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This is preliminary selection guide material for the Kinetix 300 EtherNet/IP Indexing Servo Drives. The next revision of the Kinetix Motion Control Selection Guide, publication GMC-SG001O-EN-P, is coming soon.

Kinetix 300 EtherNet/IP Indexing Servo Drives

Servo Drive Features Comparison

Drive Features	Kinetix 2000	Kinetix 300
Main Characteristics	• Low-power multi-axis SERCOS interface solution for complex motion applications • Kinetix 6000 drive functionality in a smaller package • Common Bus	• Single-axis solution for low-complexity motion applications • Low cost EtherNet/IP network solution with integrated safe torque-off functionality • Flexible control architecture for simple analog, PTO, or EtherNet/IP Indexing control • 120V models drive 240V motors at full speed • Memory module for Automatic Device Replacement (ADR)
		Safe Torque-off Control ISO-13849-1 Certified, PLd, category 3
Drive Configuration	1…8 Axes on Bulletin 2093 Power Rail	Single-axis
Input Voltage	170…264V AC, Single-phase or Three-phase (230V systems)	• 120V AC, single-phase • 240V AC, single-phase with integrated AC (EMC) line filter • 120V/240V AC, single-phase or three-phase • 480V AC, three-phase
Common Bus Follower Input Voltage	240…375V DC (230V systems)	N/A
Continuous Output Power	2.0 kW (single-phase input)	0.4…1.7 kW (single-phase input)
		0.5…3.0 kW (single-phase or three-phase input)
	3.0 kW (three-phase input)	1.0…3.0 kW (three-phase input)
Continuous Output Current	1.0…9.5 A rms	2.0…12.0 A rms
Drive Digital Inputs	• Enable, Home, OverTravel ± • High Speed Registration (2/axis)	• Enable and OverTravel ± • High Speed Registration (1) • Eight configurable inputs
Drive Digital Outputs	Motor Brake Relay Output (with suppression)	• Ready • Four configurable outputs
DPI Connector	• DriveExplorer • DPI HIM	N/A
Programming	RSLogix 5000 Software (Ladder Logic, Structured Text, and Sequential Function Charts)	• Built-in Web server for configuration and diagnostics • RSLogix 5000 Software (Ladder Logic, Structured Text, and Sequential Function Charts)
Logix Module Compatibility	• 1756-M03SE, 1756-M08SE, 1756-M16SE • 1768-M04SE	• 1769-L23*x* or 1769-L3*x* controller with integrated EtherNet/IP port • 1768-L4*x* controller with 1768-ENBT or 1768-EWEB module • 1766-L32*x* controller with integrated EtherNet/IP port
I/O Control	Fiber-optic SERCOS	EtherNet/IP
Feedback	• High-resolution absolute multi-turn and single-turn encoder • Incremental Encoder	
	Feedback-only Auxiliary Axis	Auxiliary axis for master gearing mode
Rotary Motors Compatibility	• MP-Series (Bulletin MPL/MPM/MPF/MPS) • TL-Series (Bulletin TLY)	
Linear Motors Compatibility	• LDC-Series Iron Core • LDL-Series Ironless	N/A
Linear Actuator Compatibility	• MP-Series Electric Cylinders • MP-Series Heavy Duty Electric Cylinders	• TL-Series Electric Cylinders • MP-Series Linear Stages
Accessory Compatibility	• 2094 Line Interface Modules • 1336 External Active Shunt	• 2097 I/O Terminal Expansion Block • 2097 Memory Module Programmer • 2097 AC (EMC) Line Filters • 2097 Shunt Resistors

Kinetix 300 drives meet CE compliance and are UL Listed to U.S. and Canadian safety standards. Refer to http://www.ab.com for more information.

Kinetix 300 EtherNet/IP Indexing Servo Drives



The Kinetix 300 EtherNet/IP indexing drive provides a cost-effective single-axis solution for low axis count motion control applications. Using one standard Ethernet/IP network for an entire machine - including Motion, Control, I/O, and HMI simplifies wiring, reduces panel layout costs, and allows easy integration into manufacturing and enterprise systems. In addition, safe torque-off functionality helps protect personnel while increasing machine productivity.

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Kinetix 300 Servo Drive Components

