

Kinetix 300 and Kinetix 350 EtherNet/IP Servo Drives



**Kinetix 300
Servo Drive**

The Kinetix 300 EtherNet/IP indexing drive provides a cost-effective single-axis solution for low axis-count motion control applications. By 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.



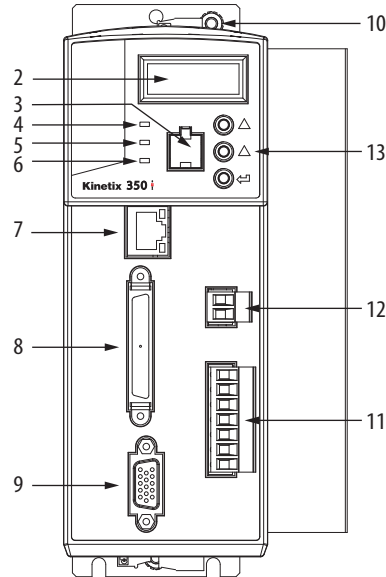
**Kinetix 350
Servo Drive**

The Kinetix 350 single-axis EtherNet/IP servo drive was developed to provide scalability for your motion control system by simplifying integration of the entire control solution on one network. The Kinetix 350 servo drive is designed to connect and operate with the ControlLogix controllers supporting Integrated Motion on the EtherNet/IP network. Combined as a system, they can provide you a cost-effective motion solution that delivers the high performance and scalability you need to compete in today's industry. With its compact design, the Kinetix 350 requires less panel space and can be connected easily. In addition, you can reduce installation and commissioning time by reusing code across integrated products throughout your entire machine portfolio.

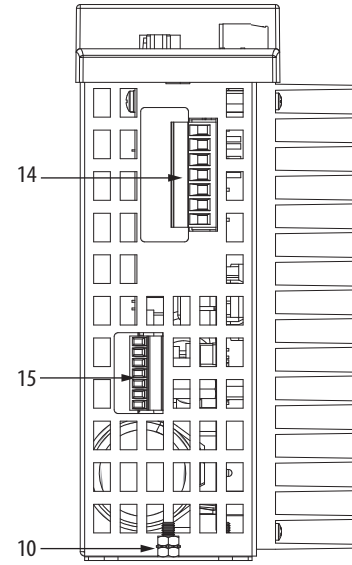
Kinetix 300 and Kinetix 350 Drive Features and Indicators



Kinetix 300/350 Drive, Top View
(2097-V33PR5-xx drive is shown)



Kinetix 300/350 Drive, Front View
(2097-V33PR5-LM drive is shown)



Kinetix 300/350 Drive, Bottom View
(2097-V33PR5-xx drive is shown)

Item	Description
1	Mains (IPD) connector
2	Status and diagnostic display
3	Memory module socket
4	Network status indicator ⁽¹⁾
5	Module status indicator ⁽¹⁾
6	Axis status indicator ⁽¹⁾
7	Ethernet communication port (Port 1)
8	I/O (IOD) connector

(1) Status indicators apply to only Kinetix 350 servo drives.

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

Item	Description
9	Motor feedback (MF) connector ⁽²⁾
10	Ground lug
11	Shunt resistor and DC bus (BC) connector
12	Back-up power (BP) connector
13	Display control push buttons (3)
14	Motor power (MP) connector
15	Safe Torque Off (STO) connector

Technical Specifications - Kinetix 300 and Kinetix 350 Servo Drives

The 2097-V31PRx-xx drives with 120V input are capable of driving 240V motors at full speed.

Kinetix 300/350 Drive (single-phase) Power Specifications

Attribute	2097-V31PR0 2097-V31PR0-LM	2097-V31PR2 2097-V31PR2-LM	2097-V32PR0 2097-V32PR0-LM	2097-V32PR2 2097-V32PR2-LM	2097-V32PR4 2097-V32PR4-LM
AC input voltage	70...132V rms single-phase (120V nom) voltage-doubler mode 80...264V rms single-phase (120/240V nom)		80...264V rms single-phase (240V nom)		
AC input frequency	48...62 Hz				
Main AC input current ⁽¹⁾ Nom (rms) 120V input (voltage doubler) Max inrush (0-pk) 120V input	9.70 A 1.15 A	15.0 A 1.15 A			
Nom (rms) 120/240V input Max inrush (0-pk) 240V input	5.0 A 1.1 A	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 back-up input voltage	20...26V DC				
Control power back-up 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 ⁽³⁾ @ 240V nom or 120V (voltage-doubler) mode	0.40 kW ⁽⁴⁾	0.80 kW ⁽⁴⁾	0.40 kW	0.80 kW	1.70 kW
Shunt on	390V DC				
Shunt off	375V DC				
Overvoltage	430V DC				
Short-circuit current rating	100,000 A (rms) symmetrical				

(1) Kinetix 300/350 drive modules are limited to 1 AC mains power cycling per every 2 minutes.

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

(3) Nominal continuous power output (kW) applies to 240V AC drives. Value is approximately one-half of this kW rating when using 120V AC.

