DHT		

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

LDC-Series Performance Specifications with Ultra3000 (200V class) Drives

Linear Motor	Speed, max m/s (ft/s)	System Continuous Stall Current (1) Amps 0-pk	System Continuous Stall Force (1) N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Motor Rated Output kW	Ultra3000 200V-class Drives
LDC-C030100-DHT	10.0 (32.8)	4.1…6.1	74…111 (17…25)	12.1	188 (42)	0.37…0.55	2098-DSD-010
LDC-C030200-DHT		8.1…12.2	148…222 (33…50)	24.3	375 (84)	0.74…1.11	2098-DSD-020
LDC-C030200-EHT		4.1…6.1		12.1			2098-DSD-010
LDC-C050100-DHT	10.0 (32.8)	3.9…5.9	119…179 (27…40)	11.7	302 (68)	0.59…0.89	2098-DSD-010
LDC-C050200-DHT		7.9…11.8	240…359 (54…81)	23.3	600 (135)	1.20…1.79	2098-DSD-020
LDC-C050200-EHT		3.9…5.9		11.6			2098-DSD-010
LDC-C050300-DHT		11.8…17.7	363…544 (82…122)	35.9	941 (212)	1.81…2.72	2098-DSD-075
LDC-C050300-EHT		3.9…5.9		12.0			2098-DSD-010

(1) Values represent the range between no cooling (low value) and water cooling (high value).

Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

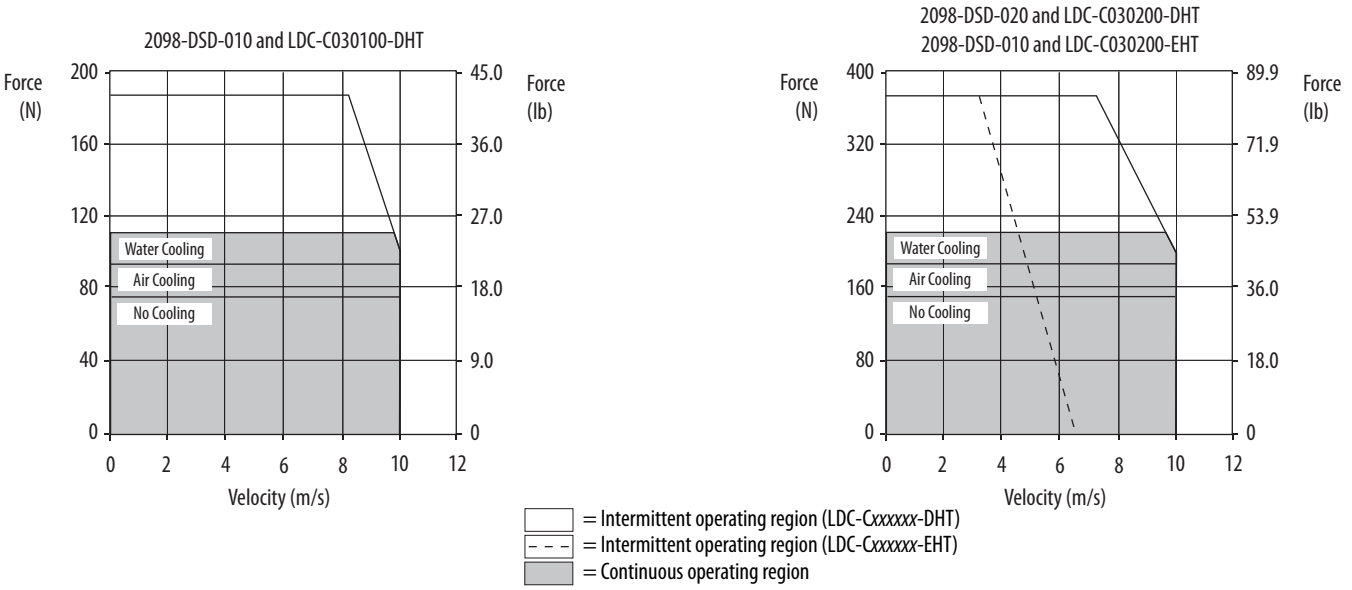
LDC-Series Performance Specifications with Ultra3000 (200V class) Drives (continued)

Linear Motor	Speed, max m/s (ft/s)	System Continuous Stall Current (1) Amps 0-pk	System Continuous Stall Force (1) N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Motor Rated Output kW	Ultra3000 200V-class Drives
LDC-C075200-DHT	10.0 (32.8)	7.7…11.5	348…523 (78…117)	22.9	882 (198)	1.74…2.61	2098-DSD-020
LDC-C075200-EHT		3.8…5.7		11.5			2098-DSD-010
LDC-C075300-DHT		11.5…17.2	523…784 (117…176)	35.6	1368 (308)	2.61…3.92	2098-DSD-075
LDC-C075300-EHT		3.8…5.7		11.9			2098-DSD-010
LDC-C075400-DHT		15.3…23.0	697…1045 (157…235)	47.4	1824 (410)	3.48…5.22	2098-DSD-075
LDC-C075400-EHT		7.7…11.5		23.7			2098-DSD-020
LDC-C100300-DHT	10.0 (32.8)	11.1…16.7	674…1012 (152…227)	34.3	1767 (397)	3.37…5.06	2098-DSD-075
LDC-C100300-EHT		3.7…5.6		11.4			2098-DSD-010
LDC-C100400-DHT		14.8…22.2	899…1349 (202…303)	45.7	2356 (530)	4.49…6.74	2098-DSD-075
LDC-C100400-EHT		7.4…11.1		22.8			2098-DSD-020
LDC-C100600-DHT		22.2…33.3	1349…2023 (303…455)	68.5	3534 (794)	6.74…10.11	2098-DSD-075
LDC-C150400-DHT	10.0 (32.8)	14.1…21.1	1281…1922 (288…432)	45.2	3498 (786)	6.40…9.61	2098-DSD-075
LDC-C150600-DHT		21.1…31.7	1922…2882 (432…648)	67.8	5246 (1179)	9.61…14.41	2098-DSD-075

(1) Values represent the range between no cooling (low value) and water cooling (high value).

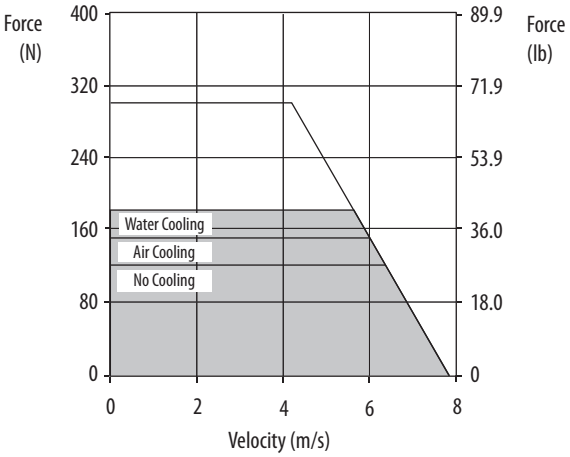
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/LDC-Series Linear Motor Curves

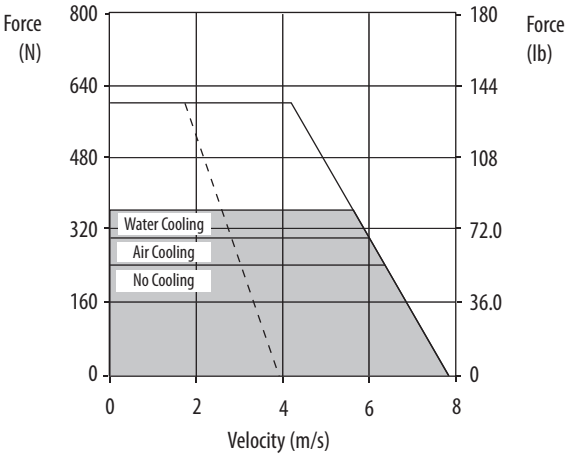


Ultra3000 (200V class) Drives/LDC-Series Linear Motor Curves (continued)