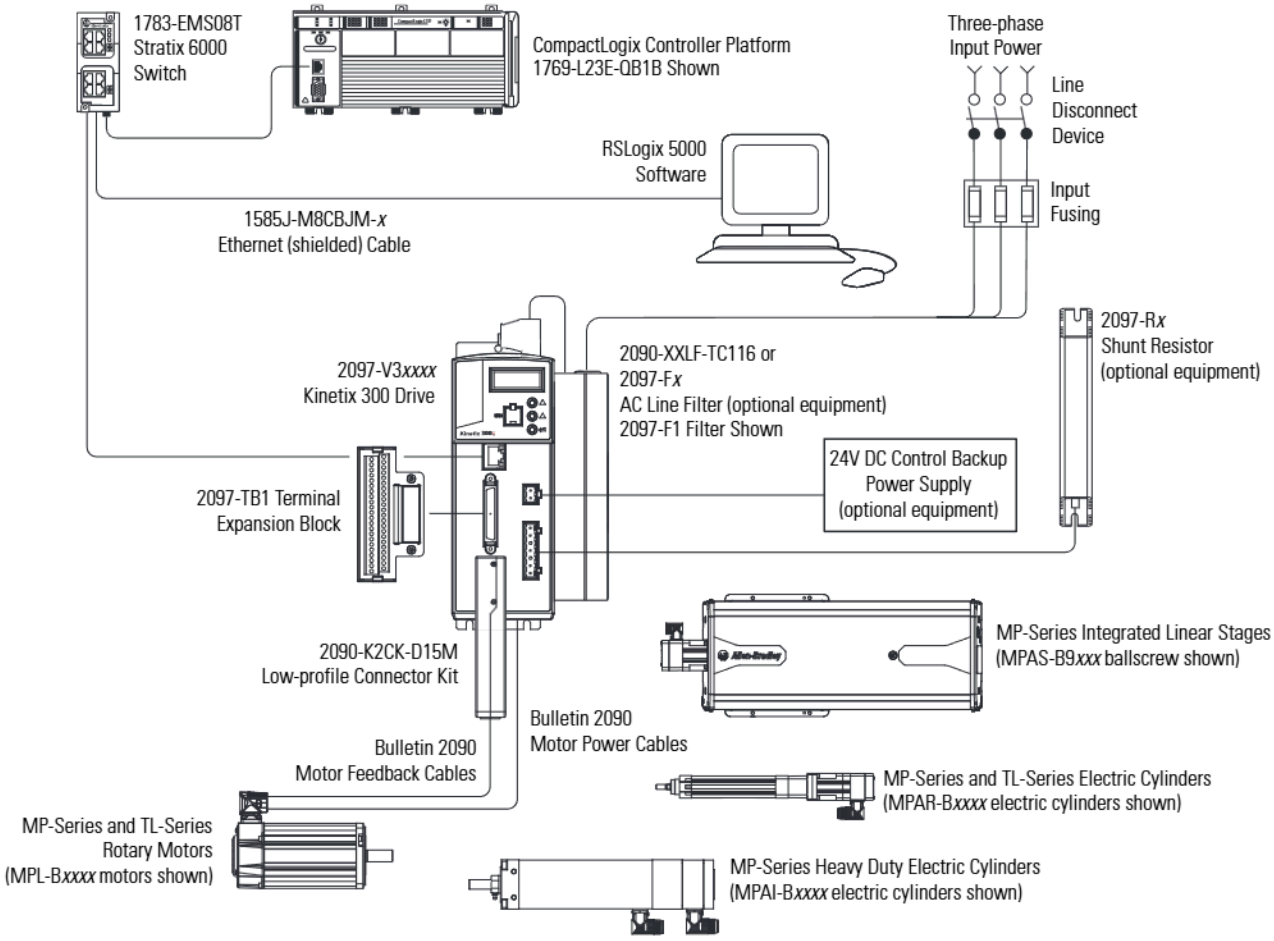
Kinetix 300 servo drive systems consist of these required components:

- One 2097-V3*xxxx* indexing drive
- One MP-Series or TL-Series servo motor or linear actuator
- One motor power and motor feedback cable
- One 2090-K2CK-D15M low-profile connector kit for motor feedback
- One 2097-TB1 I/O terminal expansion block
- 1585J-M8CBJM-*x* (shielded) Ethernet cable

Kinetix 300 servo drive systems may also include any of these optional components:

- One 2097-F*x* or 2090-XXLF-TC116 AC line filter
- One 2097-R*x* shunt resistor

Typical Configuration - Kinetix 300 Drive System



Kinetix 300 Drive Power Specifications

The 2097-V31PR*x* drives are capable of driving 240V motors at full speed.

Kinetix 300 Drive (single-phase) Power Specifications

Attribute	2097-V31PR0	2097-V31PR2	2097-V32PR0	2097-V32PR2	2097-V32PR4
AC input voltage	120/240V rms single-phase		240V rms single-phase		
AC input frequency	48…62 Hz				
Main AC input current [1] Nom (rms) 120V input Max inrush (0-pk) 120V input Nom (rms) 240V input Max inrush (0-pk) 240V input	 9.7 A 2.3 A 5.0 A 1.1 A	 16.8 A 2.3A 8.6 A 1.1 A	 5.0 A 136 A	 8.6 A 2.3 A	 15.0 A 2.3 A
Integrated AC line filter	No	No	Yes	Yes	Yes
Control power backup input voltage	20…26V DC				
Control power backup input current Nom Max inrush (0-pk)	 500 mA 30 A				
Continuous output current (rms)	2.0 A	4.0 A	2.0 A	4.0 A	8.0 A
Continuous output current (0-pk)	2.8 A	5.7 A	2.8 A	5.7 A	11.3 A
Peak output current (rms) [2]	6.0 A	12.0 A	6.0 A	12.0 A	24.0 A
Peak output current (0-pk)	8.5 A	17.0 A	8.5 A	17.0 A	33.9 A
Continuous power output	0.40 kW	0.80 kW	0.40 kW	0.80 kW	1.70 kW
Shunt On	390V DC		780V DC		
Shunt Off	375V DC		750V DC		
Overvoltage	430V DC		850V DC		
Short circuit current rating	100,000 A (rms) symmetrical				

(1) Kinetix 300 drive modules are limited to 1 AC mains power cycling per minute.

(2) Peak RMS current allowed for up to 2 seconds with a 50% duty cycle.

Kinetix 300 Drive (single-phase and three-phase) Power Specifications

Attribute	2097-V33PR1	2097-V33PR3	2097-V33PR5	2097-V33PR6
AC input voltage	120/240V rms single-phase or three-phase			
AC input frequency	48…62 Hz			
Main AC input current [1] Nom (rms) 120V input Max inrush (0-pk) 120V input Nom (rms) 240V input Max inrush (0-pk) 240V input	 5.0 A 136 A 3.0A 136 A	 8.6 A 2.3 A 5.0A 2.3 A	 15.0 A 2.3 A 8.7A 2.3 A	 24.0 A 11.3 A 13.9 A 11.3 A
Integrated AC line filter	No	No	No	No
Control power backup input voltage	20…26V DC			
Control power backup input current Nom Max inrush (0-pk)	 500 mA 30 A			
Continuous output current (rms)	2.0 A	4.0 A	8.0 A	12.0 A
Continuous output current (0-pk)	2.8 A	5.7 A	11.3 A	17.0 A
Peak output current (rms) [2]	6.0 A	12.0 A	24.0 A	36.0 A
Peak output current (0-pk)	8.5 A	17.0 A	33.9 A	50.9 A
Continuous power output	0.50 kW	1.00 kW	2.00 kW	3.00 kW
Shunt On	390 V DC			
Shunt Off	375V DC			
Overvoltage	430V DC			
Short circuit current rating	100,000 A (rms) symmetrical			

(1) Kinetix 300 drive modules are limited to 1 AC mains power cycling per minute.

(2) Peak RMS current allowed for up to 2 seconds with a 50% duty cycle.

