Summary of Changes

This manual contains new and updated information as indicated in the following table.

Topic	Page
Added the 2198-D*xxx*-ERS4 and 2198-S*xxx*-ERS4 catalog numbers. When the Kinetix 5700 inverter catalog number ends in -ERS*x*, for example 2198-D057-ERS*x*, the variable (x) indicates that the inverter (using this example) can be 2198-D057-ERS3 or 2198-D057-ERS4.	Throughout Kinetix 5700 Servo Drives
• Corrected the DC-bus power supply catalog number in the table. • Corrected the maximum amp rating in footnote 3.	9
Corrected the maximum feedback cable length for Heidenhain EnDat encoders.	14
Added the Kinetix 5700 Safe Monitor Functions Safety Reference Manual, publication 2198-RM001, to the servo drives certifications table.	21
Added 2198-ABQE encoder output module general specifications table.	27
Updated the link to EU Declaration of Conformity certificates for each drive family.	21, 47, 74, 93, 104, 113, 123, 141
Corrected the Kinetix 5700 AC line filter voltage rating specifications.	30
Corrected the 24V input power maximum current rating in the IMPORTANT statement.	32
Corrected the Kinetix 5500 AC line filter voltage rating specifications.	51
Added the 65,000 kA circuit-breaker specification to the Kinetix 300/350 Circuit Breaker/Fuse Specifications.	98
Moved the Ultra3000 Digital Servo Drive Specifications to the Ultra3000 Drive Systems Design Guide, publication GMC-RM008.	–

Kinetix 5700 Servo Drives

The Kinetix® 5700 drive family helps expand the value of integrated motion on EtherNet/IP™ to large, custom machine-builder applications. Drive modules connect and operate by using ControlLogix® controllers, GuardLogix® controllers, CompactLogix™ controllers, or Compact GuardLogix controllers.

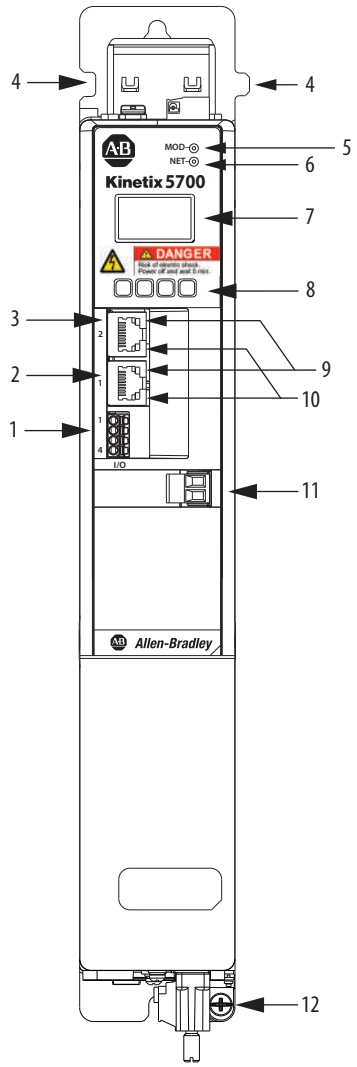
With the Logix Designer application as a single control engine, and one design environment – Studio 5000® – machine builders now have more flexibility to scale, design, and control to help meet their needs. Kinetix 5700 servo drives can help reduce commissioning time and improve machine performance. They offer the simplicity, power, and space savings you need to help get your machine up and running faster.

Kinetix 5700 servo drives are designed for machines with high axis-counts and high-power requirements. Single and dual-axis inverters are available with integrated (drive-based and controller-based) safety functions and hardwired (drive-based) safety functions.

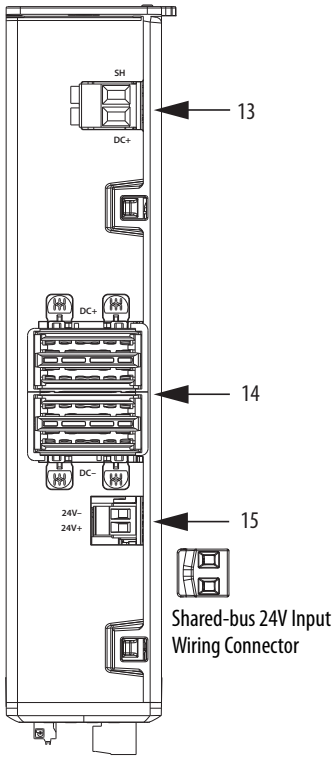
The iTRAK® power supply integrates the iTRAK system with the Kinetix 5700 drive family.

Kinetix 5700 Drive Features and Indicators

DC-bus Power Supply Features and Indicators

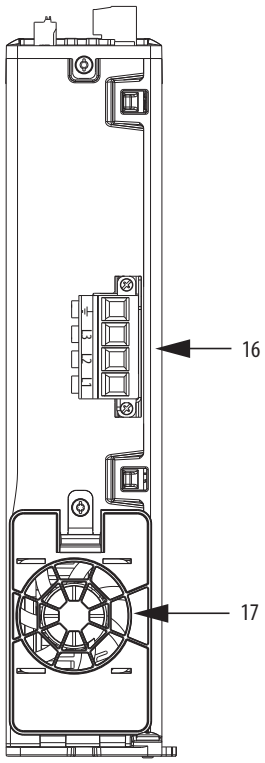


DC-bus Power Supply, Front View
(2198-P031 module is shown)



Shared-bus 24V Input
Wiring Connector

DC-bus Power Supply, Top View
(2198-P031 module is shown)



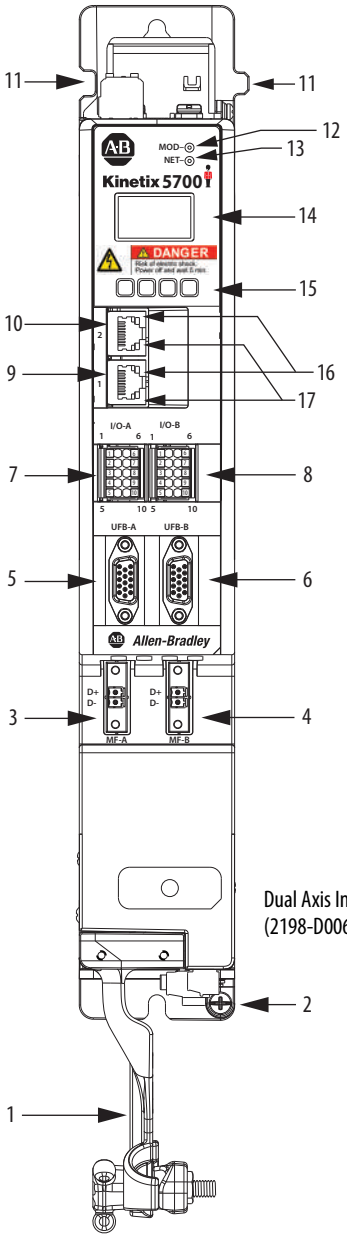
DC-bus Power Supply, Bottom View
(2198-P031 module is shown)

Item	Description
1	Digital inputs (IOD) connector
2	Ethernet (PORT1) RJ45 connector
3	Ethernet (PORT2) RJ45 connector
4	Zero-stack mounting tab/cutout
5	Module status indicator
6	Network status indicator