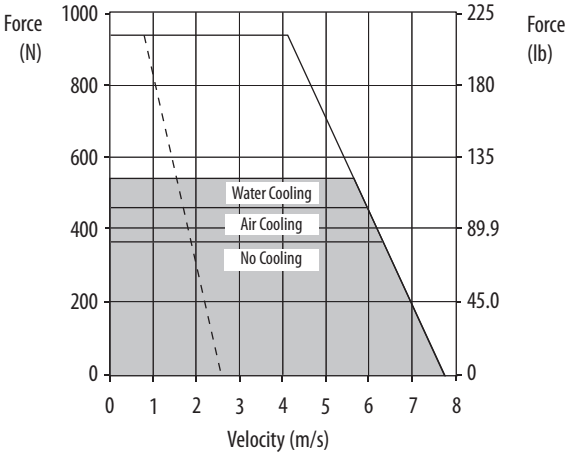
2098-DSD-010 and LDC-C050100-DHT



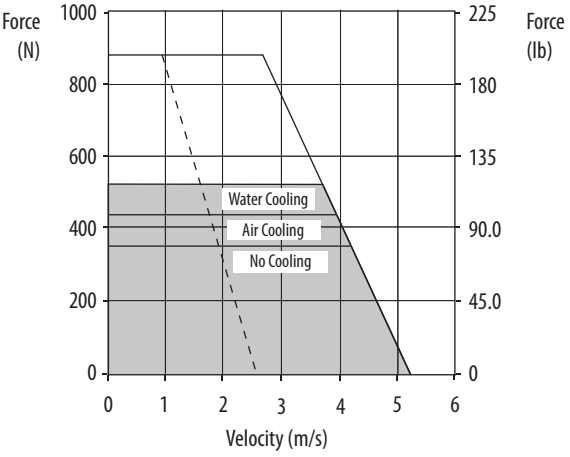
2098-DSD-020 and LDC-C050200-DHT
2098-DSD-010 and LDC-C050200-EHT



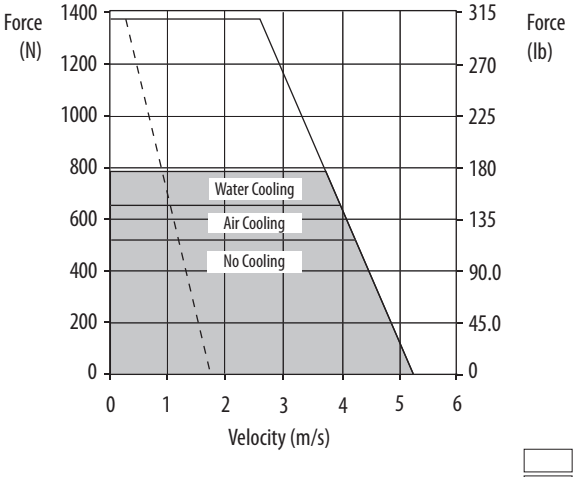
2098-DSD-075 and LDC-C050300-DHT
2098-DSD-010 and LDC-C050300-EHT



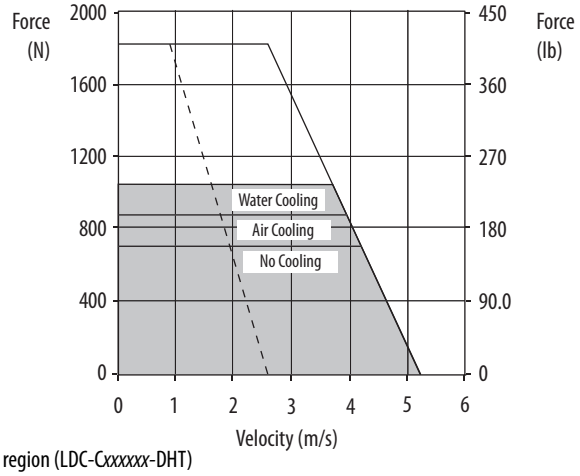
2098-DSD-020 and LDC-C075200-DHT
2098-DSD-010 and LDC-C075200-EHT



2098-DSD-075 and LDC-C075300-DHT
2098-DSD-010 and LDC-C075300-EHT



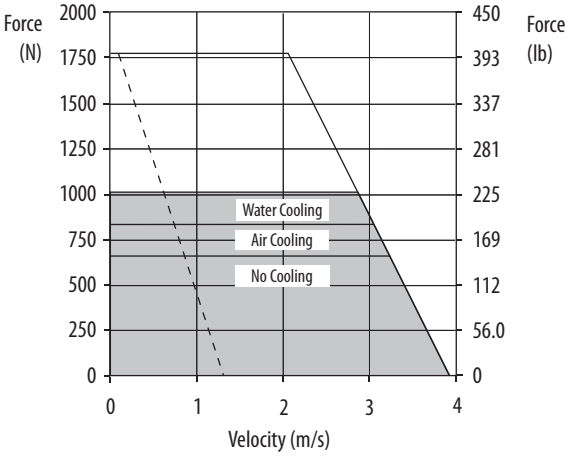
2098-DSD-075 and LDC-C075400-DHT
2098-DSD-020 and LDC-C075400-EHT



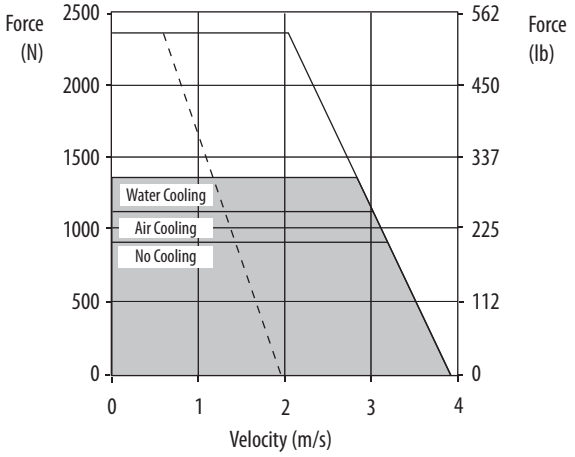
= Intermittent operating region (LDC-C*xxxxxx*-DHT)
= Intermittent operating region (LDC-C*xxxxxx*-EHT)
= Continuous operating region

Ultra3000 (200V class) Drives/LDC-Series Linear Motor Curves (continued)

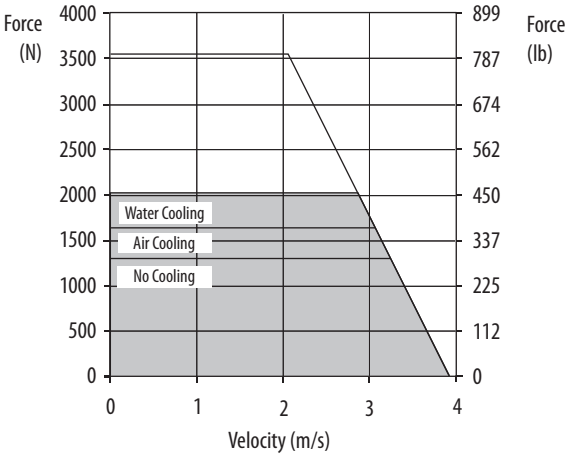
2098-DSD-075 and LDC-C100300-DHT
2098-DSD-010 and LDC-C100300-EHT



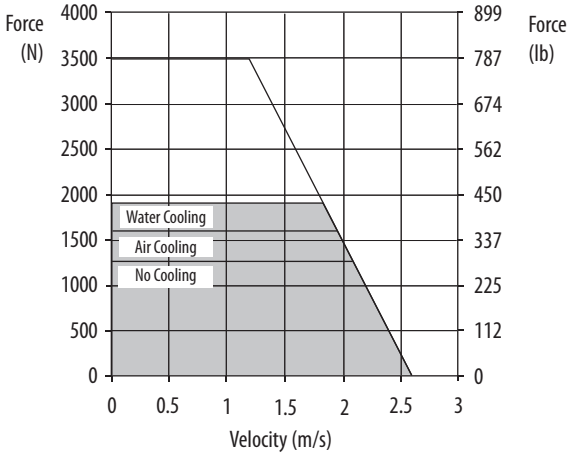
2098-DSD-075 and LDC-C100400-DHT
2098-DSD-020 and LDC-C100400-EHT



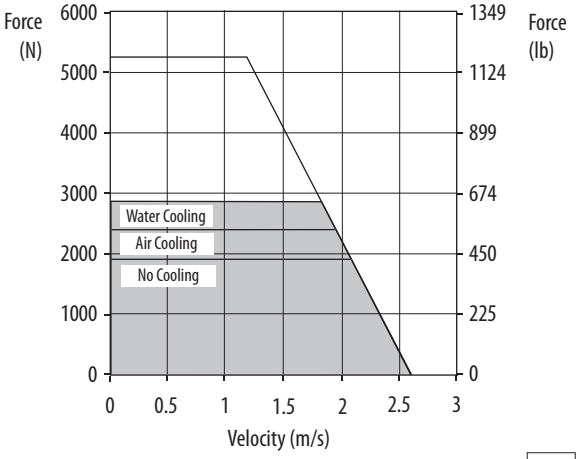
2098-DSD-075 and LDC-C100600-DHT



2098-DSD-075 and LDC-C150400-DHT



2098-DSD-075 and LDC-C150600-DHT



= Intermittent operating region (LDC-C*xxxxxx*-DHT)
= Intermittent operating region (LDC-C*xxxxxx*-EHT)
= Continuous operating region

Ultra3000 (400V class) Drives with LDC-Series Linear Motors

This section provides system combination information for the Ultra3000 (400V class) drives when matched with LDC-Series iron-core linear motors. Included are power and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Linear Motor Cable Combinations