Kinetix 300 Drive (three-phase) Power Specifications

Attribute	2097-V34PR3	2097-V34PR5	2097-V34PR6
AC input voltage	480V rms three-phase		
AC input frequency	48…62 Hz		
Main AC input current [1] Nom (rms) Max inrush (0-pk)	 2.7A 4.5 A	 5.5 A 4.5 A	 7.9 A 22.6 A
Integrated AC line filter	No	No	No
Control power backup input voltage	20…26V DC		
Control power backup input current Nom Max inrush (0-pk)	 500 mA 30 A		
Continuous output current (rms)	2.0 A	4.0 A	6.0 A
Continuous output current (0-pk)	2.8 A	5.7 A	8.5 A
Peak output current (rms) [2]	6.0 A	12.0 A	18.0 A
Peak output current (0-pk)	8.5 A	17.0 A	25.5 A
Continuous power output	1.00 kW	2.00 kW	3.00 kW
Shunt On	780V DC		
Shunt Off	750V DC		
Overvoltage	850V DC		
Short circuit current rating	100,000 A (rms) symmetrical		

(1) Kinetix 300 drive modules are limited to 1 AC mains power cycling per minute.

(2) Peak RMS current allowed for up to 2 seconds with a 50% duty cycle.

Kinetix 300 Drive Accessory Specifications

Kinetix 300 drive accessories include the I/O terminal block, memory module programmer, memory modules, AC line filters, and shunt resistors.

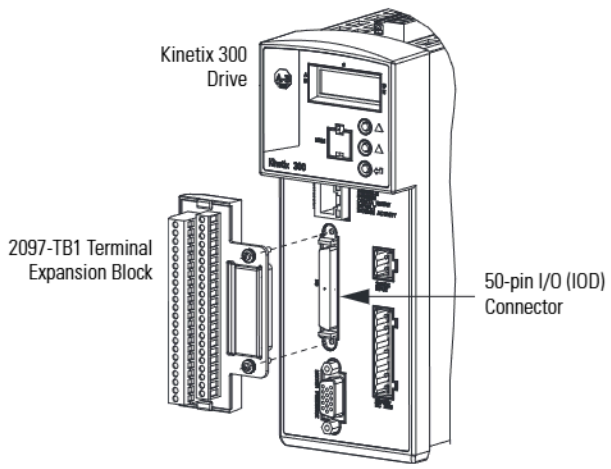
I/O Terminal Expansion Block

The 2097-TB1 I/O terminal expansion block is a drive-mounted breakout board for making flying-lead cable connections to the 50-pin IOD connector.

I/O Terminal Block Specifications (2097-TB1)

Wire Size	Change in Width [1]	Change in Depth [1]
1.5…0.2 mm^2 (16…24 AWG)	10 mm (0.38 in.)	11 mm (0.42 in.)

(1) Add this value to the dimensions of your Kinetix 300 drive.



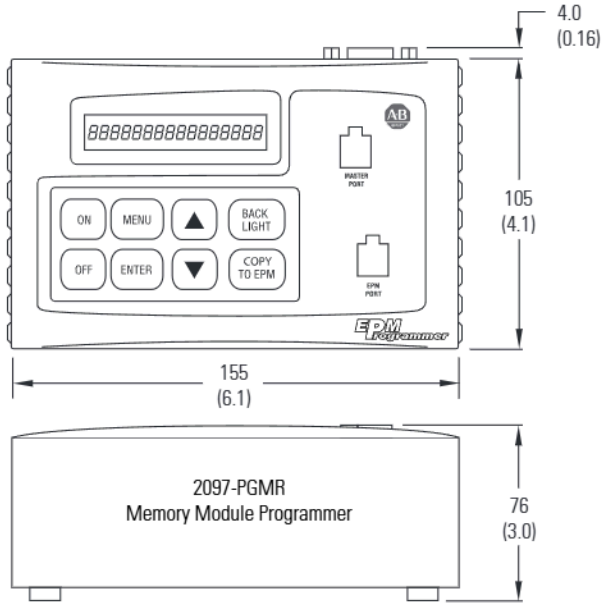
Memory Module Programmer

The 2097-PGMR memory module programmer is a hand-held device for duplicating your Kinetix 300 drive configuration to reduce down-time and troubleshooting.

Memory Module Programmer Specifications (2097-PGMR)

Attribute		Value
DC Supply	Internal batteries	+ 6V DC, min 150 mA supply
		4 mono-cells (type D), 1.5V DC each
	External power supply unit	+ 6V DC, 300 mA, stabilized
Display	Type	LDC
	Display format	Text
	Lines x characters	1 x 16
	Contrast setting	Via menu
Memory	Data memory	Up to 120 parameter files for inverter drive controllers
Serial interface	DB9 connector	RS-232
Weight	2097-PGMR	1.3 kg (2.87 lb), with batteries

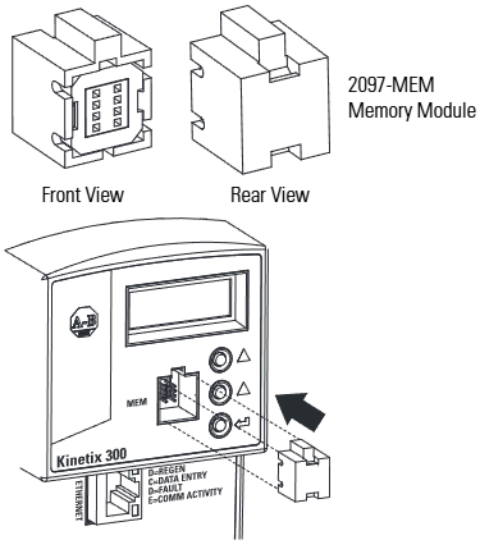
Dimensions are in mm (in.)



Memory Module 12-packs

The 2097-MEM memory modules use EEPROM technology in a plastic casing for protection and ruggedness to safe-guard your Kinetix 300 drive configuration.