(4) The 120V voltage-doubler mode applies to only the 2097-V31PRx-xx drives.

Kinetix 300/350 Drive (single-phase and three-phase) Power Specifications

Attribute	2097-V33PR1 2097-V33PR1-LM	2097-V33PR3 2097-V33PR3-LM	2097-V33PR5 2097-V33PR5-LM	2097-V33PR6 2097-V33PR6-LM
AC input voltage	80...132V rms single-phase (120V nom) 80...264V rms single-phase (240V nom) 80...264V rms three-phase (240V nom)			
AC input frequency	48...62 Hz			
Main AC input current ⁽¹⁾ Nom (rms) 120/240V input, single-phase Max inrush (0-pk) 120/240V input	5.0 A 68.0 A	8.6 A 1.15 A	15.0 A 1.15 A	24.0 A 5.65 A
Nom (rms) 240V input, three-phase Max inrush (0-pk) 240V input	3.0 A 136 A	5.0A 2.3 A	8.7A 2.3 A	13.9 A 11.3 A
Integrated AC line filter	No	No	No	No
Control power back-up input voltage	20...26V DC			
Control power back-up 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 ⁽³⁾ @ 240V nom	0.50 kW	1.00 kW	2.00 kW	3.00 kW
Shunt on	390V DC			
Shunt off	375V DC			
Overvoltage	430V DC			
Short-circuit current rating	100,000 A (rms) symmetrical			

(1) Kinetix 300/350 drive modules are limited to 1 AC mains power cycling per every 2 minutes.

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

(3) Nominal continuous power output (kW) applies to 240V AC drives. Value is approximately one-half of this kW rating when using 120V AC.

Kinetix 300/350 Drive (three-phase) Power Specifications

Attribute	2097-V34PR3 2097-V34PR3-LM	2097-V34PR5 2097-V34PR5-LM	2097-V34PR6 2097-V34PR6-LM
AC input voltage	320...528V rms three-phase (480V nom)		
AC input frequency	48...62 Hz		
Main AC input current ⁽¹⁾ Nom (rms) Max inrush (0-pk)	2.7 A 4.5 A	5.5 A 4.5 A	7.9 A 22.6 A
Integrated AC line filter	No	No	No
Control power back-up input voltage	20...26V DC		
Control power back-up 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 @ 480V nom	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 300/350 drive modules are limited to 1 AC mains power cycling per every 2 minutes.

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

Circuit Breaker/Fuse Specifications

Kinetix 300 and Kinetix 350 servo drives use internal solid-state motor short-circuit protection and, when protected by suitable branch circuit protection, are rated for use on a circuit capable of delivering up to 100,000 A (fuses) and 65,000 A (circuit breakers). These fuses and Allen-Bradley circuit breakers are recommended for use with 2097-VxxPRx-xx drives.

Input Power UL Circuit-protection Specifications

Kinetix 300 and Kinetix 350 Drives			UL Applications		
Drive Cat. No.	Drive Voltage	Phase	Fuses (Bussmann) Cat. No.	Miniature CB ⁽¹⁾ Cat. No.	Motor Protection CB, ^{(1) (2)} Self-protected CMC Cat. No.
2097-V31PR0-xx	120V	Single-phase (voltage doubler)	KTk-R-20 (20A)	1489-M1C200	140M-D8E-C20
	120/240V	Single-phase	KTk-R-10 (10A)	1489-M1C100	140M-C2E-C10
2097-V31PR2-xx	120V	Single-phase (voltage doubler)	KTk-R-30 (30A)	1489-M1C300	140M-F8E-C32
	120/240V	Single-phase	KTk-R-20 (20A)	1489-M1C200	140M-D8E-C20
2097-V32PR0-xx	240V	Single-phase	KTk-R-20 (20A)	1489-M1C150	140M-D8E-C16
2097-V32PR2-xx			KTk-R-20 (20A)	1489-M1C200	140M-D8E-C20
2097-V32PR4-xx			KTk-R-30 (30A)	1489-M1C300	140M-F8E-C32

Input Power UL Circuit-protection Specifications (continued)

Kinetix 300 and Kinetix 350 Drives			UL Applications		
Drive Cat. No.	Drive Voltage	Phase	Fuses (Bussmann) Cat. No.	Miniature CB ⁽¹⁾ Cat. No.	Motor Protection CB, ^{(1) (2)} Self-protected CMC Cat. No.
2097-V33PR1-xx	120/240V	Single-phase	KTk-R-20 (20A)	1489-M1C200	140M-D8E-C20
	240V	Three-phase	KTk-R-15 (15A)	1489-M3C150	140M-D8E-C16
2097-V33PR3-xx	120/240V	Single-phase	KTk-R-20 (20A)	1489-M1C200	140M-D8E-C20
	240V	Three-phase	KTk-R-15 (15A)	1489-M3C150	140M-D8E-C16
2097-V33PR5-xx	120/240V	Single-phase	KTk-R-30 (30A)	1489-M1C300	140M-F8E-C32
	240V	Three-phase	KTk-R-20 (20A)	1489-M3C200	140M-D8E-C20
2097-V33PR6-xx	120/240V	Single-phase	LPJ-40SP (40A) Class J	N/A	140M-F8E-C32
	240V	Three-phase	KTk-R-30 (30A)	1489-M3C300	
2097-V34PR3-xx	480V	Three-phase	KTk-R-10 (10A)	1489-M3C100	140M-C2E-C10
2097-V34PR5-xx			KTk-R-10 (10A)	1489-M3C100	140M-C2E-C10
2097-V34PR6-xx			KTk-R-20 (20A)	1489-M3C200	140M-D8E-C20

(1) Bulletin 1492 and 1489 circuit protection devices have lower short-circuit current ratings than Bulletin 140M devices.