Linear Motor	Motor Power Cable	Motor Feedback Cable (1)
LDC-C030100-DHT, LDC-C030200-DHT, LDC-C030200-EHT	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM7DF-CDAF*xx* (continuous-flex) Sin/Cos or TTL Encoder Feedback
LDC-C050100-DHT, LDC-C050200-DHT, LDC-C050200-EHT, LDC-C050300-DHT, LDC-C050300-EHT		
LDC-C075200-DHT, LDC-C075200-EHT, LDC-C075300-DHT, LDC-C075300-EHT, LDC-C075400-DHT, LDC-C075400-EHT		
LDC-C100300-DHT, LDC-C100300-EHT, LDC-C100400-DHT, LDC-C100400-EHT, LDC-C100600-DHT		
LDC-C150400-DHT, LDC-C150600-DHT		

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

LDC-Series Performance Specifications with Ultra3000 (400V class) Drives

Linear Motor	Speed, max m/s (ft/s)	System Continuous Stall Current (1) Amps 0-pk	System Continuous Stall Force (1) N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Motor Rated Output kW	Ultra3000 400V-class Drives
LDC-C030100-DHT	10.0 (32.8)	4.1…6.1	74…111 (17…25)	12.1	188 (42)	0.37…0.55	2098-DSD-HV030
LDC-C030200-DHT		8.1…12.2	148…222 (33…50)	24.3	375 (84)	0.74…1.11	2098-DSD-HV100
LDC-C030200-EHT		4.1…6.1		12.1			2098-DSD-HV030
LDC-C050100-DHT	10.0 (32.8)	3.9…5.9	119…179 (27…40)	11.7	302 (68)	0.59…0.89	2098-DSD-HV030
LDC-C050200-DHT		7.9…11.8	240…359 (54…81)	23.3	600 (135)	1.20…1.79	2098-DSD-HV100
LDC-C050200-EHT		3.9…5.9		11.6			2098-DSD-HV030
LDC-C050300-DHT		11.8…17.7	363…544 (82…122)	35.9	941 (212)	1.81…2.72	2098-DSD-HV100
LDC-C050300-EHT		3.9…5.9		12.0			2098-DSD-HV030

(1) Values represent the range between no cooling (low value) and water cooling (high value).

Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

LDC-Series Performance Specifications with Ultra3000 (400V class) Drives (continued)

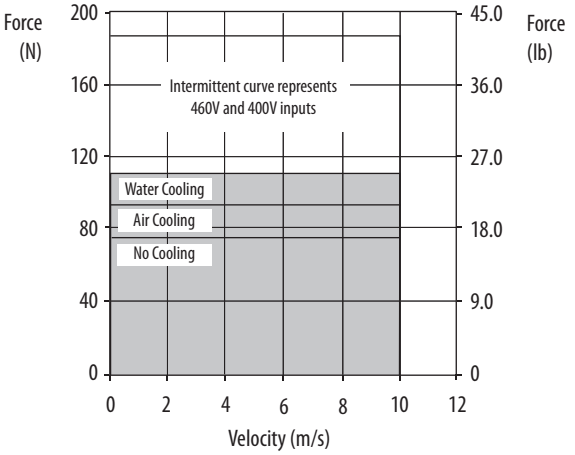
Linear Motor	**Speed, max** m/s (ft/s)	**System Continuous Stall Current** [1] Amps 0-pk	**System Continuous Stall Force** [1] N (lb)	**System Peak Stall Current** Amps 0-pk	**System Peak Stall Force** N (lb)	**Linear Motor Rated Output** kW	**Ultra3000 400V-class Drives**
LDC-C075200-DHT	10.0 (32.8)	7.7…11.5	348…523 (78…117)	22.9	882 (198)	1.74…2.61	2098-DSD-HV100
LDC-C075200-EHT		3.8…5.7		11.5			2098-DSD-HV030
LDC-C075300-DHT		11.5…17.2	523…784 (117…176)	35.6	1368 (308)	2.61…3.92	2098-DSD-HV100
LDC-C075300-EHT		3.8…5.7		11.9			2098-DSD-HV030
LDC-C075400-DHT		15.3…23.0	697…1045 (157…235)	47.4	1824 (410)	3.48…5.22	2098-DSD-HV150
LDC-C075400-EHT		7.7…11.5		23.7			2098-DSD-HV100
LDC-C100300-DHT	10.0 (32.8)	11.1…16.7	674…1012 (152…227)	34.3	1767 (397)	3.37…5.06	2098-DSD-HV100
LDC-C100300-EHT		3.7…5.6		11.4			2098-DSD-HV030
LDC-C100400-DHT		14.8…22.2	899…1349 (202…303)	45.7	2356 (530)	4.49…6.74	2098-DSD-HV150
LDC-C100400-EHT		7.4…11.1		22.8			2098-DSD-HV100
LDC-C100600-DHT		22.2…33.3	1349…2023 (303…455)	68.5	3534 (794)	6.74…10.11	2098-DSD-HV220
LDC-C100600-EHT		11.1…16.7		34.3			2098-DSD-HV100
LDC-C150400-DHT	10.0 (32.8)	14.1…21.1	1281…1922 (288…432)	45.2	3498 (786)	6.40…9.61	2098-DSD-HV150
LDC-C150400-EHT		7.0…10.6		22.6			2098-DSD-HV100
LDC-C150600-DHT		21.1…31.7	1922…2882 (432…648)	67.8	5246 (1179)	9.61…14.41	2098-DSD-HV220
LDC-C150600-EHT		10.6…15.8		33.9			2098-DSD-HV100

(1) Values represent the range between no cooling (low value) and water cooling (high value).

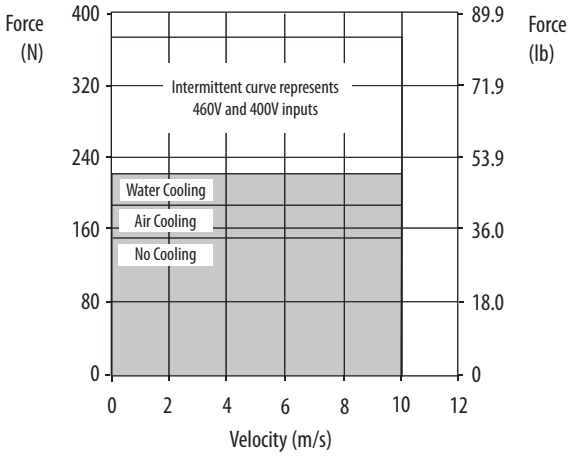
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (400V class) Drives/LDC-Series Linear Motor Curves