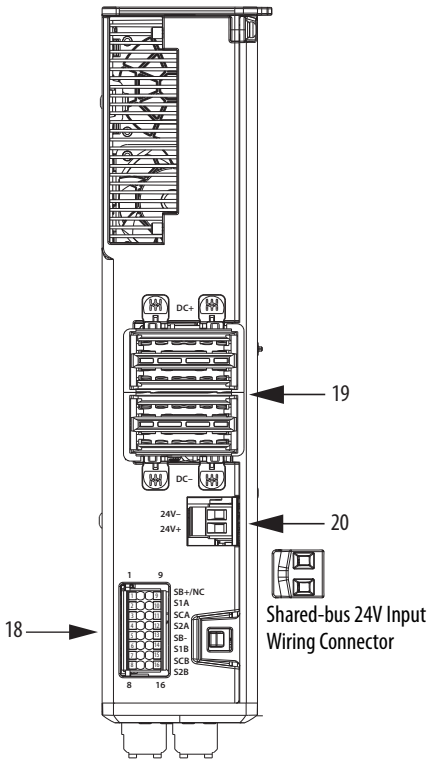
Item	Description
7	LCD display
8	Navigation pushbuttons
9	Link speed status indicators
10	Link/Activity status indicators
11	Contactor enable (EN) connector
12	Ground terminal

Item	Description
13	Shunt resistor (RC) connector
14	DC bus (DC) connector
15	24V control input power (CP) connector
16	AC Input power (IPD) connector
17	Cooling fan

Dual-axis Inverter Features and Indicators

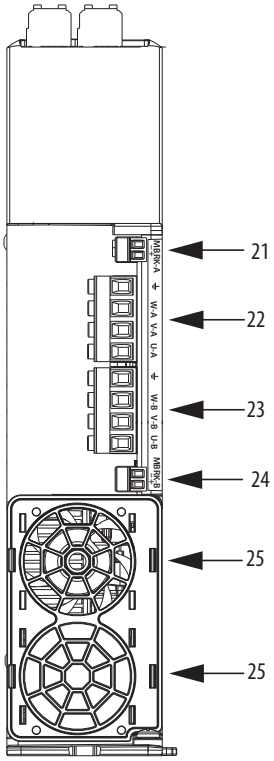


Dual Axis Inverter, Front View
(2198-D006-ERS3 module is shown)



Shared-bus 24V Input
Wiring Connector

Dual Axis Inverter, Top View
(2198-D006-ERS3 module is shown)



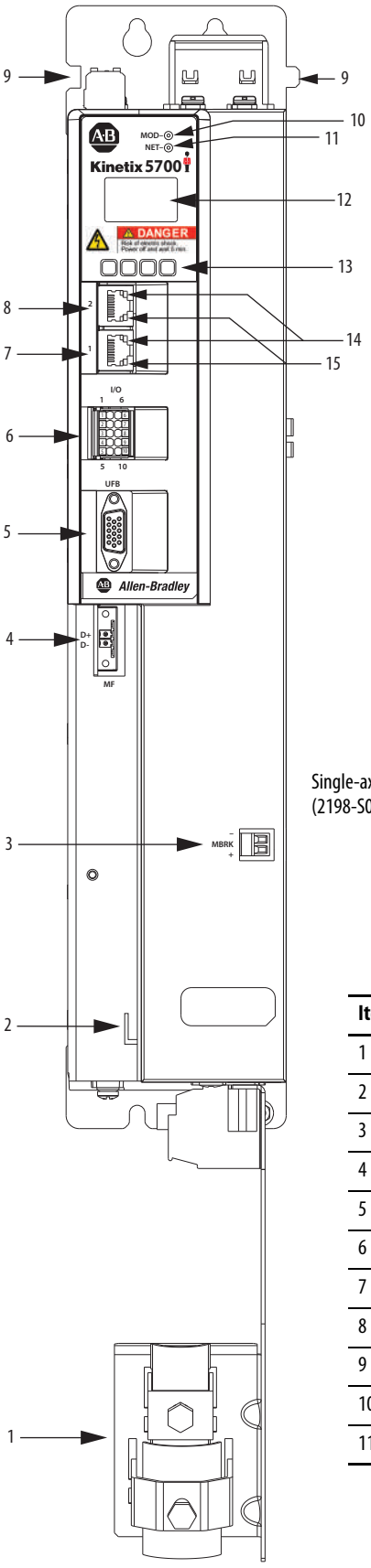
Dual Axis Inverter, Bottom View
(2198-D006-ERS*x* module is shown)

Item	Description
1	Motor cable clamp
2	Ground terminal
3	Motor feedback (MF) connector - A
4	Motor feedback (MF) connector - B
5	Universal feedback (UFB) connector - A
6	Universal feedback (UFB) connector - B
7	Digital inputs (IOD) connector - A
8	Digital inputs (IOD) connector - B
9	Ethernet (PORT1) RJ45 connector

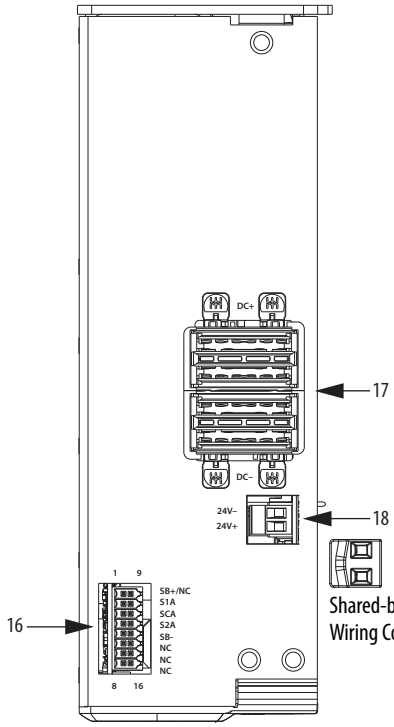
Item	Description
10	Ethernet (PORT2) RJ45 connector
11	Zero-stack mounting tab/cutout
12	Module status indicator
13	Network status indicator
14	LCD display
15	Navigation pushbuttons
16	Link speed status indicators
17	Link/Activity status indicators
18	Safe Torque Off (STO) connector

Item	Description
19	DC bus (DC) connector
20	24V control input power (CP) connector
21	Motor brake (BC) connector - A
22	Motor power (MP) connector - A
23	Motor power (MP) connector - B
24	Motor brake (BC) connector - B
25	Cooling fan

Single-axis Inverter Features and Indicators

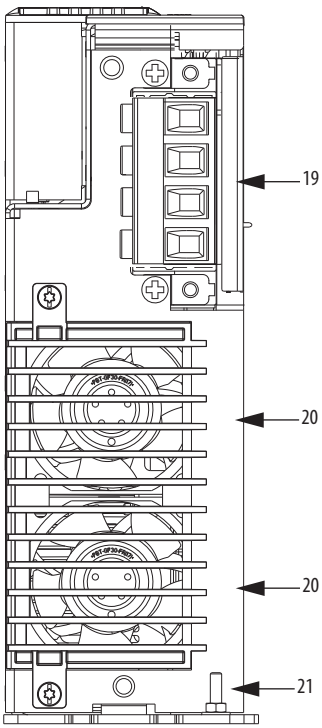


Single-axis Inverter, Front View
(2198-S086-ERS3 module is shown)



Shared-bus 24V Input
Wiring Connector

Single-axis Inverter, Top View
(2198-S086-ERS3 module is shown)