Refer to <http://ab.rockwellautomation.com/allenbradley/productdirectory.page?> for product literature with specific short-circuit ratings.

(2) For UL applications, Bulletin 140M devices are applied as self-protected combination motor controllers.

Input Power IEC (non-UL) Circuit-protection Specifications

Kinetix 300 and Kinetix 350 Drives			IEC (non-UL) Applications		
Drive Cat. No.	Drive Voltage	Phase	Miniature CB ⁽¹⁾ Cat. No.		Motor Protection CB ⁽¹⁾ Cat. No.
2097-V31PR0-xx	120V	Single-phase (voltage doubler)	1489-M1C200	1492-SPM1D200	140M-D8E-C20
	120/240V	Single-phase	1489-M1C100	1492-SPM1D100	140M-C2E-C10
2097-V31PR2-xx	120V	Single-phase (voltage doubler)	1489-M1C300	1492-SPM1D300	140M-F8E-C32
	120/240V	Single-phase	1489-M1C200	1492-SPM1D200	140M-D8E-C20
2097-V32PR0-xx	240V	Single-phase	1489-M1C150	1492-SPM1D150	140M-D8E-C16
2097-V32PR2-xx			1489-M1C200	1492-SPM1D200	140M-D8E-C20
2097-V32PR4-xx			1489-M1C300	1492-SPM1D320	140M-F8E-C32
2097-V33PR1-xx	120/240V	Single-phase	1489-M1C200	1492-SPM1D200	140M-D8E-C20
	240V	Three-phase	1489-M3C150	1492-SPM3D150	140M-D8E-C16
2097-V33PR3-xx	120/240V	Single-phase	1489-M1C200	1492-SPM1D200	140M-D8E-C20
	240V	Three-phase	1489-M3C150	1492-SPM3D150	140M-D8E-C16
2097-V33PR5-xx	120/240V	Single-phase	1489-M1C300	1492-SPM1D300	140M-F8E-C32
	240V	Three-phase	1489-M3C200	1492-SPM3D200	140M-D8E-C20
2097-V33PR6-xx	120/240V	Single-phase	N/A	N/A	140M-F8E-C32
	240V	Three-phase	1489-M3C300	1492-SPM3D300	
2097-V34PR3-xx	480V	Three-phase	1489-M3C100	1492-SPM3D100	140M-C2E-C10
2097-V34PR5-xx			1489-M3C100	1492-SPM3D100	140M-C2E-C10
2097-V34PR6-xx			1489-M3C200	1492-SPM3D200	140M-D8E-C20

*Contactor Ratings***Kinetix 300/350 Drives (120/240V)**

Drive Cat. No.	Drive Voltage	AC Coil Contactor	DC Coil Contactor
2097-V31PR0-xx	120V	100-C23x10	100-C23Zx10
	240V	100-C12x10	100-C12Zx10
2097-V31PR2-xx	120V	100-C30x10	100-C30Zx10
	240V	100-C23x10	100-C23Zx10

Kinetix 300/350 Drives (240V)

Drive Cat. No.	Drive Voltage	AC Coil Contactor	DC Coil Contactor
2097-V32PR0-xx	240V	100-C23x10	100-C23Zx10
2097-V32PR2-xx	240V	100-C23x10	100-C23Zx10
2097-V32PR4-xx	240V	100-C30x10	100-C30Zx10
2097-V33PR1-xx	120V	100-C23x10	100-C23Zx10
	240V	100-C16x10	100-C16Zx10
2097-V33PR3-xx	120V	100-C23x10	100-C23Zx10
	240V	100-C16x10	100-C16Zx10
2097-V33PR5-xx	120V	100-C30x10	100-C30Zx10
	240V	100-C23x10	100-C23Zx10
2097-V33PR6-xx	120V	N/A	N/A
	240V	100-C30x10	100-C30Zx10

Kinetix 300/350 Drives (480V)

Drive Cat. No.	Drive Voltage	AC Coil Contactor	DC Coil Contactor
2097-V34PR3-xx	480V	100-C12x10	100-C12Zx10
2097-V34PR5-xx		100-C12x10	100-C12Zx10
2097-V34PR6-xx		100-C23x10	100-C23Zx10

Transformer Specifications for Control Input Power

Attribute	Value (400V-class system)
Input volt-amperes	750VA
Input voltage	460V AC
Output voltage	120...240V AC

Power Dissipation Specifications

Use this table to size an enclosure and calculate required ventilation for your Kinetix 300/350 drive system.