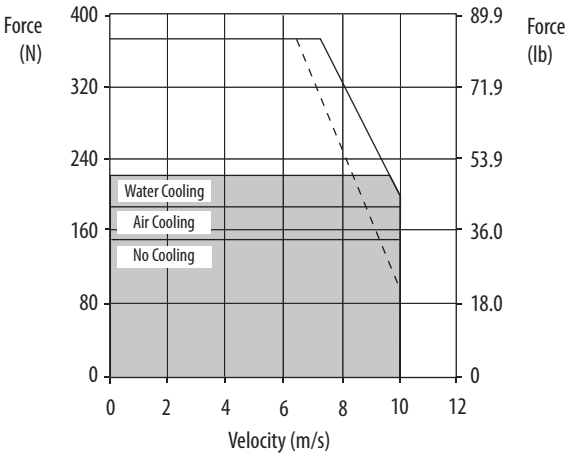
2098-DSD-HV030 and LDC-C030100-DHT



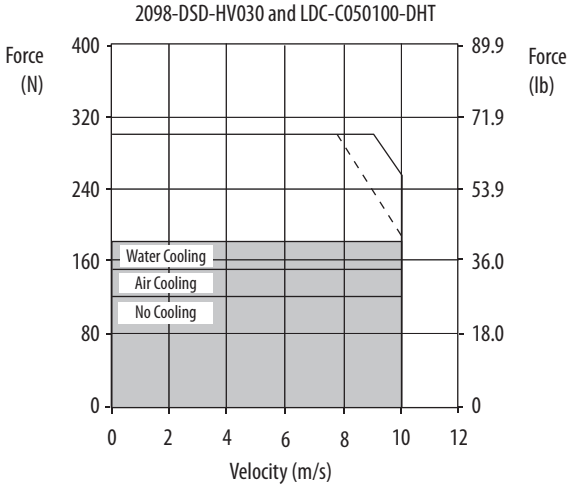
2098-DSD-HV100 and LDC-C030200-DHT



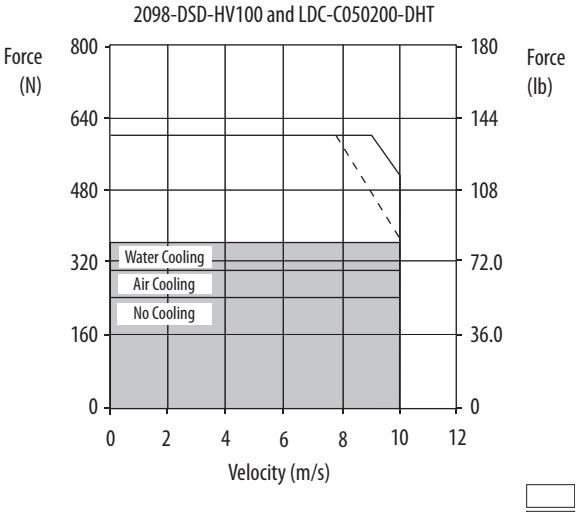
2098-DSD-HV030 and LDC-C030200-EHT



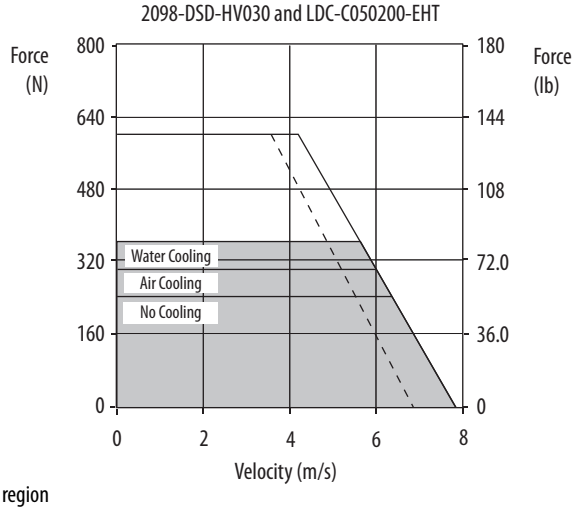
2098-DSD-HV030 and LDC-C050100-DHT



2098-DSD-HV100 and LDC-C050200-DHT



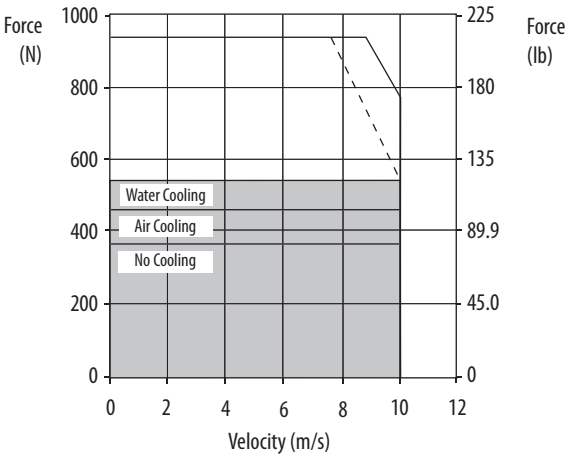
2098-DSD-HV030 and LDC-C050200-EHT



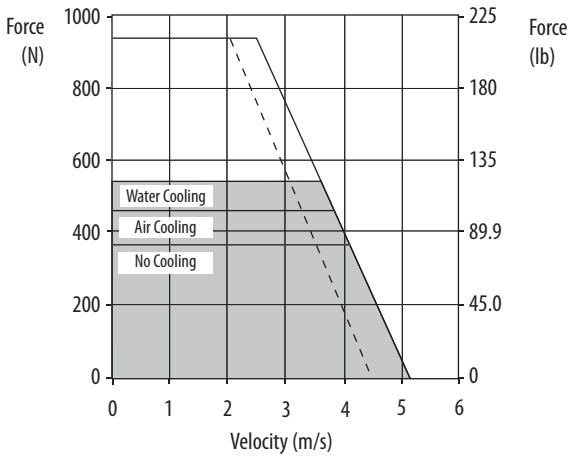
= Intermittent operating region
= Intermittent operating region with 400V AC (rms) input voltage
= Continuous operating region

Ultra3000 (400V class) Drives/LDC-Series Linear Motor Curves (continued)

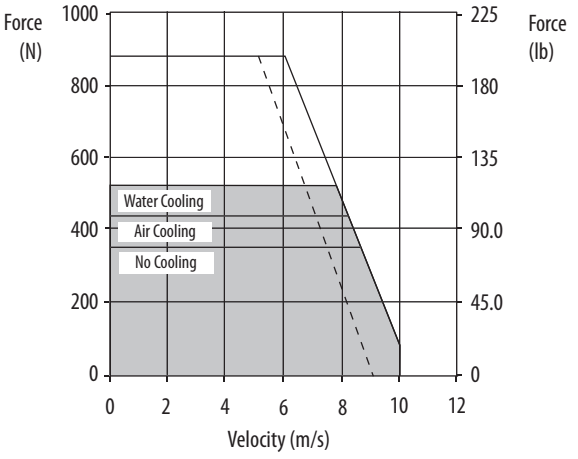
2098-DSD-HV100 and LDC-C050300-DHT



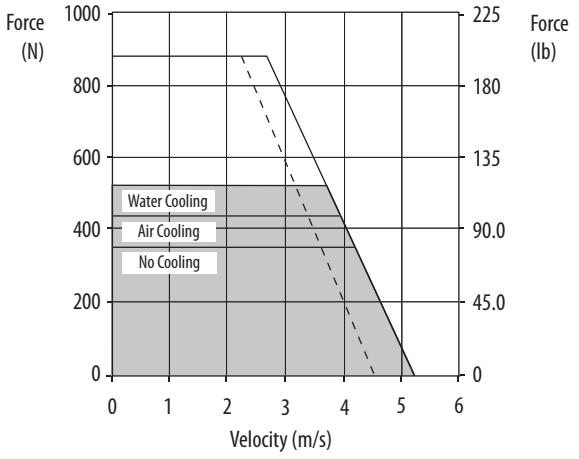
2098-DSD-HV030 and LDC-C050300-EHT



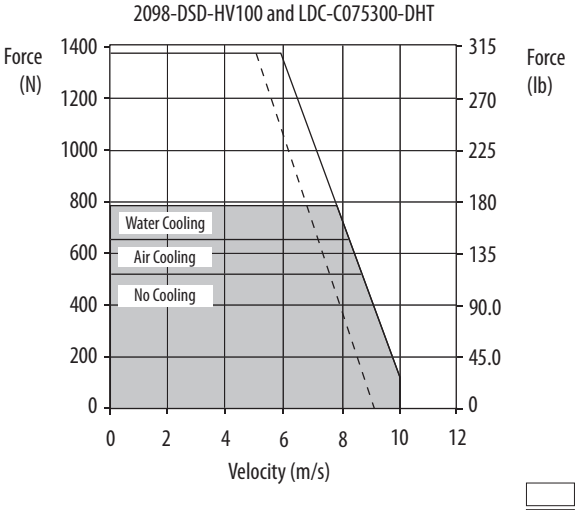
2098-DSD-HV100 and LDC-C075200-DHT



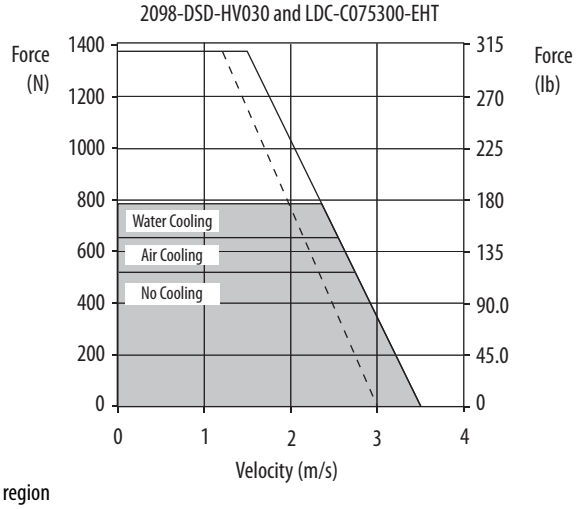
2098-DSD-HV030 and LDC-C075200-EHT



2098-DSD-HV100 and LDC-C075300-DHT



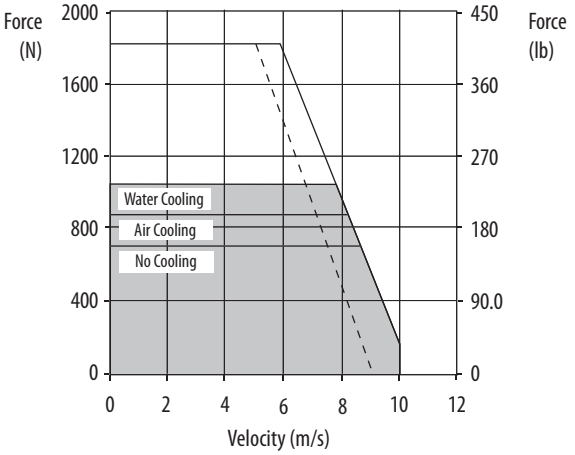
2098-DSD-HV030 and LDC-C075300-EHT



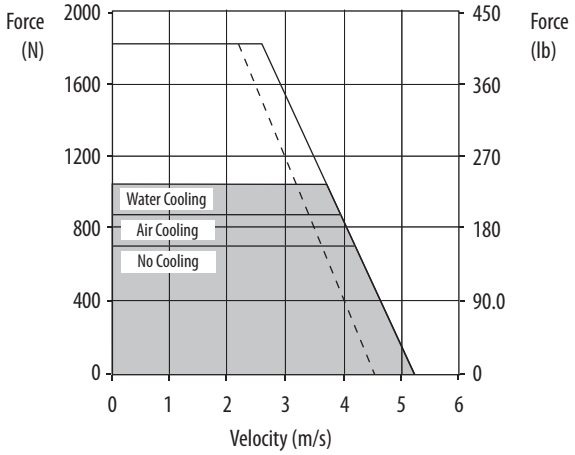
= Intermittent operating region
= Intermittent operating region with 400V AC (rms) input voltage
= Continuous operating region