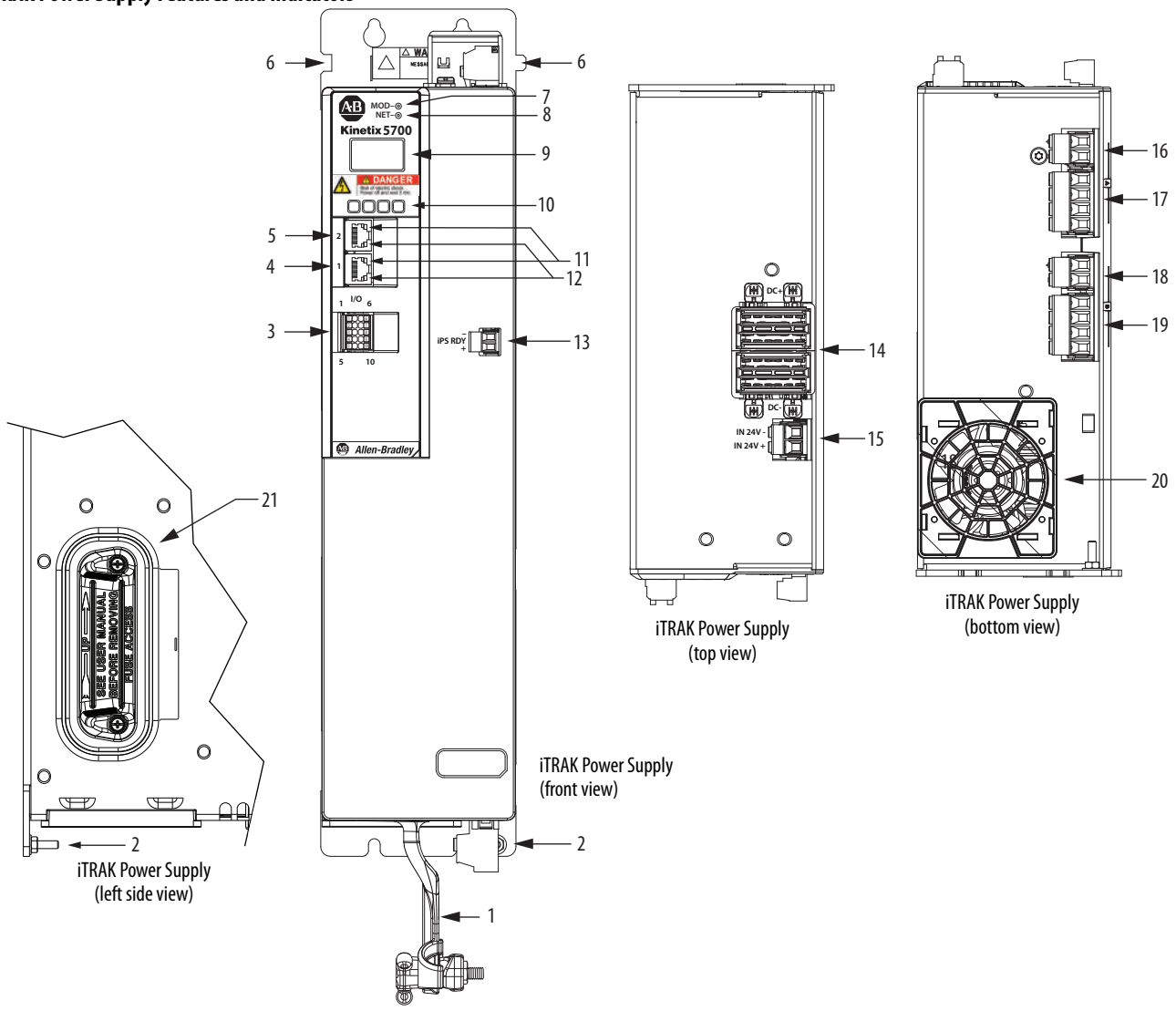


Single-axis Inverter, Bottom View
(2198-S086-ERS*x* module is shown)

Item	Description
1	Motor cable clamp
2	Motor feedback cable tie-wrap bracket
3	Motor brake (BC) connector
4	Motor feedback (MF) connector
5	Universal feedback (UFB) connector
6	Digital inputs (IOD) connector
7	Ethernet (PORT1) RJ45 connector
8	Ethernet (PORT2) RJ45 connector
9	Zero-stack mounting tab/cutout
10	Module status indicator
11	Network status indicator

Item	Description
12	LCD display
13	Navigation pushbuttons
14	Link speed status indicators
15	Link/Activity status indicators
16	Safe Torque Off (STO) connector
17	DC bus (DC) connector
18	24V control input power (CP) connector
19	Motor power (MP) connector
20	Cooling fans
21	Ground terminal

iTRAK Power Supply Features and Indicators



Item	Description
1	Power bus cable clamp
2	Ground lug
3	Digital inputs (IOD) connector
4	Ethernet (PORT1) RJ45 connector
5	Ethernet (PORT2) RJ45 connector
6	Zero-stack mounting tab/cutout
7	Module status indicator

Item	Description
8	Network status indicator
9	LCD display
10	Navigation push buttons
11	Link speed status indicators
12	Link/Activity status indicators
13	iTRAK PS ready (IR) connector
14	DC bus input (DC) connector

Item	Description
15	24V control input power (CP) connector
16	24V control output power (ICP) connector -A
17	DC bus output (IDC) connector - A
18	24V control output power (ICP) connector - B
19	DC bus output (IDC) connector - B
20	Cooling fan
21	Power supply internal fuse

IMPORTANT See Additional Resources on page 143 for the publications that support the iTRAK system.

Technical Specifications - Kinetix 5700 Drive Modules

DC-bus Power Supply Specifications

Attribute		2198-P031	2198-P070	2198-P141	2198-P208
AC input voltage		324…528V rms, three-phase (480V nom)			
AC input frequency		47…63 Hz			
Main AC input current (1) Nom (rms) three-phase		11.2A	27.0 A	49.6 A	73.1 A
Max inrush (0-pk)		33 A	33 A	33 A	33 A
Peak AC input current Nom (rms) three-phase		33.4 A	74.3 A	148.7 A	219.2 A
Line loss ride through		20 ms			
Control power DC input voltage		24V DC ±10%			
Control power DC input current (1) (2)		0.8 A_{DC}		1.9 A_{DC}	
Nominal bus output voltage		458…747V DC			
Continuous output current to bus Three-phase		10.5 A_{DC}	25.5 A_{DC}	46.9 A_{DC}	69.2 A_{DC}
Peak output current to bus (3) Three-phase		31.6 A_{DC}	70.3 A_{DC}	140.8 A_{DC}	207.6 A_{DC}
Continuous output power to bus 324…528V rms, three-phase		7 kW	17 kW	31 kW	46 kW
Peak output power to bus 324…528V rms, three-phase		21 kW	46 kW	93 kW	138 kW
Bus overvoltage	480V, nom AC input	832V DC			
Internal shunt resistance		37.5 Ω		13.5 Ω	
Internal shunt power		75 W		200 W	
Shunt on		775V plus 30V x bus regulator capacity/utilization (4)			
Shunt off		765V plus 30V x bus regulator capacity/utilization (4)			
Efficiency		99%			
Internal Capacitance		585 µF	780 µF	1640 µF	2050 µF
Capacitive energy absorption		129 J	172 J	362 J	453 J
Short-circuit current rating		200,000 A (rms) symmetrical			

(1) All drives are limited to 1 power cycle per minute.

(2) For current values when motors include a holding brake and additional information, refer to Control Power Current Specifications on page 9.

(3) Peak output current duration equals 1.0 second with 10% duty cycle (catalog numbers 2198-P031, 2198-P070, 2198-P141) and 100 ms with 1% duty cycle (catalog numbers 2198-P208).