Drive Cat. No.	Loss, max W
2097-V31PRO-xx	28
2097-V31PR2-xx	39
2097-V32PRO-xx	28
2097-V32PR2-xx	39
2097-V32PR4-xx	67
2097-V33PR1-xx	28

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

Weight Specifications

Drive Cat. No.	Weight, approx kg (lb)
2097-V31PRO-xx	1.3 (2.9)
2097-V31PR2-xx	1.5 (3.3)
2097-V32PRO-xx	1.4 (3.1)
2097-V32PR2-xx	1.7 (3.7)
2097-V32PR4-xx	2.2 (4.9)
2097-V33PR1-xx	1.3 (2.9)

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

Maximum Feedback Cable Lengths

Although motor power and feedback cables are available in standard lengths up to 90 m (295.3 ft), Kinetix 300/350 drive maximum feedback cable length is 20 m (65.6 ft). These tables assume the use of recommended cables as shown in the Kinetix Motion Accessories Technical Data, publication [KNX-TD004](#).

Cable Lengths for Compatible Rotary Motors

Motor Cat. No.	Absolute High-resolution (5V) Encoder m (ft)	Absolute High-resolution (9V) Encoder m (ft)	Incremental/TTL (5V) Encoder m (ft)	Absolute High-resolution (5V) 17-bit Encoder m (ft)
MPL-A3xxx... MPL-A5xxx-S/M ⁽¹⁾	20 (65.6)			
MPL-A15xxx... MPL-A2xxx-E/V	20 (65.6)			
MPL-B3xxx... MPL-B9xxx-S/M		20 (65.6)		
MPL-B15xxx... MPL-B2xxx-E/V		20 (65.6)		
MPL-A/B15xxx... MPL-A/B45xxx-H			20 (65.6)	
MPM-Axxxx-S/M	20 (65.6)			
MPM-Bxxxx-S/M		20 (65.6)		
MPF-Axxxx-S/M ⁽¹⁾	20 (65.6)			

Cable Lengths for Compatible Rotary Motors (continued)

Motor Cat. No.	Absolute High-resolution (5V) Encoder m (ft)	Absolute High-resolution (9V) Encoder m (ft)	Incremental/TTL (5V) Encoder m (ft)	Absolute High-resolution (5V) 17-bit Encoder m (ft)
MPF-Bxxxx-S/M		20 (65.6)		
MPS-Axxxx-S/M	20 (65.6)			
MPS-Bxxxx-S/M		20 (65.6)		
TLY-Axxxx-B				20 (65.6)
TLY-Axxxx-H			20 (65.6)	

(1) MPL-A5xxx and MPF-A5xxx motor encoders are rated for 9V, the remaining Bulletin MPL and MPF (200V-class) motor encoders are rated for 5V.

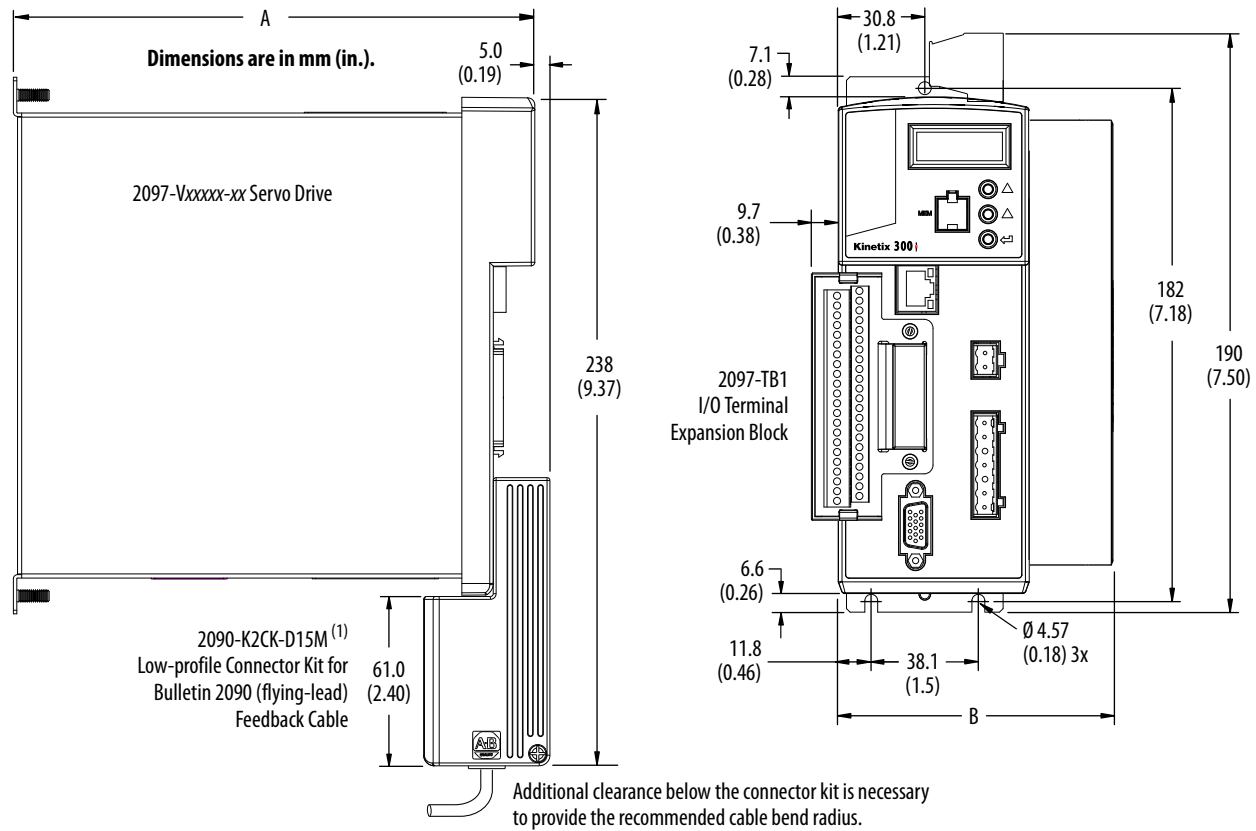
Cable Lengths for Compatible Linear Actuators