Ultra3000 (400V class) Drives/LDC-Series Linear Motor Curves (continued)

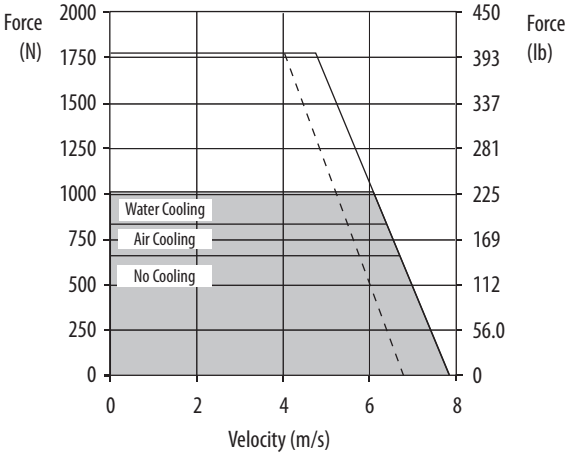
2098-DSD-HV150 and LDC-C075400-DHT



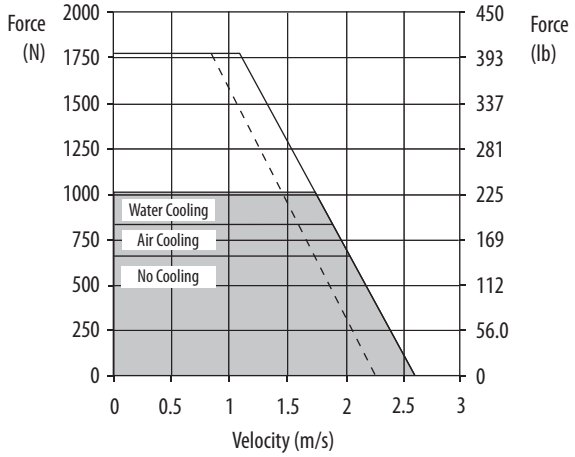
2098-DSD-HV100 and LDC-C075400-EHT



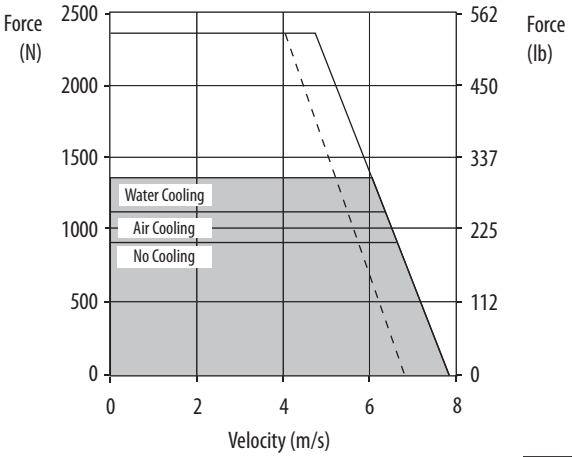
2098-DSD-HV100 and LDC-C100300-DHT



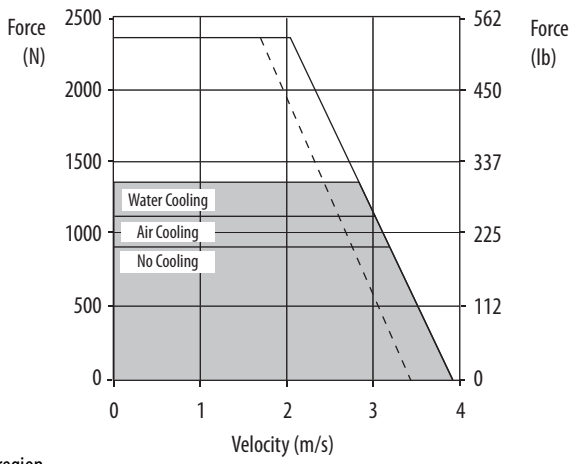
2098-DSD-HV030 and LDC-C100300-EHT



2098-DSD-HV150 and LDC-C100400-DHT



2098-DSD-HV100 and LDC-C100400-EHT



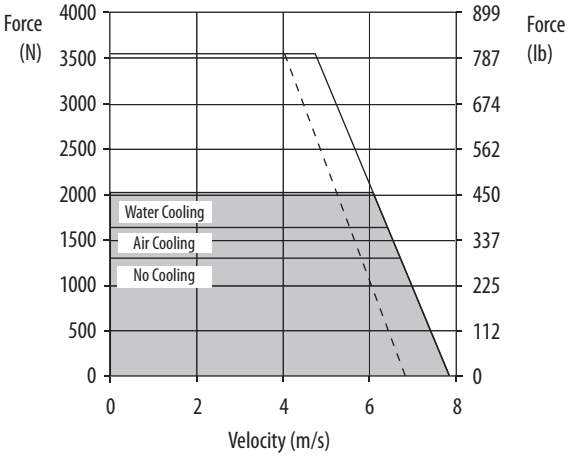
= Intermittent operating region

= Intermittent operating region with 400V AC (rms) input voltage

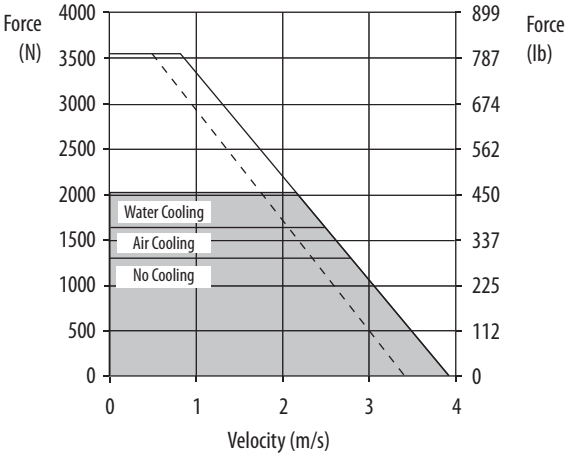
= Continuous operating region

Ultra3000 (400V class) Drives/LDC-Series Linear Motor Curves (continued)