(4) The shunt on and shunt off voltages increase during periods of shunting activity to promote sharing of shunt power in multi-axis configurations. Shunt utilization is equivalent to the BusRegulatorCapacity tag in the Logix Designer application.

Single-axis Inverter Power Specifications

Attribute	2198-S086-ERS3 2198-S086-ERS4	2198-S130-ERS3 2198-S130-ERS4	2198-S160-ERS3 2198-S160-ERS4
Bandwidth (1) Velocity loop, max Current loop	 400 Hz 1000 Hz		
PWM frequency	4 kHz		
Continuous output current (rms)	43.0 A	65.0 A	85.0 A
Continuous output current (0-pk)	60.8 A	91.9 A	120.2 A
Peak output current (rms) (2)	86.0 A	130.0 A	160.0 A
Peak output current (0-pk) (2)	121.6 A	183.8 A	226.2 A
Continuous power out (nom) 324…528V rms, three-phase	 29.7 kW	 44.9 kW	 60.1 kW
DC input current @ 458…747V DC	45.7 A_{DC}	69.0 A_{DC}	92.3 A_{DC}
Internal Capacitance	560 µF	840 µF	1120 µF

(1) Bandwidth values vary based on tuning parameters and mechanical components.

(2) Peak current duration (T_{PKmax}) equals 1.0 second.

Dual-axis Inverter Power Specifications

Attribute	Per Axis (3)	2198-D006-ERS3 2198-D006-ERS4	2198-D012-ERS3 2198-D012-ERS4	2198-D020-ERS3 2198-D020-ERS4	2198-D032-ERS3 2198-D032-ERS4	2198-D057-ERS3 2198-D057-ERS4
Bandwidth (1) Velocity loop, max Current loop		 400 Hz 1000 Hz				
PWM frequency		4 kHz				
Continuous output current (rms)	X	2.5 A	5.0 A	8.0 A	13.0 A	23.0 A
Continuous output current (0-pk)	X	3.5 A	7.0 A	11.3 A	18.3 A	32.5 A
Peak output current (rms) (2)	X	6.3 A	12.5 A	20.0 A	32.5 A	57.5 A
Peak output current (0-pk) (2)	X	8.8 A	17.6 A	28.2 A	45.9 A	81.3 A
Continuous power out (nom) 324…528V rms, three-phase	X	 1.7 kW	 3.4 kW	 5.5 kW	 8.9 kW	 15.9 kW
DC input current @ 458…747V DC	X	2.7 A_{DC}	5.3 A_{DC}	8.5 A_{DC}	13.7 A_{DC}	24.5 A_{DC}
Internal Capacitance		165 µF		330 µF	390 µF	705 µF

(1) Bandwidth values vary based on tuning parameters and mechanical components.

(2) Peak current duration (T_{PKmax}) equals 1.0 second.

(3) These attributes apply to both of the axes in each dual-axis inverter.

iTRAK Power Supply Specifications

Attribute	2198T-W25K-ER
Input voltage	458…747V DC
Continuous output current (per output)	12.5 A
Peak output current	25 A
Continuous power output DC-bus output (low voltage) DC-bus output (high voltage)	4.1 kW 165V DC 330V DC
DC input current (1) @ 458V DC in @ 747V DC in	 10 A 6.2 A
Internal capacitance	390 µF

(1) Because the iTRAK power supply is a DC-DC converter with a constant output rating, input current varies linearly with input voltage.

Control Power Current Specifications

Kinetix 5700 servo drives, the 2198-CAPMOD-2240 capacitor module, and iTRAK power supply have different 24V DC power consumption. Factors to consider when calculating the combined current demand from your 24V DC power supply include the following:

- Catalog number for each drive in the system
- Whether servo motors include the holding brake option
- Whether the system includes 2198-CAPMOD-2240 capacitor modules
- Whether the system includes 2198T-W25K-ER iTRAK power supplies and the number of iTRAK motor modules supported

Control Power Current Specifications

Drive Module	Drive Module Cat. No.	24V Current Per Module (non-brake motor) A_{DC}	24V Current, max (with maximum brake current) A_{DC}	24V Inrush Current (5) A
DC-bus Power Supplies	2198-P031	0.8	N/A	4.0
	2198-P070			
	2198-P141	1.9		
	2198-P208			
Dual-axis Inverters	2198-D006-ERS*x*	1.4 (2)	5.5 (3)	4.0
	2198-D012-ERS*x*			
	2198-D020-ERS*x*			
	2198-D032-ERS*x*	1.7 (2)	7.7 (3)	
	2198-D057-ERS*x*	2.3 (2)	8.3 (3)	
Single-axis Inverters	2198-S086-ERS*x*	4.6	9.6 (4)	4.0
	2198-S130-ERS*x*			
	2198-S160-ERS*x*			
iTRAK Power Supply (1)	2198T-W25K-ER	1.3	N/A	2.2
Capacitor Modules	2198-CAPMOD-2240	0.5	N/A	N/A
	2198-CAPMOD-DCBUS-IO	N/A		

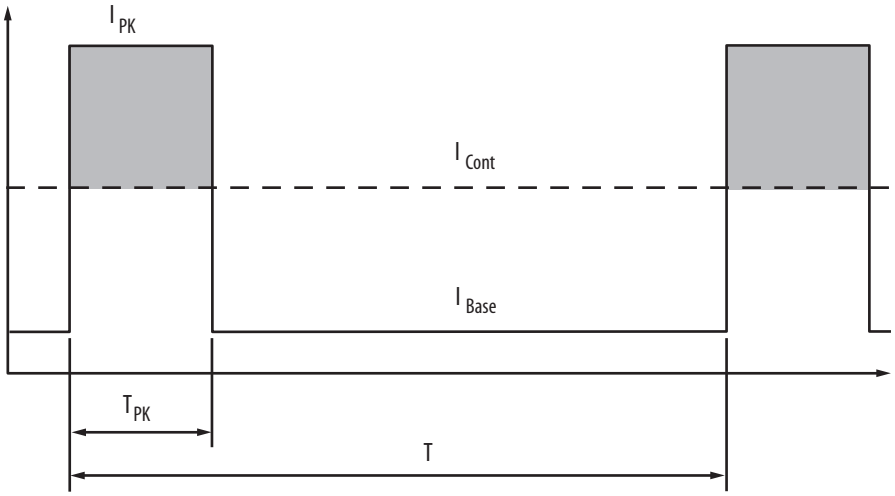
(1) These values represent only the iTRAK power supply. They do not include the iTRAK motor modules that are connected to the iTRAK power supply and also draw current from this 24V control power input. For more information regarding 24V control power requirements, see the iTRAK System User Manual, publication 2198T-UM001.
(2) Values are base current per module.
(3) Values assume two brake motors, each drawing the maximum rating of 2 A, are attached to each module.
(4) Values assume the maximum rated brake current of 5 A.
(5) Inrush current duration is less than 30 ms.

IMPORTANT When the Kinetix 5700 inverter catalog number ends in -ERS*x*, for example 2198-D057-ERS*x*, the variable (x) indicates that the inverter (using this example) can be 2198-D057-ERS3 or 2198-D057-ERS4.