Actuator Cat. No.	Absolute High-resolution (5V) Encoder m (ft)	Absolute High-resolution (9V) Encoder m (ft)	Incremental/TTL (5V) Encoder m (ft)	Absolute High-resolution (5V) 17-bit Encoder m (ft)
MPMA-Axxxxx or MPAS-Axxxxx-V (ballscrew)	20 (65.6)			
MPMA-Axxxxx or MPAS-Axxxxx-A (direct drive)			20 (65.6)	
MPMA-Bxxxxx or MPAS-Bxxxxx-V (ballscrew)		20 (65.6)		
MPMA-Bxxxxx or MPAS-Bxxxxx-A (direct drive)			20 (65.6)	
MPAR-Axxxxx-V/M	20 (65.6)			
MPAR-Bxxxxx-V/M		20 (65.6)		
MPAI-AxxxxxM3	20 (65.6)			
MPAI-BxxxxxM3		20 (65.6)		
LDAT-Sxxxxxx-xDx		20 (65.6)		
LDAT-Sxxxxxx-xBx			20 (65.6)	

Cable Lengths for Compatible Linear Motors

Motor Cat. No.	Absolute High-resolution (5V) Encoder m (ft)	Incremental/TTL (5V) Encoder m (ft)
LDC-Series or LDL-Series	20 (65.6)	20 (65.6)

Dimensions - Kinetix 300 and Kinetix 350 Servo Drives



(1) Use the LDAT-CONKIT-ABS connector kit with added circuitry for Kinetix 300 drives and LDAT-Series linear thrusters with absolute high-resolution encoders. Both kits have the same physical dimensions.

Kinetix 300/350 Drive Dimensions

Cat. No.	A mm (in.)	B mm (in.)
2097-V31PR0-xx	185 (7.29)	68.0 (2.68)
2097-V31PR2-xx	185 (7.29)	69.0 (2.70)
2097-V32PR0-xx	230 (9.04)	68.0 (2.68)
2097-V32PR2-xx	230 (9.04)	69.0 (2.70)
2097-V32PR4-xx	230 (9.04)	87.0 (3.42)
2097-V33PR1-xx	185 (7.29)	68.0 (2.68)

Cat. No.	A mm (in.)	B mm (in.)
2097-V33PR3-xx	185 (7.29)	69.0 (2.70)
2097-V33PR5-xx	185 (7.29)	94.0 (3.72)
2097-V33PR6-xx	230 (9.04)	68.0 (2.68)
2097-V34PR3-xx	185 (7.29)	69.0 (2.70)
2097-V34PR5-xx	185 (7.29)	94.0 (3.72)
2097-V34PR6-xx	230 (9.04)	68.0 (2.68)

Environmental Specifications - Kinetix 300 and Kinetix 350 Servo Drives

Attribute	Operational Range	Storage Range (nonoperating)
Temperature, ambient	0...40 °C (32...104 °F)	-10...+70 °C (14...158 °F)
Relative humidity	5...95% noncondensing	5...95% noncondensing
Altitude	Derate 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 (0.0006 in.) displacement, max	
Shock	15 g, 11 ms half-sine pulse (3 pulses in each direction of 3 mutually perpendicular directions)	