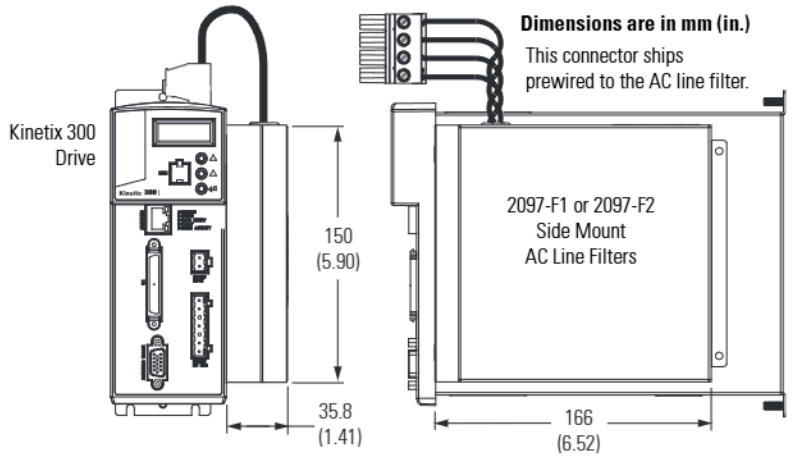
Use the 2097-MEM memory modules to backup your drive configuration for easy Automatic Device Replacement (ADR).



AC Line Filters

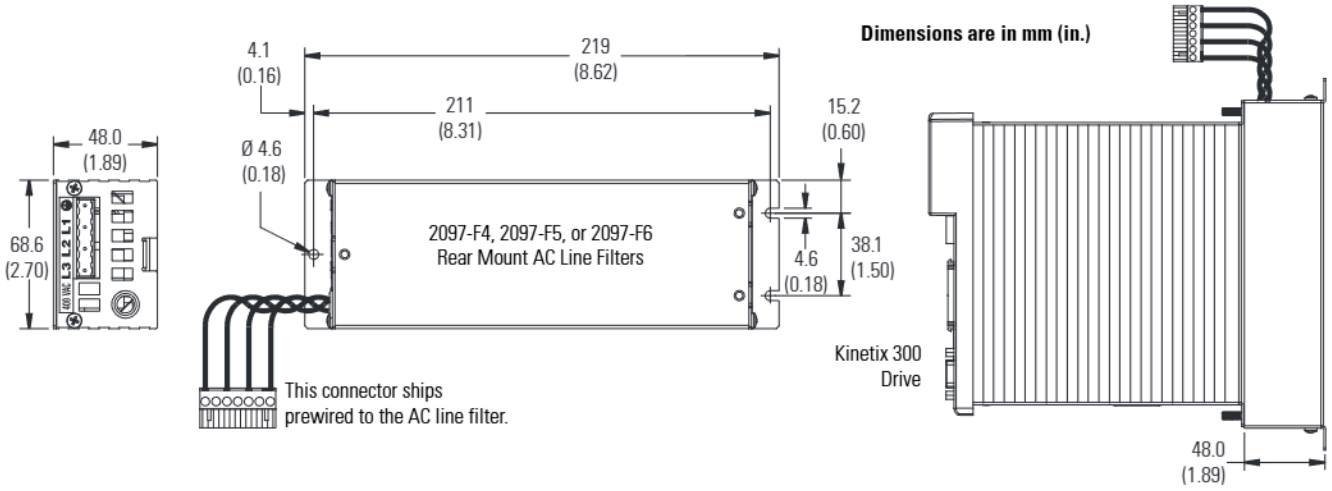
The Kinetix 300 drives were tested using the recommended line filters. Use of these filters is also needed to meet CE requirements. 2097-V32PR0, 2097-V32PR2, 2097-V32PR4 drives have integrated AC line filters.

AC Line Filter Dimensions



2097-F1 and 2097-F2 side-mount line filters add 35.8 mm (1.41 in.) to the width of your drive.

2097-F4, 2097-F5, and 2097-F6 rear-mount line filters add 48 mm (1.89 in.) to the depth of your drive.



AC Line Filter Specifications

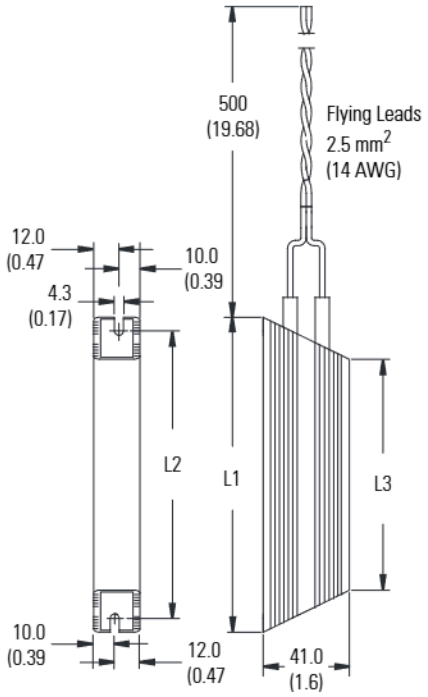
AC Line Filter Cat. No.	Specifications							Kinetix 300 Drive (1) Cat. No.
	Mount	Voltage	Phase	Current A @ 40 °C (104 °F)	Power Loss W	Leakage Current mA	Weight, approx. kg (lb)	
2097-F1	Side	120/240V AC 50/60 Hz	Single	24.0	5.2	9.0	0.6 (0.13)	2097-V33PR6
2097-F2		480V AC 50/60 Hz	Three	10.0	2.8	1.0		2097-V34PR6
2097-F4	Rear			4.40	1.2		0.8 (0.18)	2097-V33PR1 2097-V34PR3
2097-F5		240V AC 50/60 Hz		6.90	1.3			2097-V33PR3 2097-V34PR5
2097-F6				15.0	4.1			2097-V33PR5

(1) Use 2090-XXLF-TC116 line filter for 2097-V31PR0 and 2097-V31PR2 drives. Refer to the Kinetix Motion Control Selection Guide, publication GMC-SG001 for specifications.

Shunt Resistor Specifications

The Bulletin 2097 passive shunt resistor wires directly to the Kinetix 300 drive.

Shunt Resistor Dimensions



Dimensions are in mm (in.)