Peak Current Specifications

Load Duty-cycle Profile Example

$$D = \frac{T_{PK}}{T} \times 100\%$$

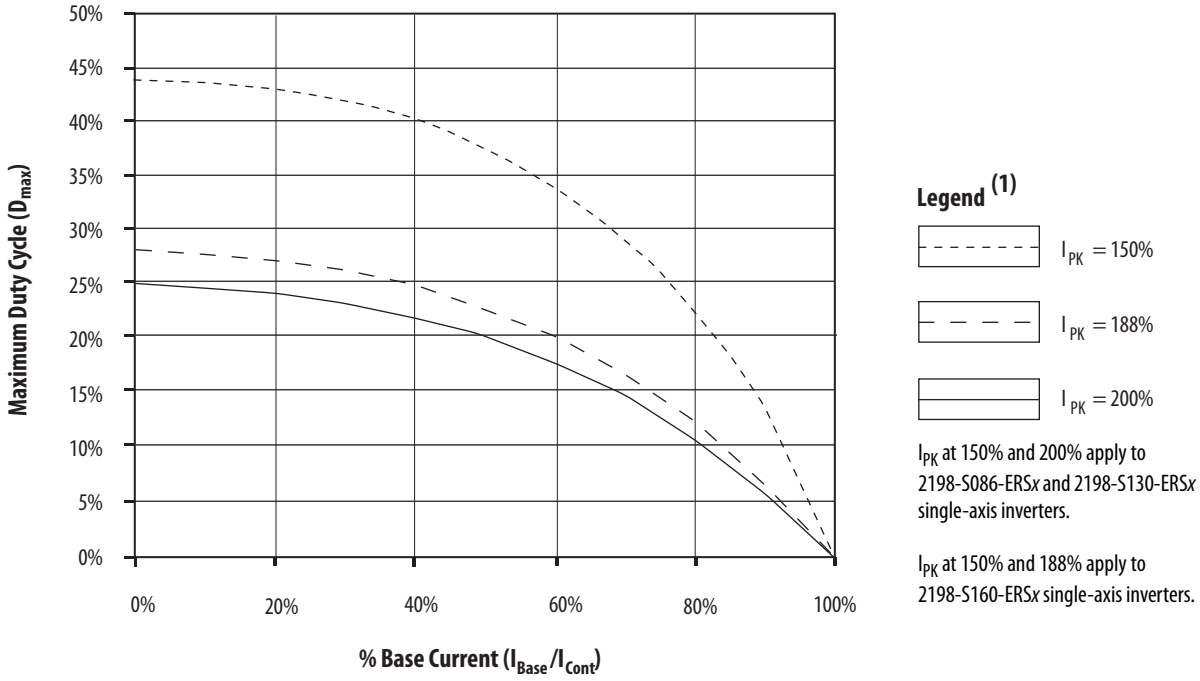


Peak Duty Cycle Definition of Terms

Term	Definition (1)
Continuous Current Rating (I_{Cont})	The maximum value of current that can be output continuously.
Peak Current Rating (I_{PKmax})	The maximum value of peak current that the drive can output. This rating is valid only for overload times less than T_{PKmax}.
Duty Cycle (D)	The ratio of time at peak to the Application Period is defined as: $D = \frac{T_{PK}}{T} \times 100\%$
Time at Peak (T_{PK})	The time at peak current (I_{PK}) for a given loading profile. Must be less than or equal to T_{PKmax}.
Peak Current (I_{PK})	The level of peak current for a given loading profile. I_{PK} must be less than or equal to the Peak Current Rating (T_{PKMAX}) of the drive.
Base Current (I_{Base})	The level of current between the pulses of peak current for a given loading profile. I_{Base} must be less than or equal to the continuous current rating (I_{Cont}) of the drive.
Loading Profile	The loading profile is composed of I_{PK}, I_{Base}, T_{PK}, and D (or T) values and completely specify the operation of the drive in an overload situation. These values are collectively defined as the Loading Profile of the drive.
Application Period (T)	The sum of the times at I_{PK} (T_{PK}) and I_{Base}.

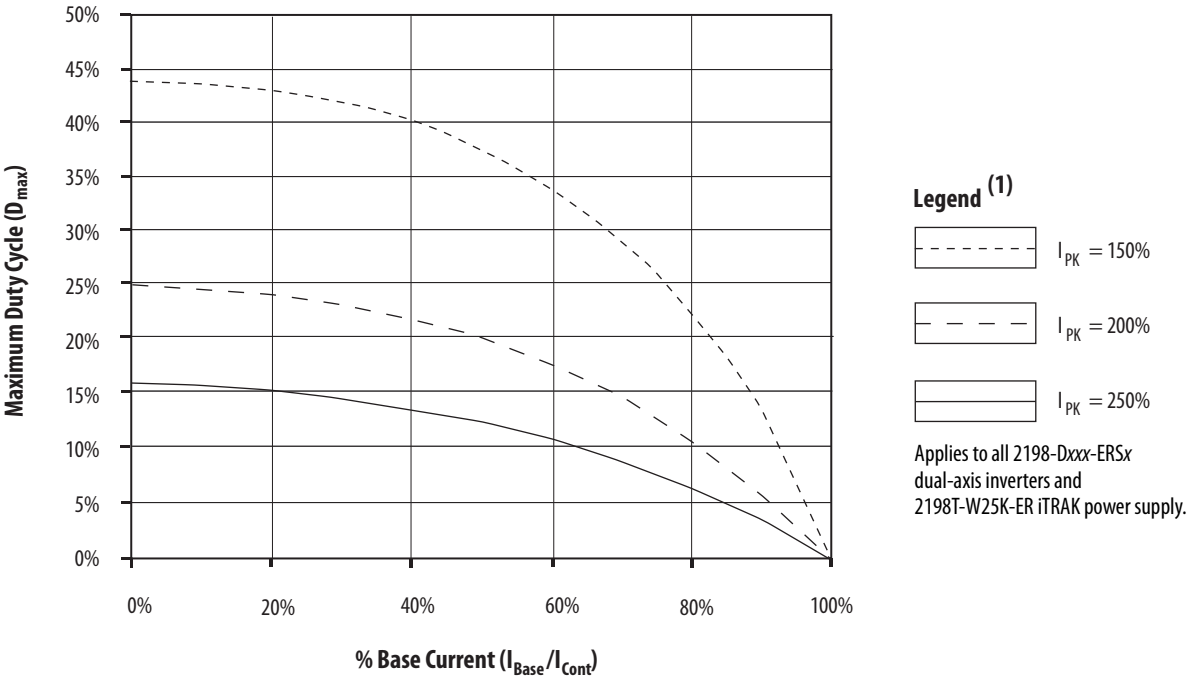
(1) All current values are specified as RMS.

Peak Single-axis Inverter Overload (T_{PK} < 1.0 s)



(1) Base current (I_{Base}) and peak current (I_{PK}) are a percentage of the continuous drive current rating (I_{Cont}).

Peak Dual-axis Inverter and iTRAK Power Supply Overload (T_{PK} < 1.0 s)



(1) Base current (I_{Base}) and peak current (I_{PK}) are a percentage of the continuous drive current rating (I_{Cont}).

Circuit Breaker/Fuse Specifications

The Kinetix 5700 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 200,000 A (fuses) and 65,000 A (circuit breakers).

Input Power UL/CSA Circuit-protection Specifications

Kinetix 5700 Drives		UL/CSA Applications [1]			
DC-bus Power Supply Cat. No.	**Drive Voltage (three-phase) nom**	**Bussmann Fuses Cat. No.**	**Miniature CB Cat. No.**	**Motor Protection CB, Self Protected CMC Cat. No.**	**Molded Case CB Cat. No.**
2198-P031	324…528V AC	LPJ-15SP (15A)	1489-M3D250	140M-D8E-C25	140G-G6C3-C25
2198-P070		LPJ-40SP (40A)	1489-M3D400	140M-F8E-C45	140G-G6C3-C50
2198-P141		LPJ-70SP (70A)	1489-M3D630	N/A	140G-G6C3-C90
2198-P208		LPJ-100SP (100A)	N/A	N/A	140G-G6C3-D12

(1) For applications requiring CSA certification, fuses (Bussmann catalog number 170M1760) must be added to the DC link between the two drive clusters when circuit breakers are used for branch circuit protection. The DC bus fuses are not required when AC line fuses are used for branch circuit protection.