Certifications - Kinetix 300 and Kinetix 350 Servo Drives

Certification ⁽¹⁾ (when product is marked)	Standards
c-UL-us ⁽²⁾	UL Listed to U.S. and Canadian safety standards (UL 508 C File E59272). Solid-state motor overload protection provides dynamic fold-back of motor current when 110% of the motor rating is reached with a peak current limit based on the peak rating of the motor as investigated by UL to comply with UL 508C (UL File E59272).
CE	European Union 2004/108/EC EMC Directive compliant with IEC 61800-3:2004 + A1:2012: Adjustable Speed Electrical Power Drive Systems - Part 3; EMC Product Standard including specific test methods. European Union 2006/95/EC Low Voltage Directive compliant with: - IEC 61800-5-1:2007 - Adjustable speed electrical power drive systems. - IEC 50178:1997 - Electronic Equipment for use in Power Installations.
Functional Safety	TÜV certified for functional safety: up to Performance Level (PL) d, Category 3 according to ISO 13849; up to SIL CL2 according to IEC 61508, IEC 61800-5-2, and IEC 62061 when used as described in the Kinetix 300 EtherNet/IP Indexing Servo Drives User Manual, publication 2097-UM001 and the Kinetix 350 Single-axis EtherNet/IP Servo Drives User Manual, publication 2097-UM002 .
C-Tick	Australian Radiocommunications Act, compliant with: - Radiocommunications Act: 1992 - Radiocommunications (Electromagnetic Compatibility) Standard: 1998 - Radiocommunications (Compliance Labelling - Incidental Emissions) Notice: 1998 - AS/NZS CISPR 11: 2002 (Group 1, Class A)
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: - Article 58-2 of Radio Waves Act, Clause 3 - Registration number: KCC-REM-RAA-2097
ODVA	EtherNet/IP conformance tested (applies to Kinetix 350 servo drives).

(1) When product is marked, refer to publication [2097-CT001](#) for the Kinetix 300 and Kinetix 350 servo drives EU Declaration of Conformity certificate.

(2) UL has not evaluated the Safe Torque Off option in these products.

Accessories - Kinetix 300 and Kinetix 350 Servo Drives

Kinetix 300/350 drive accessories include the I/O terminal block, memory module programmer, memory modules, ABS connector kit, AC line filters, shunt resistors, and the encoder output module.

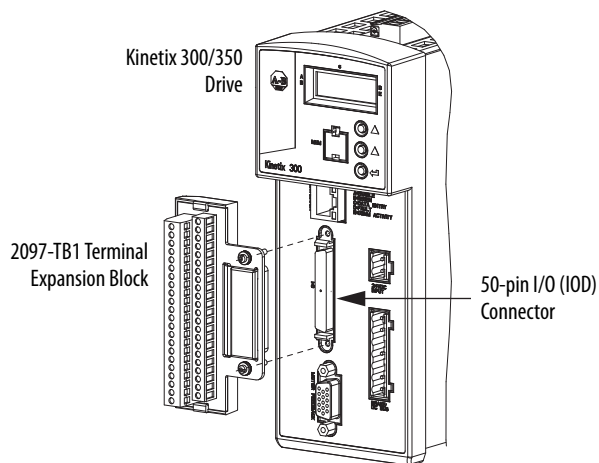
I/O Terminal Expansion Block

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.

2097-TB1 I/O Terminal Block Specifications

Attribute	Value
Wire size	1.5...0.2 mm ² (16...24 AWG)
Change in depth of drive ⁽¹⁾	11 mm (0.42 in.)
Change in width of drive ⁽¹⁾	10 mm (0.38 in.)

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

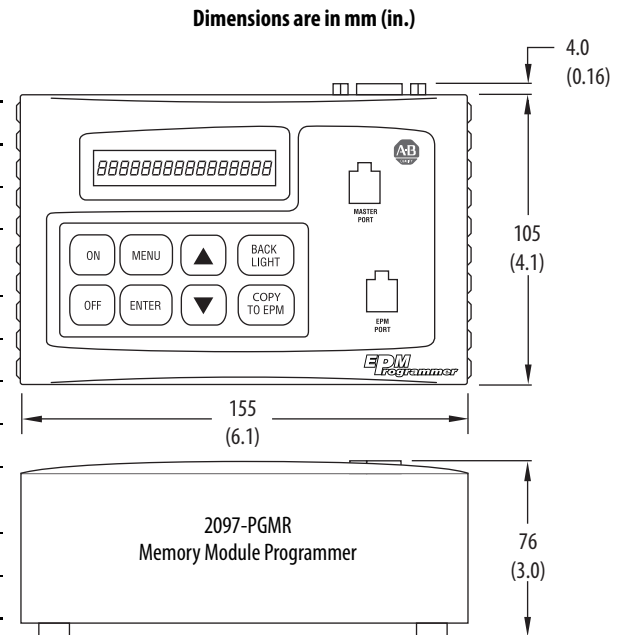


Memory Module Programmer

The 2097-PGMR memory module programmer is a hand-held device for duplicating your Kinetix 300/350 drive configuration to reduce down-time and troubleshooting.