Shunt Resistor Cat. No.	L1	L2	L3
2097-R2	210 (8.3)	197 (7.7)	170 (6.7)
2097-R3	210 (8.3)	197 (7.7)	170 (6.7)
2097-R4	150 (5.9)	137 (5.4)	110 (4.3)
2097-R6	210 (8.3)	197 (7.7)	170 (6.7)
2097-R7	150 (5.9)	137 (5.4)	110 (4.3)

Shunt Resistor Power Specifications

Shunt Module Cat. No.	Specifications						Kinetix 300 Drive Cat. No.
	Resistance Ω	Continuous Power W	Peak Power kW	Peak Current A	D_Application, Max (1) %	Weight kg (lb)	
2097-R2	20	150	7.6	19.5	1.97	0.3 (0.7)	2097-V32PR4 2097-V33PR5
2097-R3	30		5.1	13.0	2.96		2097-V33PR6
2097-R4	40	80	3.8	9.8	2.10	0.2 (0.4)	2097-V31PR0 2097-V31PR2 2097-V32PR0 2097-V32PR2 2097-V33PR1 2097-V33PR3
2097-R6	75	150	7.9	10.3	1.90	0.3 (0.7)	2097-V34PR5 2097-V34PR6
2097-R7	150	80	4.0	5.1	2.02	0.2 (0.4)	2097-V34PR3

(1) D_Application is the application duty cycle in percent. For the intermittent regeneration applications, use D_Application = t/T, where t is the duration when regeneration is needed and T is the time interval between two regenerations. Both t and T must use the same time units, for example, seconds.

Kinetix 300 General System Specifications

This section contains environmental, weight, power dissipation, circuit breaker/fuse, transformer, and contactor specifications. Also included are maximum feedback cable length specifications and dimensions for mounting your Kinetix 300 drive.

Environmental Specifications

Attribute	Operational Range	Storage Range (nonoperating)
Ambient temperature	0…40 ° C (32…104 ° F)	-10…70 ° C (14…158 ° F)
Relative humidity	5…95% noncondensing	5…95% noncondensing
Altitude	De-rate by 1% per 300 m (1000 ft) above 1500 m (5000 ft)	3000 m (9842 ft) during transport
Vibration	5…2000 Hz @ 2.5 g peak, 0.015 mm (.0006 in.) maximum displacement.	
Shock	15 g, 11 ms half-sine pulse (3 pulses in each direction of 3 mutually perpendicular directions)	

Weight Specifications

Drive Cat. No.	Weight, approx. kg (lb)
2097-V31PR0	1.3 (2.9)
2097-V31PR2	1.5 (3.3)
2097-V32PR0	1.4 (3.1)
2097-V32PR2	1.7 (3.7)
2097-V32PR4	2.2 (4.9)
2097-V33PR1	1.3 (2.9)

Drive Cat. No.	Weight, approx. kg (lb)
2097-V33PR3	1.5 (3.3)
2097-V33PR5	2.0 (4.4)
2097-V33PR6	1.9 (4.2)
2097-V34PR3	1.5 (3.3)
2097-V34PR5	2.0 (4.4)
2097-V34PR6	1.8 (4.0)

Power Dissipation Specifications

Use this table to size an enclosure and calculate required ventilation for your Kinetix 300 drive system.

Drive Cat. No.	Loss, Max W
2097-V31PR0	28
2097-V31PR2	39
2097-V32PR0	28
2097-V32PR2	39
2097-V32PR4	67
2097-V33PR1	28

Drive Cat. No.	Loss, Max W
2097-V33PR3	39
2097-V33PR5	67
2097-V33PR6	117
2097-V34PR3	39
2097-V34PR5	58
2097-V34PR6	99

Circuit Breaker/Fuse Specifications

While circuit breakers offer some convenience, there are limitations for their use. Circuit breakers do not handle high current inrush as well as fuses.

Make sure the selected components are properly coordinated and meet acceptable codes including any requirements for branch circuit protection. Evaluation of the short-circuit available current is critical and must be kept below the short-circuit current rating of the circuit breaker.

Use class CC or T fast-acting current-limiting type fuses, 200,000 AIC, preferred. Use Bussman KTK-R, JJN, JJS or equivalent. Thermal-magnetic type breakers preferred. The following fuse examples and Allen-Bradley circuit breakers are recommended for use with Kinetix 300 drives.

Fuse and Circuit Breaker Specifications

Catalog Number	Mains VAC		
	Bussman Fuse	Allen Bradley Circuit Breaker (1)	
		Disconnect (2)	Magnetic Contactor (3)
2097-V31PR0	KTK-R-20 (20 A)	1492-SP3D300	140M-F8T-C32
2097-V31PR2			
2097-V32PR0			
2097-V32PR2			
2097-V32PR4	LPJ-45SP (45 A)	1492-SP3D400	140M-F8E-C45
2097-V33PR1	KTK-R-20 (20 A)	1492-SP3D300	140M-D8T-C20
2097-V33PR3			
2097-V33PR5			
2097-V33PR6	KTK-R-30 (30 A)	N/A	140U-F8T-C32
2097-V34PR3	KTK-R-20 (20 A)	1492-SP3D400	140M-F8T-C32
2097-V34PR5			
2097-V34PR6			

(1) When using Bulletin 1492 circuit protection devices, the maximum short circuit current available from the source is limited to 5000 A.

(2) Use fully-rated short-circuit protection circuit breaker for device branch circuit protection only when there is an upstream fully-rated breaker.

(3) Fully-rated breaker for overload current and short circuit rating.

Contactor Ratings

This table lists the recommended contactor ratings for Kinetix 300 Drive.

Kinetix 300 Drive (120/240V) Cat. No.	Contactor
2097-V31PR0	100-C30x10 (AC coil) 100-C30Zx10 (DC coil)
2097-V31PR2	
Kinetix 300 Drive (240V) Cat. No.	
2097-V32PR0	100-C30x10 (AC coil) 100-C30Zx10 (DC coil)
2097-V32PR2	
2097-V32PR4	100-C37x10 (AC coil) 100-C23Zx10 (DC coil)
2097-V33PR1	100-C23x10 (AC coil) 100-C23Zx10 (DC coil)
2097-V33PR3	
2097-V33PR5	
2097-V33PR6	100-C30x10 (AC coil) 100-C30x10 (DC coil)
Kinetix 300 Drive (480V) Cat. No.	
2097-V34PR3	100-C37x10 (AC coil) 100-C23Zx10 (DC coil)
2097-V34PR5	
2097-V34PR6	

Transformer Specifications for Control Input Power

Attribute	Value (460V system)
Input volt-amperes	750VA
Input voltage	460V AC
Output voltage	120…240V AC

Maximum Feedback Cable Lengths

Although motor feedback cables are available in standard lengths up to 90 m (295.3 ft), the drive/motor/feedback combination may limit the maximum cable length.