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

Kinetix 5700 Drives		IEC (non-UL/CSA) Applications				
DC-bus Power Supply Cat. No.	**Drive Voltage (three-phase) nom**	**DIN gG Fuses** Amps, max	**Miniature CB Cat. No.**		**Motor Protection CB Cat. No.**	**Molded Case CB Cat. No.**
2198-P031	324…528V AC	16	1489-M3D250	N/A	140M-D8E-C25	140G-G6C3-C25
2198-P070		40	N/A	1492-SPM3D400	140M-F8E-C45	140G-G6C3-C50
2198-P141		75	N/A	1492-SPM3D630	140MG-H8E-C60	140G-G6C3-C90
2198-P208		110	N/A	N/A	140MG-H8E-D10	140G-G6C3-D12

Contactor Specifications

The DC-bus power supply contactor enable relay (CED connector) is rated at 24V DC or 110/220V AC at 1.0 A, max.

DC-bus Power Supply Cat. No.	Contactor [1] [2] Cat. No.	Intermediate Relay [3] Cat. No.
2198-P031	100-C16EJ10	N/A
2198-P070	100-C37EJ10	
2198-P141	100-C72DJ10	700-HB32Z24 (relay) 700-HN153 (socket)
2198-P208	100-C97DJ10	
2198-P208 (2 in parallel)	100-D180EZJ10	
2198-P208 (3 in parallel)	100-D300EZJ10	

(1) Auxiliary contact configuration (10) is for 1 N.O. 0 N.C. Other configurations are available.

(2) Requires integrated diode with the contactor coil.

(3) These DC-bus power supplies require an additional intermediate relay used with the contactor.

Power Dissipation Specifications

Use this table to size an enclosure and calculate required ventilation for your Kinetix 5700 drive system.

DC-bus Power Supply Cat. No.	Usage as % of Rated Power Output (watts)				
	20%	**40%**	**60%**	**80%**	**100%**
2198-P031	97	101	105	109	113
2198-P070	108	119	130	140	151
2198-P141	249	267	286	304	323
2198-P208	265	294	323	352	380
Dual-axis Inverter Cat. No. (1)					
2198-D006-ERS*x*	17	29	41	53	65
2198-D012-ERS*x*	34	58	82	106	130
2198-D020-ERS*x*	52	84	116	148	180
2198-D032-ERS*x*	100	155	210	265	320
2198-D057-ERS*x*	252	354	456	558	660
Single-axis Inverter Cat. No.					
2198-S086-ERS*x*	190	255	325	400	475
2198-S130-ERS*x*	225	340	460	590	725
2198-S160-ERS*x*	270	420	570	760	950
iTRAK Power Supply Cat. No.					
2198T-W25K-ER	206	272	338	404	470
Capacitor Module Cat. No.					
2198-CAPMOD-2240	28	34	42	51	62
2198-CAPMOD-DCBUS-IO	1.1	1.4	1.6	2.1	2.5

(1) Values for the dual-axis inverters are based on both axes (each axis dissipates half the rated power output). For example, the 2198-D006-ERS*x* dual-axis inverter (axis A) with usage of 20% (17/2=8.5 W) and (axis B) with usage of 60% (41/2= 20.5 W) dissipates a total of 29 W.

Weight Specifications

DC-bus Power Supply Cat. No.	Weight, approx kg (lb)
2198-P031	4.33 (9.55)
2198-P070	4.42 (9.74)
2198-P141	6.91 (15.2)
2198-P208	7.04 (15.5)

iTRAK Power Supply Cat. No.	Weight, approx kg (lb)
2198T-W25K-ER	7.60 (16.8)

Dual-axis Inverter Cat. No.	Weight, approx kg (lb)
2198-D006-ERS*x*	4.16 (9.17)
2198-D012-ERS*x*	
2198-D020-ERS*x*	
2198-D032-ERS*x*	
2198-D057-ERS*x*	6.76 (14.9)

Single-axis Inverter Cat. No.	Weight, approx kg (lb)
2198-S086-ERS*x*	5.21 (11.5)
2198-S130-ERS*x*	5.44 (12.0)
2198-S160-ERS*x*	6.80 (15.0)

Maximum Motor Cable Lengths

Combined power cable length for all axes on the same DC bus must not exceed 400 m (1312 ft). Drive-to-motor cables up to 90 m (295 ft) can be used, depending on the feedback type. See the Kinetix Motion Accessories Technical Data, publication KNX-TD004, for cable specifications.

Drive-to-Motor Feedback Cable Length

Feedback Type	Cable Length, max m (ft)
Single-turn or multi-turn absolute	90 (295)
Incremental	30 (98)
Heidenhain EnDat	90 (295)

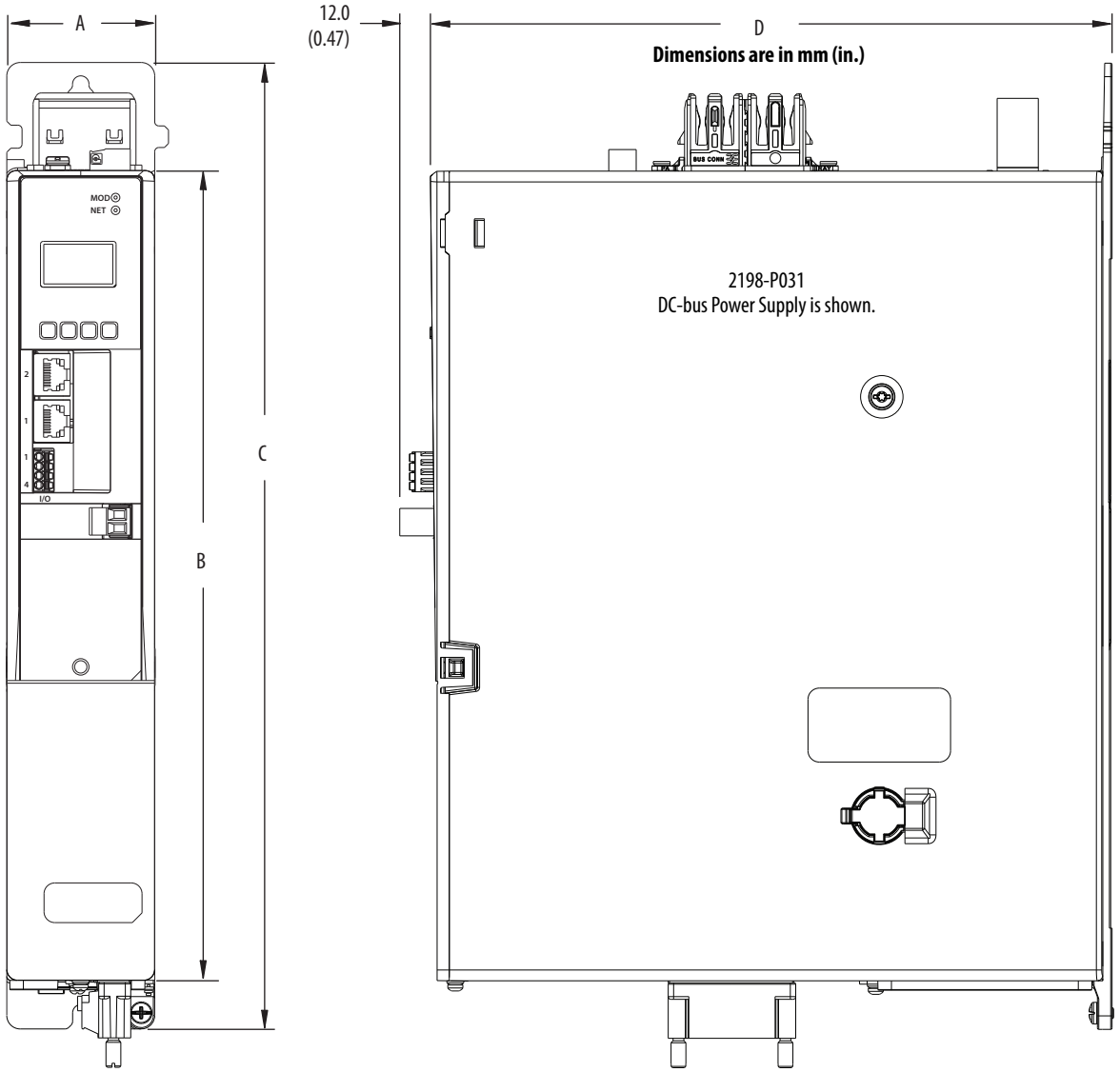
For iTRAK systems, cables from iTRAK power supply to motor modules up to 30 m (98 ft) can be used. Refer to the iTRAK System Technical Data, publication 2198T-TD001, for cable specifications.