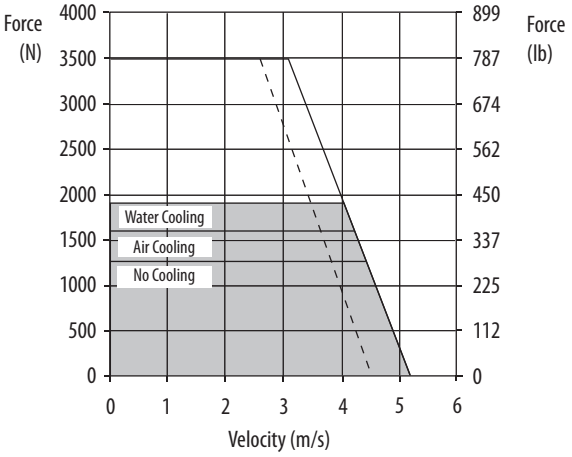
2098-DSD-HV220 and LDC-C100600-DHT



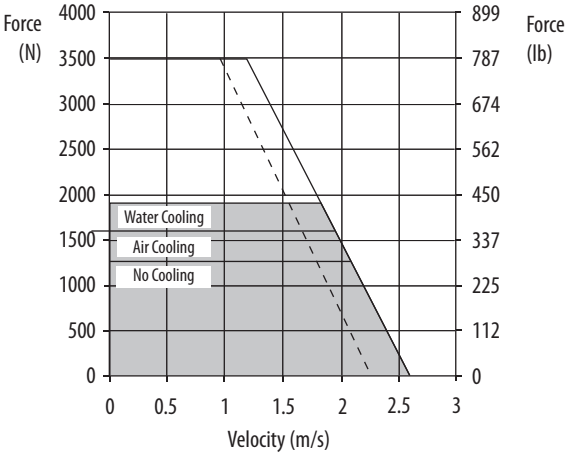
2098-DSD-HV100 and LDC-C100600-EHT



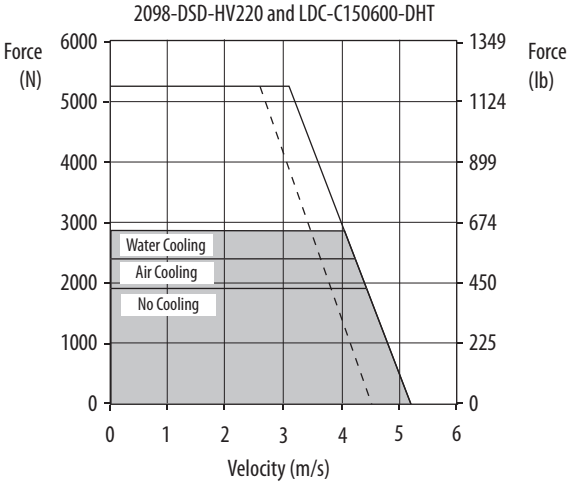
2098-DSD-HV150 and LDC-C150400-DHT



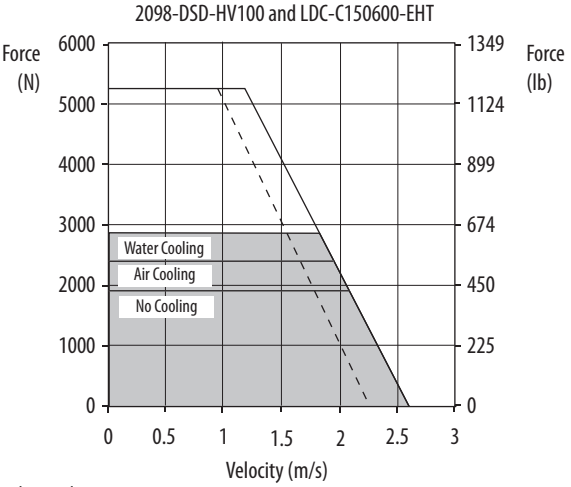
2098-DSD-HV100 and LDC-C150400-EHT



2098-DSD-HV220 and LDC-C150600-DHT



2098-DSD-HV100 and LDC-C150600-EHT



= Intermittent operating region
= Intermittent operating region with 400V AC (rms) input voltage
= Continuous operating region

Ultra3000 (200V class) Drives with LDL-Series Linear Motors

This section provides system combination information for the Ultra3000 (200V class) drives when matched with LDL-Series™ ironless linear motors. Included are power and feedback cable catalog numbers, system performance specifications, and the optimum force/velocity curves.

Linear Motor Cable Combinations

Linear Motors	Motor Power Cable	Motor Feedback Cable (1)
LDL-N030120-DHT, LDL-N030240-DHT, LDL-N030240-EHT	2090-CP*x*M7DF-16AA*xx* (standard, non-flex) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)	2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM7DF-CDAF*xx* (continuous-flex) Sin/Cos or TTL Encoder Feedback
LDL-N050120-DHT, LDL-N050240-DHT, LDL-N050240-EHT, LDL-N050360-DHT, LDL-N050360-EHT, LDL-N050480-DHT, LDL-N050480-EHT		
LDL-N075480-DHT, LDL-N075480-EHT		
LDL-T030120-DHT, LDL-T030240-DHT, LDL-T030240-EHT		
LDL-T050120-DHT, LDL-T050240-DHT, LDL-T050240-EHT, LDL-T050360-DHT, LDL-T050480-DHT, LDL-T050480-EHT		
LDL-T075480-EHT, LDL-T075480-EHT		

(1) Use drive-mounted breakout board (catalog number 2090-UXBB-DM15) on the drive end. Refer to Required Drive Accessories on page 4.

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on page 7.
Motor-end connector kits, and panel-mounted breakout components (drive end), are available for motor power/brake and feedback cables. Refer to Optional Drive Accessories on page 6.
Cable length *xx* is in meters. Refer to the Kinetix Motion Accessories Technical Data, publication GMC-TD004, for standard cable lengths.

LDL-Series Performance Specifications with Ultra3000 (200V class) Drives

Linear Motor	Speed, max m/s (ft/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Motor Rated Output kW	Ultra3000 200V-class Drives
LDL-N030120-DHT	10.0 (32.8)	3.0	63 (14)	9.9	209 (47)	0.31	2098-DSD-010
LDL-N030240-DHT		6.0	126 (28)	19.9	417 (94)	0.63	2098-DSD-020
LDL-N030240-EHT		3.0		9.9			2098-DSD-010
LDL-T030120-DHT		3.0	72 (16)	9.9	239 (54)	0.36	2098-DSD-010
LDL-T030240-DHT		6.0	144 (32)	19.9	479 (108)	0.72	2098-DSD-020
LDL-T030240-EHT		3.0		9.9			2098-DSD-010

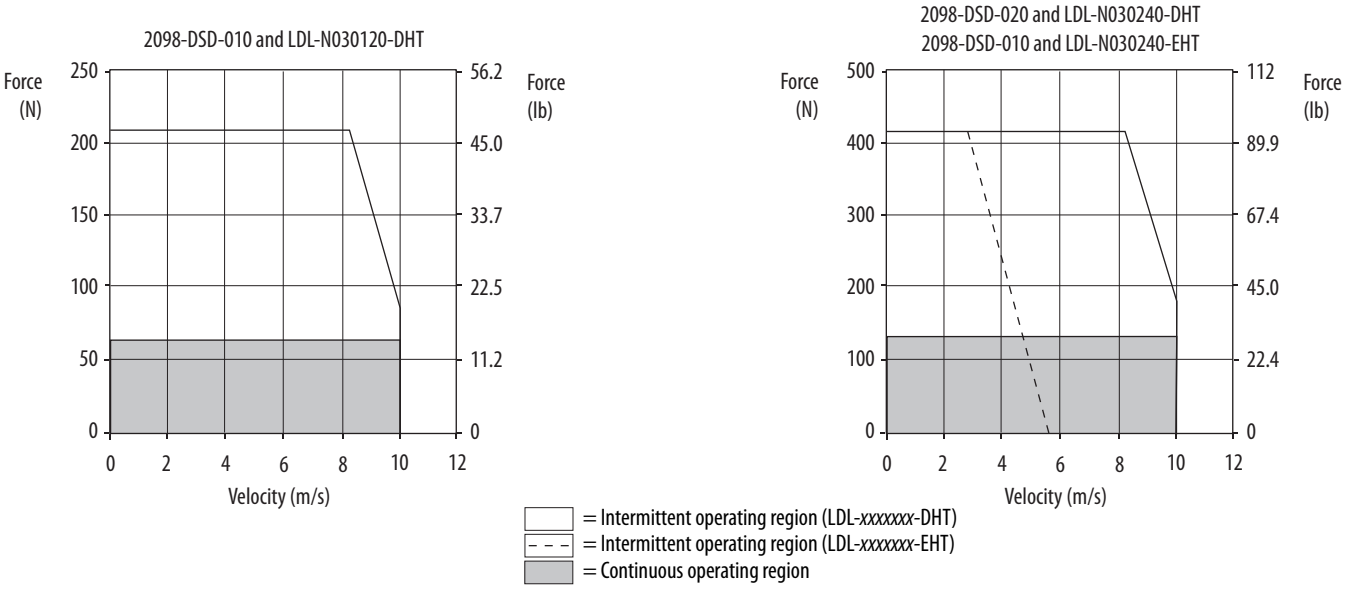
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

LDL-Series Performance Specifications with Ultra3000 (200V class) Drives (continued)

Linear Motor	Speed, max m/s (ft/s)	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Linear Motor Rated Output kW	Ultra3000 200V-class Drives
LDL-N050120-DHT	10.0 (32.8)	2.7	96 (22)	9.1	317 (71)	0.48	2098-DSD-010
LDL-N050240-DHT		5.5	191 (43)	18.1	635 (143)	0.95	2098-DSD-020
LDL-N050240-EHT		2.7		9.1			2098-DSD-010
LDL-N050360-DHT		8.2	287 (65)	27.2	952 (214)	1.43	2098-DSD-020
LDL-N050360-EHT		2.7		9.1			2098-DSD-010
LDL-N050480-DHT		10.9	383 (86)	36.3	1269 (285)	1.91	2098-DSD-075
LDL-N050480-EHT		5.5		18.1			2098-DSD-020
LDL-T050120-DHT		2.7	110 (25)	9.1	364 (82)	0.55	2098-DSD-010
LDL-T050240-DHT		5.5	220 (49)	18.1	728 (164)	1.10	2098-DSD-020
LDL-T050240-EHT		2.7		9.1			2098-DSD-010
LDL-T050360-DHT		8.2	329 (74)	27.2	1093 (246)	1.64	2098-DSD-020
LDL-T050480-DHT		10.9	439 (99)	36.3	1457 (327)	2.19	2098-DSD-075
LDL-T050480-EHT		5.5		18.1			2098-DSD-020
LDL-N075480-DHT	10.0 (32.8)	9.9	519 (117)	32.8	1723 (387)	2.59	2098-DSD-075
LDL-N075480-EHT		4.9		16.4			2098-DSD-020
LDL-T075480-DHT		9.9	596 (134)	32.8	1977 (444)	2.98	2098-DSD-075
LDL-T075480-EHT		4.9		16.4			2098-DSD-020