MP-Series (Bulletin MPL, MPM, MPF, and MPS) Rotary Motors

MPL-A (230V) and MPL-B (460V) Motors		MPM-A (230V) and MPM-B (460V) Motors	MPF-A (230V) and MPF-B (460V) Motors	MPS-A (230V) and MPS-B (460V) Motors
Absolute High-resolution (1) m (ft)	**Incremental (2)** m (ft)	**Absolute High-resolution (3)** m (ft)	**Absolute High-resolution (4)** m (ft)	**Absolute High-resolution (5)** m (ft)
20 (65.6)	20 (65.6)	20 (65.6)	20 (65.6)	20 (65.6)

(1) Refers to MPL-A/B*xxxx*-S/M and MPL-A/B*xxxx*-E/V (single-turn or multi-turn) low-inertia motors with absolute high-resolution feedback.

(2) Refers to MPL-A/B*xxxx*-H low-inertia motors with 2000-line incremental feedback.

(3) Refers to MPM-A/B*xxxx*-S/M (single-turn or multi-turn) motors with absolute high-resolution feedback.

(4) Refers to MPF-A/B*xxxx*-S/M (single-turn or multi-turn) motors with absolute high-resolution feedback.

(5) Refers to MPS-A/B*xxxx*-S/M (single-turn or multi-turn) motors with absolute high-resolution feedback.

TL-Series (Bulletin TLY) Rotary Motors and (Bulletin TLAR) Electric Cylinders

TLY-A (230V) Motors		TLAR-A (230V) Electric Cylinders
Absolute High-resolution (1) m (ft)	**Incremental (2)** m (ft)	**Absolute High-resolution (3)** m (ft)
20 (65.6)	20 (65.6)	20 (65.6)

(1) Refers to TLY-A*xxxx*-B low-inertia motors with absolute high-resolution feedback.

(2) Refers to TLY-A*xxxx*-H low-inertia motors with incremental feedback.

(3) Refers to TLAR-A*xxxxxx*-B (multi-turn) electric cylinders with absolute 17-bit encoder, battery backed.

MP-Series (Bulletin MPAS) Integrated Linear Stages

MPAS-A (230V single-axis) and MPAS-B (460V single-axis) Linear Stages
Absolute High-resolution (1) m (ft)
20 (65.6)

(1) Refers to MPAS-A/B*xxxx*-V (multi-turn) ballscrew integrated linear stages with absolute high-resolution feedback.

MP-Series (Bulletin MPAR and MPAI) Electric Cylinders

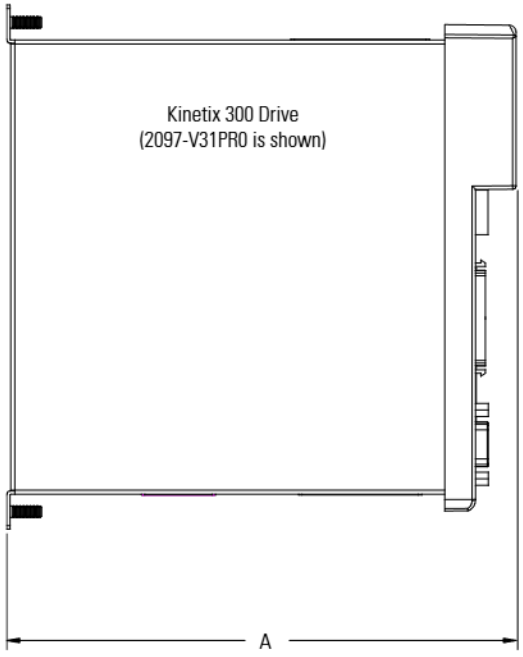
MPAR-A (230V) and MPAR-B (460V) Electric Cylinders	MPAI-A (230V) and MPAI-B (460V) Heavy Duty Electric Cylinders
Absolute High-resolution (1) m (ft)	**Absolute High-resolution (2)** m (ft)
20 (65.6)	20 (65.6)

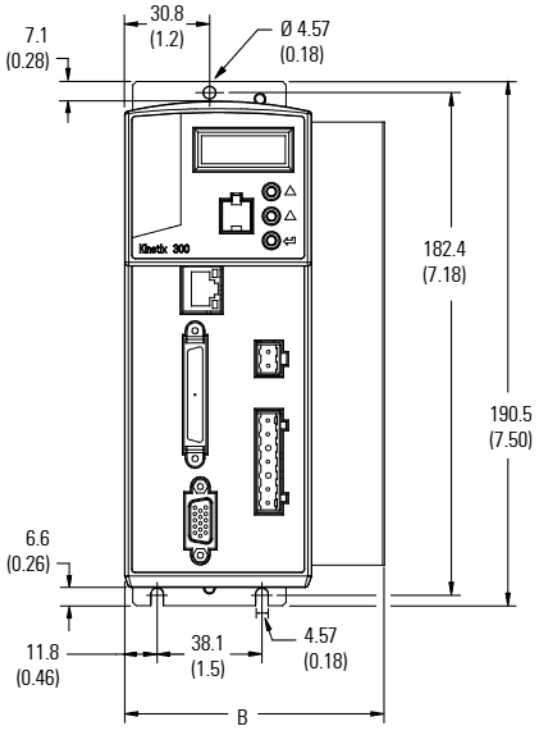
(1) Refers to MPAR-A/B*xxxxxx*-V/M (multi-turn) electric cylinders with absolute high-resolution feedback.

(2) Refers to MPAI-A/B*xxxxx*M3 (17-bit multi-turn) heavy duty electric cylinders with absolute high-resolution feedback.