IMPORTANT System performance was tested at these cable lengths. These limitations also apply when meeting CE requirements.

Dimensions - Kinetix 5700 Servo Drives

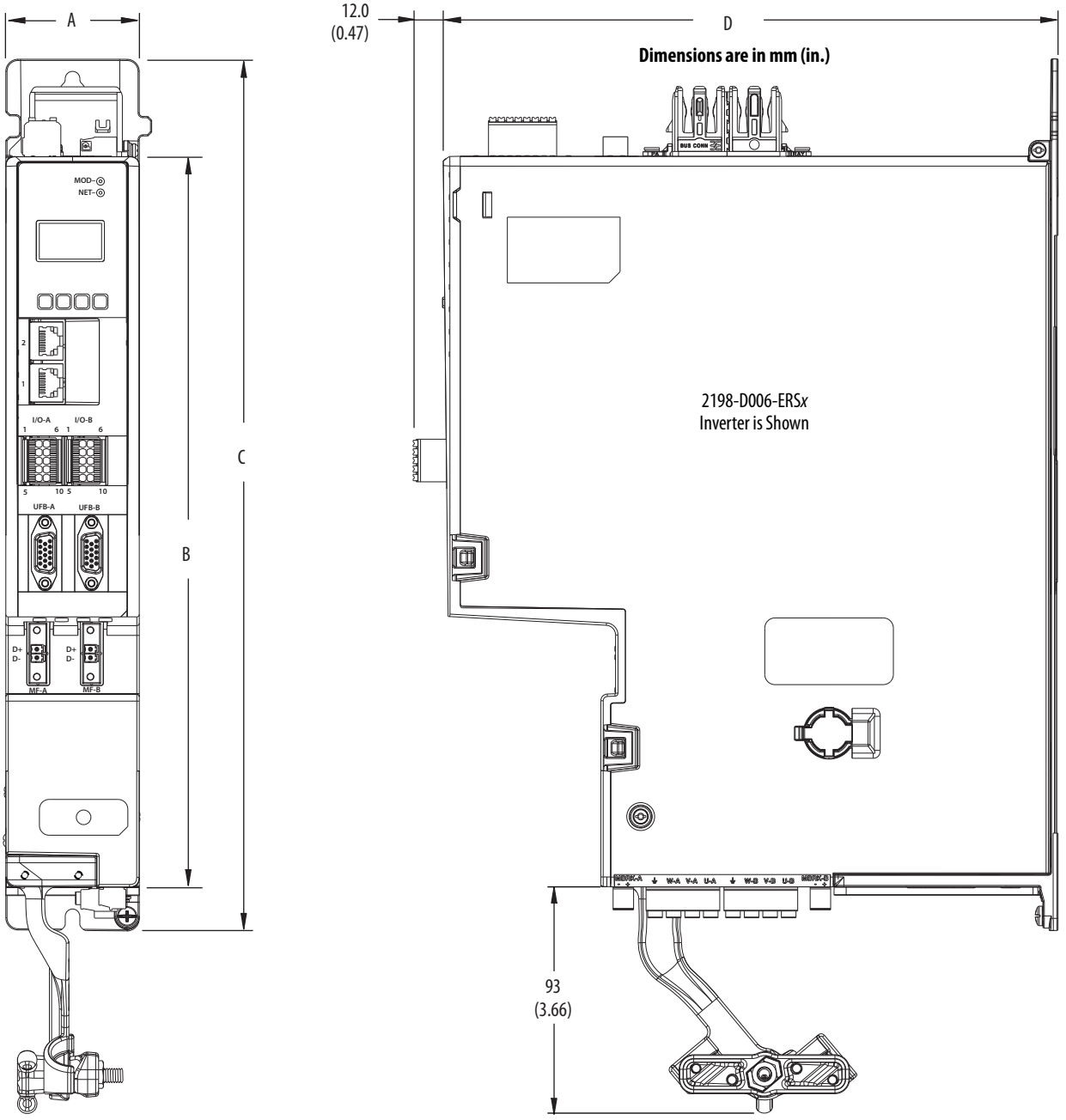
These drawings provide mounting dimensions for Kinetix 5700 servo drives and iTRAK power supply. Also included are drawings showing the impact of compatible motor feedback connector kits on the mounting dimensions. Refer to page 18 for dimensions when using these kits.