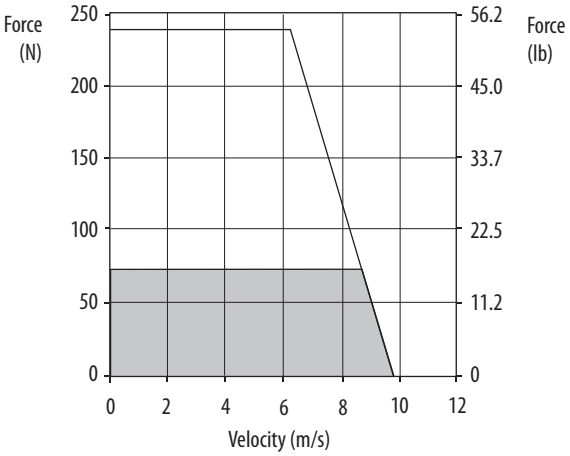
Performance specification data and curves reflect nominal system performance of a typical system with motor at 40 °C (104 °F) and drive at 50 °C (122 °F) ambient and rated line voltage. For additional information on ambient and line conditions, refer to Motion Analyzer software, version 4.7 or later.

Ultra3000 (200V class) Drives/LDL-Series Linear Motor Curves

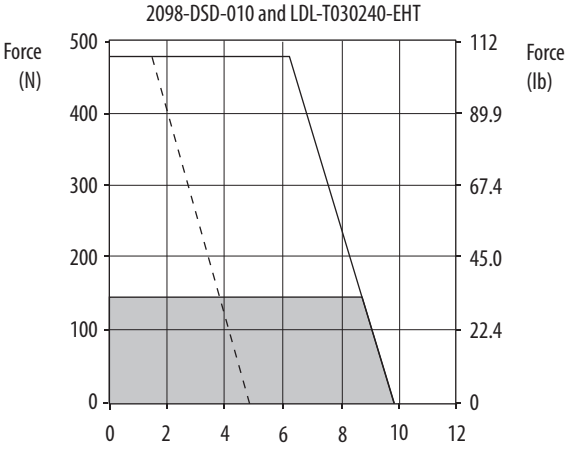


Ultra3000 (200V class) Drives/LDL-Series Linear Motor Curves (continued)

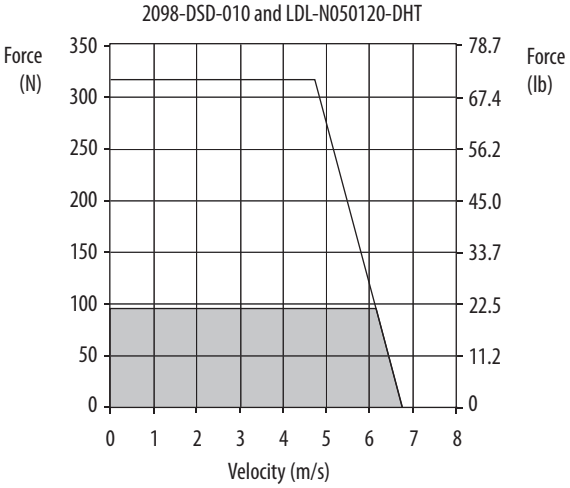
2098-DSD-010 and LDL-T030120-DHT



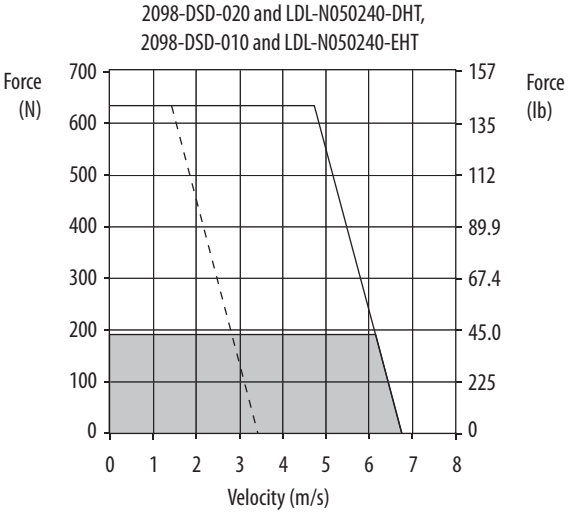
2098-DSD-020 and LDL-T030240-DHT
2098-DSD-010 and LDL-T030240-EHT



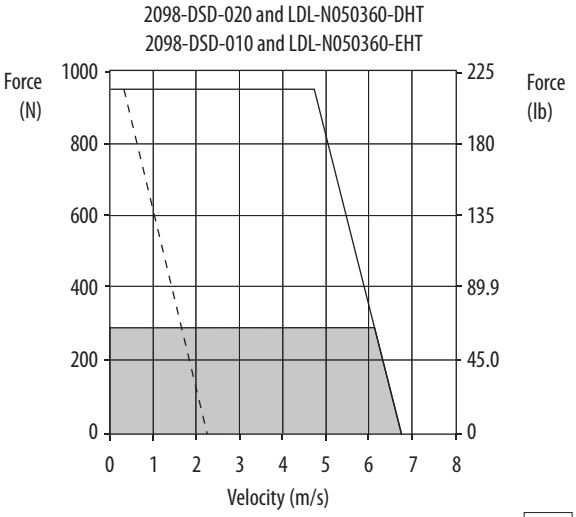
2098-DSD-010 and LDL-N050120-DHT



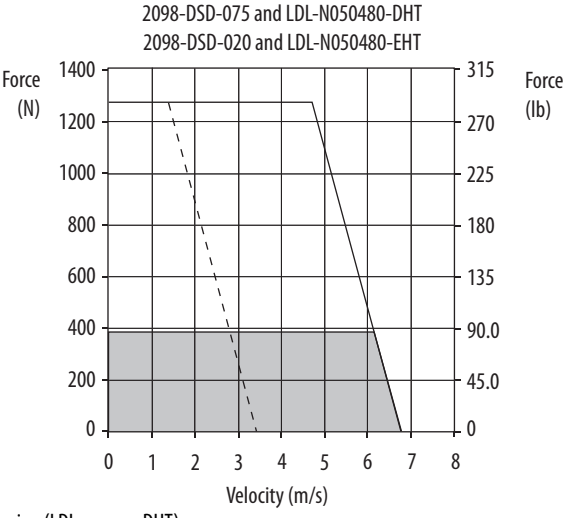
2098-DSD-020 and LDL-N050240-DHT,
2098-DSD-010 and LDL-N050240-EHT



2098-DSD-020 and LDL-N050360-DHT
2098-DSD-010 and LDL-N050360-EHT



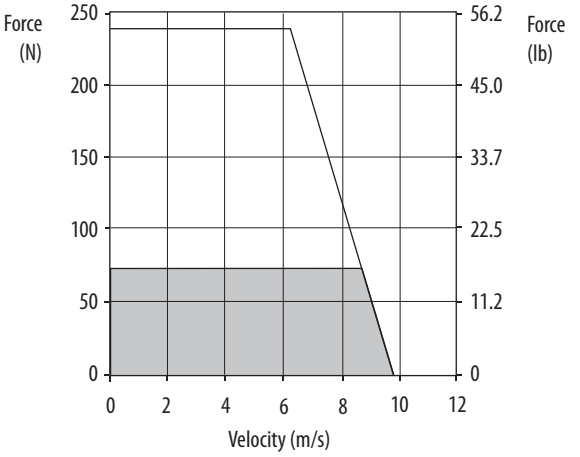
2098-DSD-075 and LDL-N050480-DHT
2098-DSD-020 and LDL-N050480-EHT