Kinetix 300 Drive Dimensions

Dimensions are in mm (in.)



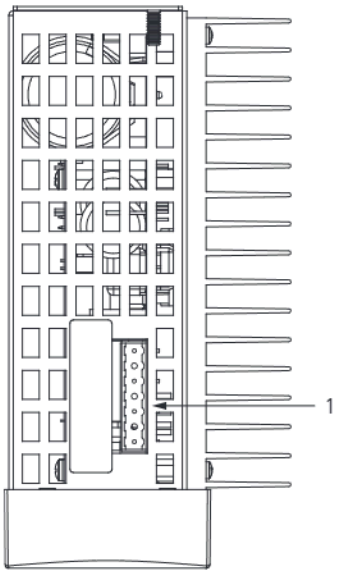


Cat. No.	A mm (in.)	B mm (in.)
2097-V31PR0	185.1 (7.29)	68.0 (2.68)
2097-V31PR2	185.1 (7.29)	68.5 (2.70)
2097-V32PR0	229.6 (9.04)	68.0 (2.68)
2097-V32PR2	229.6 (9.04)	68.5 (2.70)
2097-V32PR4	229.6 (9.04)	86.8 (3.42)
2097-V33PR1	185.1 (7.29)	68.0 (2.68)

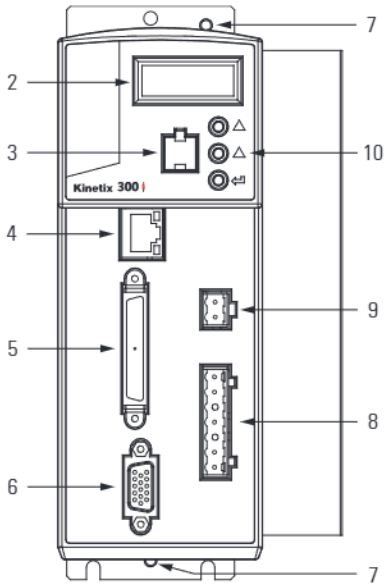
Cat. No.	A mm (in.)	B mm (in.)
2097-V33PR3	185.1 (7.29)	68.5 (2.70)
2097-V33PR5	185.1 (7.29)	94.4 (3.72)
2097-V33PR6	229.6 (9.04)	68.0 (2.68)
2097-V34PR3	185.1 (7.29)	68.5 (2.70)
2097-V34PR5	185.1 (7.29)	94.4 (3.72)
2097-V34PR6	229.6 (9.04)	68.0 (2.68)

Kinetix 300 Connector and Indicator Locations

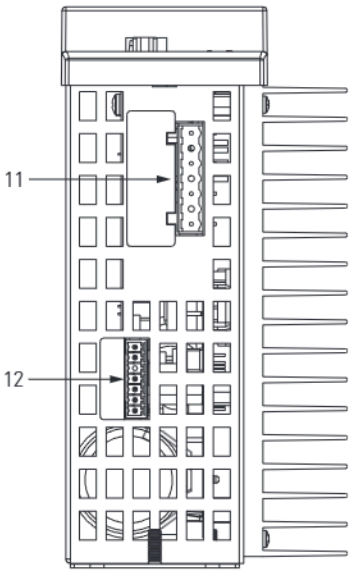
This section illustrates connector and status indicator locations for the Kinetix 300 drives.



Kinetix 300 Drive, Top View
(2097-V33PR5 drive is shown)



Kinetix 300 Drive, Front View
(2097-V33PR5 drive is shown)



Kinetix 300 Drive, Bottom View
(2097-V33PR5 drive is shown)

Item	Description
1	Mains (IPD) connector
2	Status and diagnostic display
3	Memory module socket
4	Ethernet communication port (Port 1)
5	I/O (IOD) connector
6	Motor feedback (MF) connector (1)

Item	Description
7	Ground lug
8	Shunt resistor and DC bus (BC) connector
9	Back-up power (BP) connector
10	Display control push buttons (3)
11	Motor power (MP) connector
12	Safe torque-off (STO) connector

(1) The MF (15-pin) connector requires the 2090-K2CK-D15M low-profile connector kit.

Kinetix 300 Drive Catalog Numbers

Catalog numbers consist of various characters, each of which identifies a specific version or option for that component. Use the catalog numbering table chart below to understand the configuration of your drive. For questions regarding product availability, contact your Allen-Bradley distributor.

2097 - V3*x* PR*x*

Drive Power Rating
PR0 = 400 W
PR1 = 500 W
PR2 = 800 W
PR3 = 1.0 kW
PR4 = 1.7 kW
PR5 = 2.0 kW
PR6 = 3.0 kW

Drive Input Voltage
V31 = 120/240V AC, single-phase
V32 = 240V AC, single-phase with integrated AC (EMC) line filter
V33 = 120/240V AC, single-phase or three-phase
V34 = 480V AC, three-phase

Bulletin Number

Kinetix 300 Drive/Motor System Combinations

These tables provide the motor cable catalog numbers for Kinetix 300 drive/motor and actuator combinations. Motor brake wires are in the power cable, so a separate brake cable is not required.

Drive/motor combinations specified are for optimum motor/actuator performance. Refer to Motion Analyzer software for additional information on ambients, line conditions, and valid combinations not shown.