2097-PGMR Memory Module Programmer Specifications

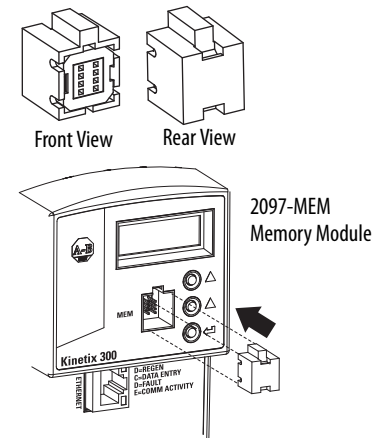
Attribute		Value
DC supply	Internal batteries	+ 6V DC, min 150 mA supply 4 mono-cells (type D), 1.5V DC each
	External power supply unit	+ 6V DC, 300 mA, stabilized
Display	Type	LCD
	Display format	Text
	Lines x characters	1 x 16
	Contrast setting	Via menu
Memory	Data memory	Up to 120 parameter files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



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 300/350 drive configuration.

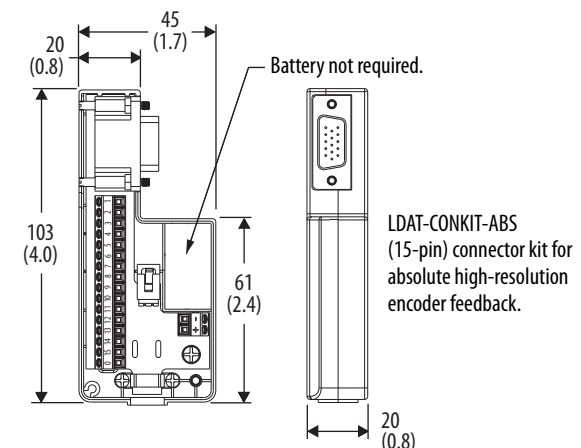
Use the 2097-MEM memory modules to back up your drive configuration for easy Automatic Device Replacement (ADR).



Connector Kit for Absolute Encoders

Use the LDAT-CONKIT-ABS connector kit on Kinetix 300 drives with LDAT-Series linear thrusters and absolute high-resolution encoders.

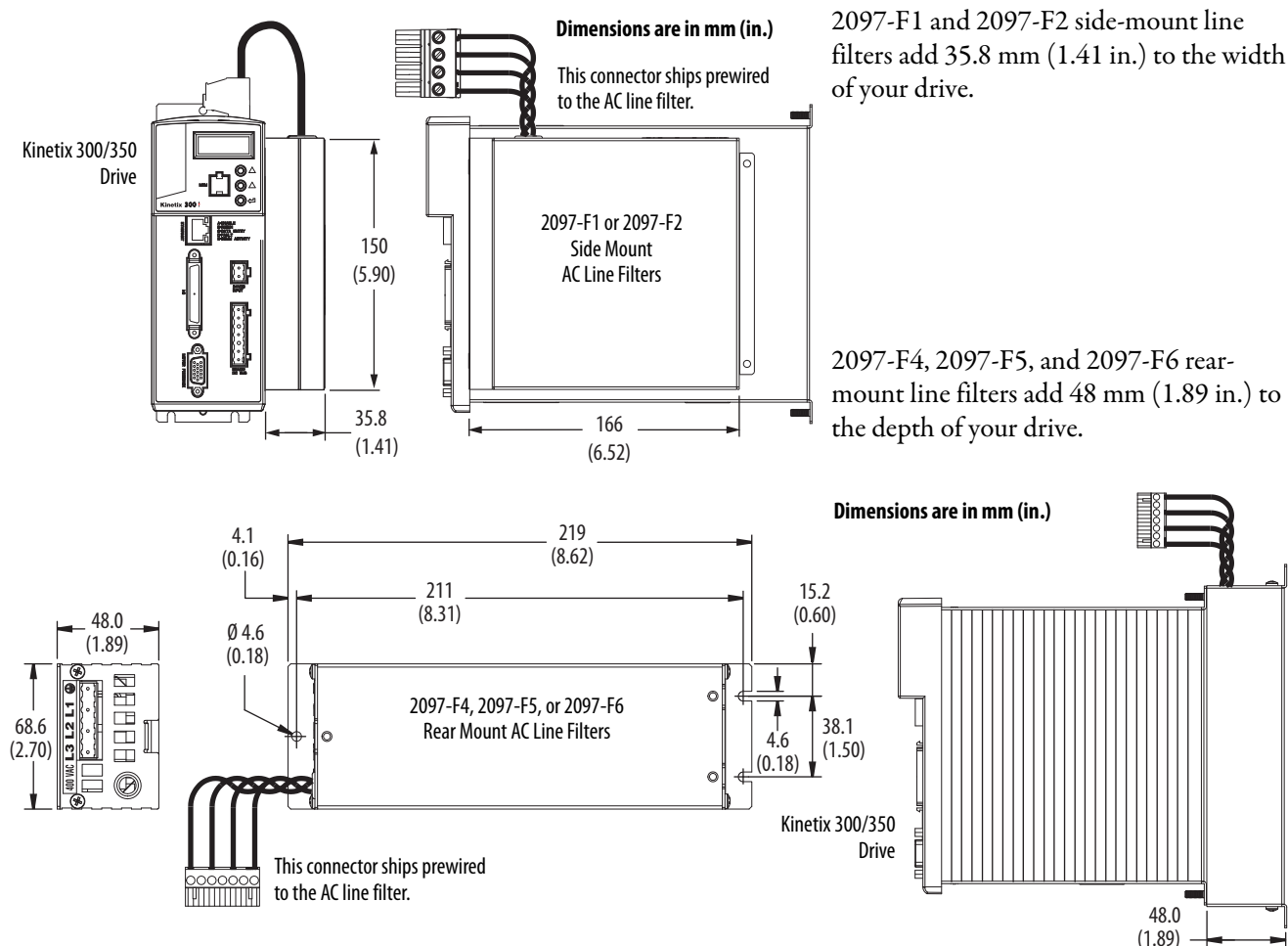
The LDAT-CONKIT-ABS connector kit has the same physical dimensions as catalog number 2090-K2CK-D15M, but contains added circuitry required for Kinetix 300 drives with absolute high-resolution encoders.