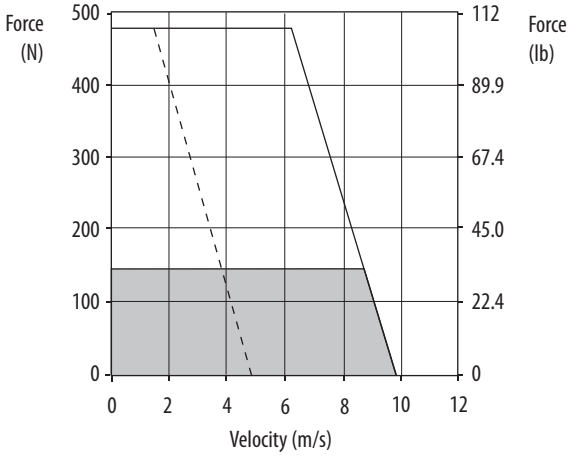
= Intermittent operating region (LDL-*xxxxxx*-DHT)
= Intermittent operating region (LDL-*xxxxxx*-EHT)
= Continuous operating region

Ultra3000 (200V class) Drives/LDL-Series Linear Motor Curves (continued)

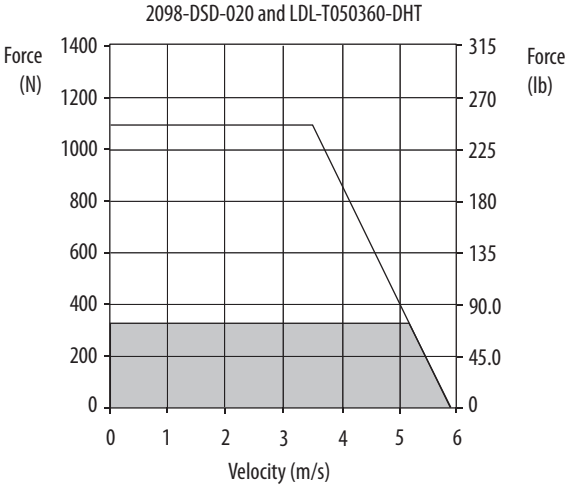
2098-DSD-010 and LDL-T030120-DHT



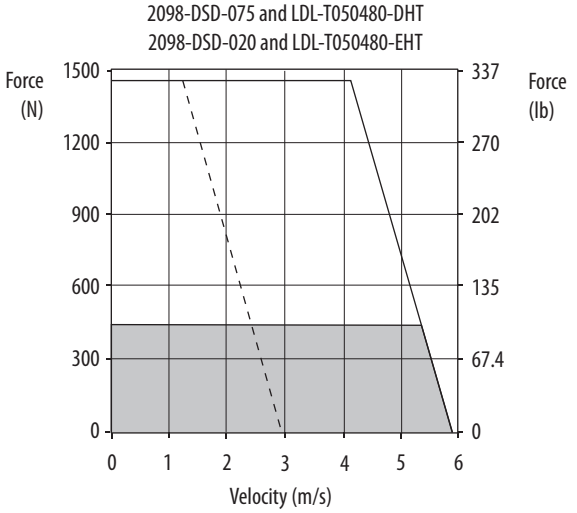
2098-DSD-020 and LDL-T030240-DHT
2098-DSD-010 and LDL-T030240-EHT



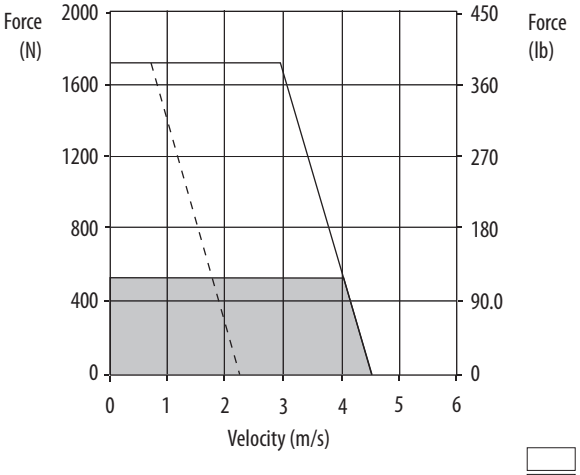
2098-DSD-020 and LDL-T050360-DHT



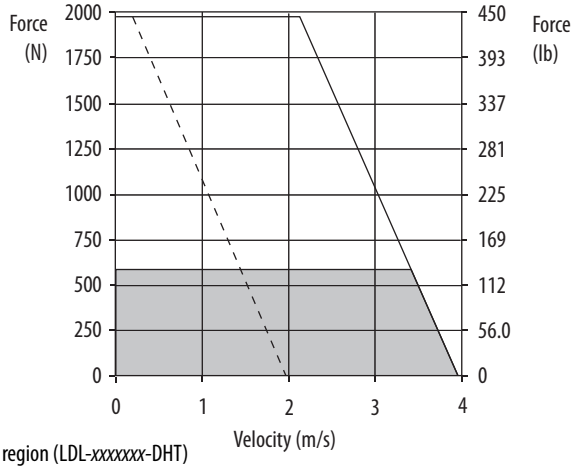
2098-DSD-075 and LDL-T050480-DHT
2098-DSD-020 and LDL-T050480-EHT



2098-DSD-075 and LDL-N075480-DHT
2098-DSD-020 and LDL-N075480-EHT



2098-DSD-075 and LDL-T075480-DHT
2098-DSD-020 and LDL-T075480-EHT



= Intermittent operating region (LDL-*xxxxxxx*-DHT)
= Intermittent operating region (LDL-*xxxxxxx*-EHT)
= Continuous operating region

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix Motion Control Selection Guide, publication GMC-SG001	Overview of Kinetix servo drives, motors, actuators, and motion accessories designed to help make initial decisions for the motion control products best suited for your system requirements.
Kinetix Rotary Motion Specifications, publication GMC-TD001	Product specifications for MP-Series (Bulletin MPL, MPM, MPF, MPS), TL-Series, RDD-Series™, and HPK-Series™ rotary motors.
Kinetix Linear Motion Specifications, publication GMC-TD002	Product specifications for Bulletin MPAS and MPMA linear stages, Bulletin MPAR, MPAI, and TLAR electric cylinders, and LDC-Series and LDL-Series linear motors.
Kinetix Servo Drives Specifications, publication GMC-TD003	Product specifications for Kinetix Integrated Motion over the EtherNet/IP network, Integrated Motion over SERCOS interface, EtherNet/IP networking, and component servo drive families.
Kinetix Motion Accessories Specifications, publication GMC-TD004	Product specifications for Bulletin 2090 motor and interface cables, low-profile connector kits, drive power components, and other servo drive accessory items.
Kinetix 6000 and Kinetix 6200/6500 Drive Systems Design Guide, publication GMC-RM003	System design guide to determine and select the required (drive specific) drive module, power accessory, connector kit, motor cable, and interface cable catalog numbers for your drive and motor/actuator motion control system. Included are system performance specifications and torque/speed curves (rotary motion) and force/velocity curves (linear motion) for your motion application.
Kinetix 300/350 Drive Systems Design Guide, publication GMC-RM004	
Kinetix 3 Drive Systems Design Guide, publication GMC-RM005	
Kinetix 2000 Drive Systems Design Guide, publication GMC-RM006	
Kinetix 7000 Drive Systems Design Guide, publication GMC-RM007	
Kinetix 6200 and Kinetix 6500 Safe Speed Monitoring Servo Drives Safety Reference Manual, publication 2094-RM001	Information on wiring, configuring, and troubleshooting the safe-speed features of your Kinetix 6200 and Kinetix 6500 drives.
Kinetix 6200 and Kinetix 6500 Safe Torque-off Servo Drives Safety Reference Manual, publication 2094-RM002	Information on wiring, configuring, and troubleshooting the safe torque-off features of your Kinetix 6200 and Kinetix 6500 drives.
Kinetix Safe-off Feature Safety Reference Manual, publication GMC-RM002	Information on wiring and troubleshooting your Kinetix 6000 and Kinetix 7000 servo drives with the safe-off feature.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Information, examples, and techniques designed to minimize system failures caused by electrical noise.
EMC Noise Management DVD, publication GMC-SP004	
ControlLogix Selection Guide, publication 1756-SG001	Information to determine which ControlLogix controller fits your application and the product specifications to help design a ControlLogix system and select the appropriate components.
CompactLogix Selection Guide, publication 1769-SG001	Information to determine which CompactLogix™ controller fits your application and the product specifications to help design a CompactLogix system and select the appropriate components.
Integrated Architecture Recommended Literature Reference Manual, publication IASIMP-RM001	This document provides lists of technical publications for Integrated Architecture™ products. These lists are not all-inclusive, but they do include the most-commonly accessed publications for the related products.
Industrial Ethernet Media Brochure, publication 1585-BR001	Information to determine which Bulletin 1585 Ethernet cable fits your application and the product specifications to help select the appropriate components.
Motion Analyzer software download from http://www.ab.com/motion/software/analyzer.html	Comprehensive motion application sizing tool used for analysis, optimization, selection, and validation of your Kinetix Motion Control system.
Rockwell Automation Configuration and Selection Tools, website http://www.ab.com	Online product selection and system configuration tools, including AutoCad (DXF) drawings.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Notes:

Important Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.rockwellautomation.com/literature/) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this publication are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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