MP-Series (Bulletin MPL) Low Inertia Motor/Drive Combinations

Motor Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPL-A/B3*xxx*-M/S…MPL-A/B45*xxx*-M/S	Multi-turn High-resolution Absolute or Single-turn High-resolution Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM7DF-CDAF*xx* (continuous-flex)
MPL-A/B15*xxx*-V/E MPL-A/B2*xxx*-V/E			2090-XXNFMF-S*xx* (standard) 2090-CFBM4DF-CDAF*xx* (continuous-flex)
MPL-A/B15*xxx*-H MPL-A/B2*xxx*-H	Incremental Feedback		

Motor Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPL-A1510V, MPL-A1520U, MPL-A1530U	2097-V33PR1	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)
MPL-A220T, MPL-A220T, MPL-A230P	2097-V33PR3		
MPL-A310F and MPL-A310P			2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPL-A320H, MPL-A320P, MPL-A330P, MPL-A420P	2097-V33PR5		
MPL-A4520P and MPL-A4540C			
MPL-A430P and MPL-A4520K	2097-V33PR6		

Motor Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPL-B1510V, MPL-B1520U, MPL-B1530U	2097-V34PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)
MPL-B220T, MPL-B230P	2097-V34PR3		
MPL-B220T	2097-V34PR5		
MPL-B310P	2097-V34PR3		2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPL-B320P	2097-V34PR5		
MPL-B4520P	2097-V34PR6		

MP-Series (Bulletin MPM) Medium Inertia Motor/Drive Combinations

Motor Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPM-A/B*xxxxx*-M/S	Multi-turn High-resolution Absolute or Single-turn High-resolution Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM7DF-CDAF*xx* (continuous-flex)

Motor Cat. No. (230V)	AM (460V) Power Module	Cable Type	Power Cable Cat. No.
MPM-A1151M	2097-V33PR5	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPM-A1152F	2097-V33PR6		

Motor Cat. No. (460V)	AM (460V) Power Module	Cable Type	Power Cable Cat. No.
MPM-B1151F	2097-V34PR5	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPM-B1152C			

MP-Series (Bulletin MPF) Food Grade Motor/Drive Combinations

Motor Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPF-A/B*xxxx*-M/S	Multi-turn High Resolution Absolute or Single-turn High Resolution Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM7DF-CDAF*xx* (continuous-flex)

Motor Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPF-A310P	2097-V33PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPF-A320H and MPF-A320P	2097-V33PR5		
MPF-A430P	2097-V33PR6		

Motor Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPF-B310P	2097-V34PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPF-B320P	2097-V34PR5		
MPF-B330P			

MP-Series (Bulletin MPS) Stainless Steel Motor/Drive Combinations

Motor Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPS-A/B*xxxx*-M/S	Multi-turn High Resolution Absolute or Single-turn High Resolution Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM4DF-CDAF*xx* (continuous-flex)

Motor Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPS-A330P	2097-V33PR5	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)
MPS-A4540F	2097-V33PR6		2090-XXNPMF-14S*xx* (standard) 2090-CP*x*M4DF-14AF*xx* (continuous-flex)

Motor Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPS-B330P	2097-V34PR5	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)
MPS-B4540F	2097-V34PR6		

TL-Series (Bulletin TLY) Low Inertia Motor/Drive Combinations

Motor Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
TLY-A*xxxx*-B	Multi-turn High Resolution Absolute Encoder Feedback	Feedback	2090-CFBM6DF-CBAA*xx* (flying lead) or 2090-CFBM6DD-CCAA*xx* (premolded connector)
TLY-A*xxxx*-H	Incremental		

Motor Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
TLY-A110T, TLY-A120T, and TLY-A130T	2097-V33PR1	Power	2090-CPBM6DF-16AA*xx* (power and brake) 2090-CPWM6DF-16AA*xx* (power without brake)
TLY-A220T and TLY-A230T	2097-V33PR3		
TLY-A2530P and TLY-A2540P	2097-V33PR5		

MP-Series Integrated Linear Stage/Drive Combinations

Actuator Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPAS-A/B*xxxxx*-V	Multi-turn High Resolution Absolute Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM4DF-CDAF*xx* (continuous-flex)

Actuator Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAS-A*xxxx1*-V05S*x*A MPAS-A*xxxx2*-V20S*x*A	2097-V33PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)

Actuator Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAS-B*xxxx1*-V05S*x*A MPAS-B*xxxx2*-V20S*x*A	2097-V34PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M4DF-16AF*xx* (continuous-flex)

MP-Series Electric Cylinder/Drive Combinations

Actuator Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPAR-A/B*xxxxx*	Multi-turn High Resolution Absolute Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM7DF-CDAF*xx* (continuous-flex)

Actuator Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAR-A1*xxx*B and MPAR-A1*xxx*E	2097-V33PR1	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPAR-A2*xxx*C and MPAR-A2*xxx*F			
MPAR-A3*xxx*E and MPAR-A3*xxx*H	2097-V33PR5		

Actuator Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAR-B1*xxx*B and MPAR-B1*xxx*E	2097-V34PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPAR-B2*xxx*C and MPAR-B2*xxx*F			
MPAR-B3*xxx*E and MPAR-B3*xxx*H			

TL-Series Electric Cylinder/Drive Combinations

Actuator Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
TLAR-A*xxxxx*	Multi-turn High Resolution Absolute Encoder Feedback	Feedback	2090-CFBM6DF-CBAA*xx* (flying-lead) or 2090-CFBM6DD-CCAA*xx* (premolded connector) standard

Actuator Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
TLAR-A1*xxx*B and TLAR-A1*xxx*E	2097-V33PR1	Power	2090-CPBM6DF-16AA*xx* (power and brake) standard 2090-CPWM6DF-16AA*xx* (power without brake) standard
TLAR-A2*xxx*C and TLAR-A2*xxx*F			
TLAR-A3*xxx*E and TLAR-A3*xxx*H	2097-V33PR5		

MP-Series Heavy Duty Electric Cylinder/Drive Combinations

Actuator Cat. No.	Feedback Type	Cable Type	Flying-lead Cable Cat. No.
MPAI-A/B*xxxx*	Multi-turn High Resolution Absolute Encoder Feedback	Feedback	2090-XXNFMF-S*xx* (standard) 2090-CFBM7DF-CDAF*xx* (continuous-flex)

Actuator Cat. No. (230V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAI-A3*xxx*C	2097-V33PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPAI-A3*xxx*E			
MPAI-A4*xxx*C	2097-V33PR5		
MPAI-A4*xxx*E			

Actuator Cat. No. (460V)	Kinetix 300 Drive Cat. No.	Cable Type	Flying-lead Cable Cat. No.
MPAI-B3*xxx*C	2097-V34PR3	Power	2090-XXNPMF-16S*xx* (standard) 2090-CP*x*M7DF-16AF*xx* (continuous-flex)
MPAI-B3*xxx*E			
MPAI-B4*xxx*C	2097-V34PR5		
MPAI-B4*xxx*E			

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