AC Line Filters

The Kinetix 300/350 drives were tested by using recommended line filters. Use of these filters is also needed to meet CE requirements. The 2097-V32PR0-xx, 2097-V32PR2-xx, and 2097-V32PR4-xx drives have integrated AC line filters.

AC Line Filter Dimensions



AC Line Filter Specifications

AC Line Filter Cat. No.	Mount	Voltage 50/60 Hz	Phase	Current A @ 40 °C (104 °F)	Power Loss W	Leakage Current mA	Weight, approx kg (lb)	Kinetix 300/350 ⁽²⁾ Drive Cat. No.
2097-F1	Side	120/240V AC	1	24.0	5.2	9.0	0.6 (0.13)	2097-V33PR6-xx ⁽³⁾
2097-F2		480V AC	3	10.0	2.8	2097-V34PR6-xx		
2097-F4 ⁽¹⁾	Rear	120/240V AC	1 or 3	4.40	1.2	1.0	0.8 (0.18)	2097-V33PR1-xx
		480V AC	3					6.90
2097-F5 ⁽¹⁾					1 or 3			
2097-F6 ⁽¹⁾		120/240V AC	1	15.0	4.1			2097-V33PR3-xx
								2097-V33PR5-xx

(1) This filter is rated for multiple voltage/phase line conditions.

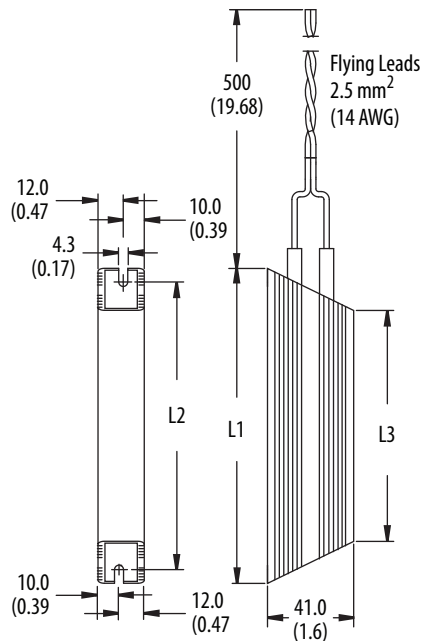
(2) Use 2090-XXLF-TC116 (single-phase) line filter for 2097-V31PR0-xx and 2097-V31PR2-xx drives. Use 2090-UXLF-336 line filter for 2097-V33PR5-xx (three-phase) drive applications. Refer to the Kinetix Motion Accessories Technical Data, publication [KNX-TD004](#) for more information.

(3) Use the 2097-F1 (single-phase) line filter only for 2097-V33PR6-xx (single-phase) drive operation.

Shunt Resistor

The Bulletin 2097 passive shunt resistor wires directly to the Kinetix 300/350 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.	Resistance W	Continuous Power W	Peak Power kW	Peak Current A	D_Application, max ⁽¹⁾ %	Weight kg (lb)	Kinetix 300/350 Drive Cat. No.
2097-R2	20	150	7.6	19.5	1.97	0.3 (0.7)	2097-V32PR4-xx 2097-V33PR5-xx
2097-R3	30		5.1	13.0	2.96		2097-V33PR6-xx
2097-R4	40	80	3.8	9.8	2.10	0.2 (0.4)	2097-V31PR0-xx 2097-V31PR2-xx 2097-V32PR0-xx 2097-V32PR2-xx 2097-V33PR1-xx 2097-V33PR3-xx
2097-R6	75	150	7.9	10.3	1.90	0.3 (0.7)	2097-V34PR5-xx 2097-V34PR6-xx
2097-R7	150	80	4.0	5.1	2.02	0.2 (0.4)	2097-V34PR3-xx

(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.

Encoder Output Module

The Allen-Bradley encoder output module (catalog number 2198-ABQE) is a DIN-rail mounted EtherNet/IP network-based standalone module capable of outputting encoder pulses to a customer-supplied peripheral device (cameras, for example, used in line-scan vision systems). The encoder output module supports real and virtual axes for systems using the integrated motion on EtherNet/IP network (Kinetix 350 drives). For more information, refer to [Encoder Output Module](#) on [page 26](#).