DC-bus Power Supply Dimensions



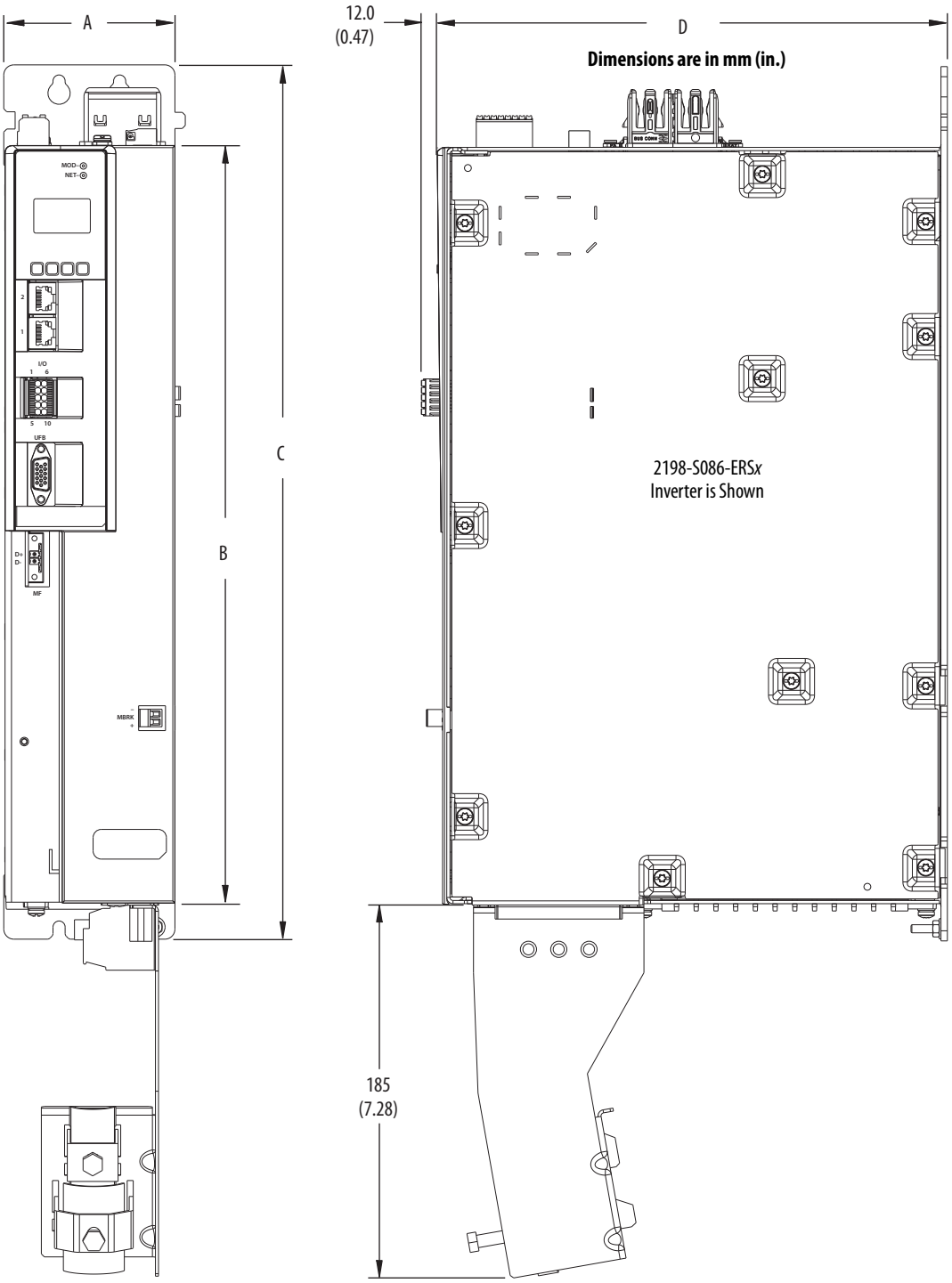
DC-bus Power Supply Cat. No.	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)
2198-P031	55 (2.17)	300 (11.81)	358 (14.09)	252 (9.92)
2198-P070				
2198-P141	85 (3.35)	375 (14.76)	433 (17.04)	
2198-P208				

Dual-axis Inverter Dimensions



Dual-axis Inverter Cat. No.	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)
2198-D006-ERS*x*	55 (2.17)	300 (11.81)	358 (14.09)	252 (9.92)
2198-D012-ERS*x*				
2198-D020-ERS*x*				
2198-D032-ERS*x*				
2198-D057-ERS*x*	85 (3.35)	375 (14.76)	433 (17.0)	

Single-axis Inverter Dimensions



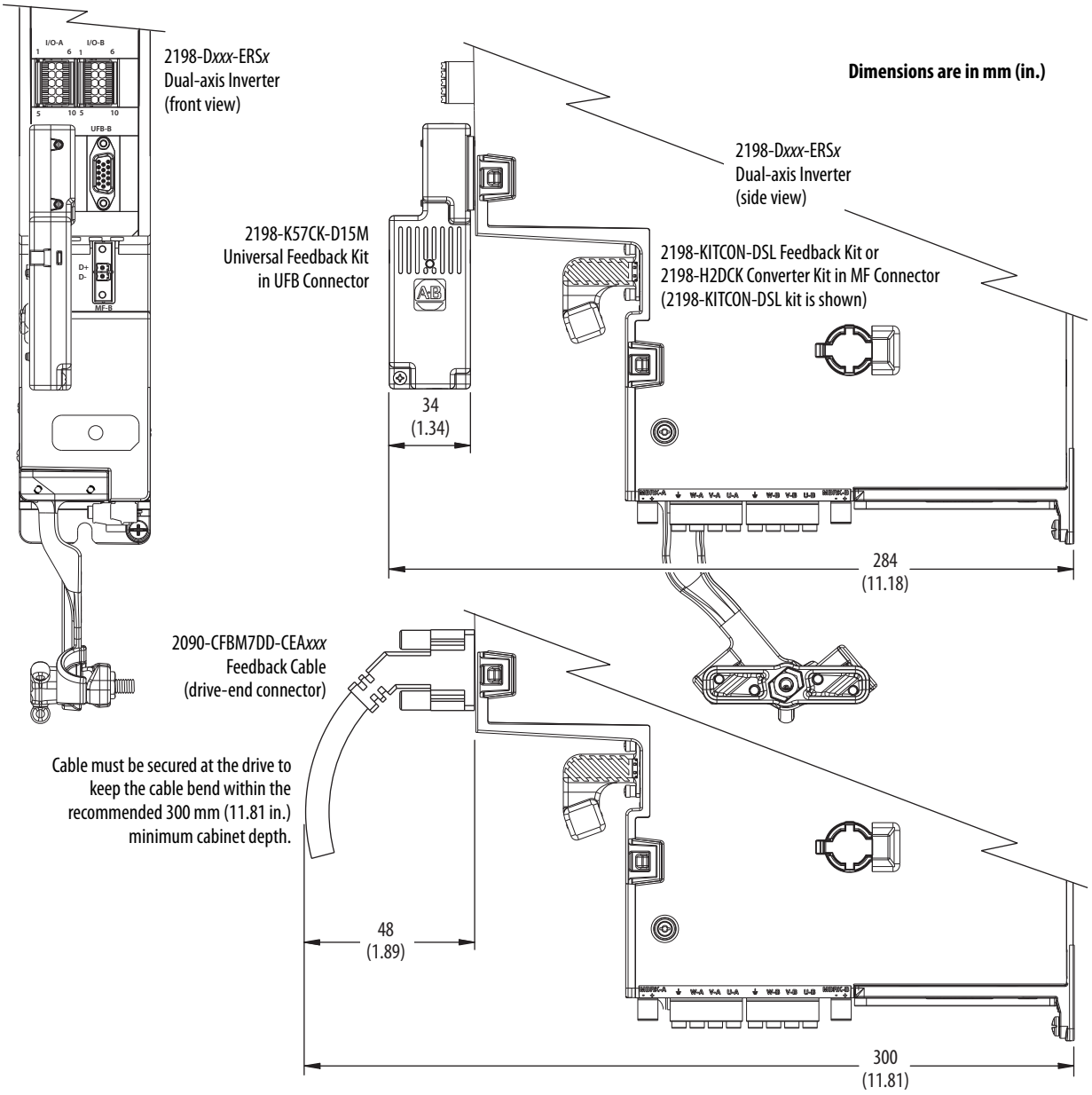
Single-axis Inverter Cat. No.	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)
2198-S086-ERS*x*	85 (3.35)	375 (14.8)	433 (17.0)	252 (9.92)
2198-S130-ERS*x*				
2198-S160-ERS*x*	100 (3.94)	420 (16.54)	478 (18.82)	

The 2198-KITCON-DSL feedback connector kit and 2198-H2DCK feedback converter kit do not affect the mounting dimensions of the drive. No portion of those kits extend out from the front of the drive or below the drive.

IMPORTANT	The 2198-K57CK-D15M universal feedback kit and 2090-CFBM7DD (drive-end connector) feedback cable extend out from the UFB connector as shown and covers a portion of the other two kits (when they are used), which requires you to install feedback kits in the MF connector first.

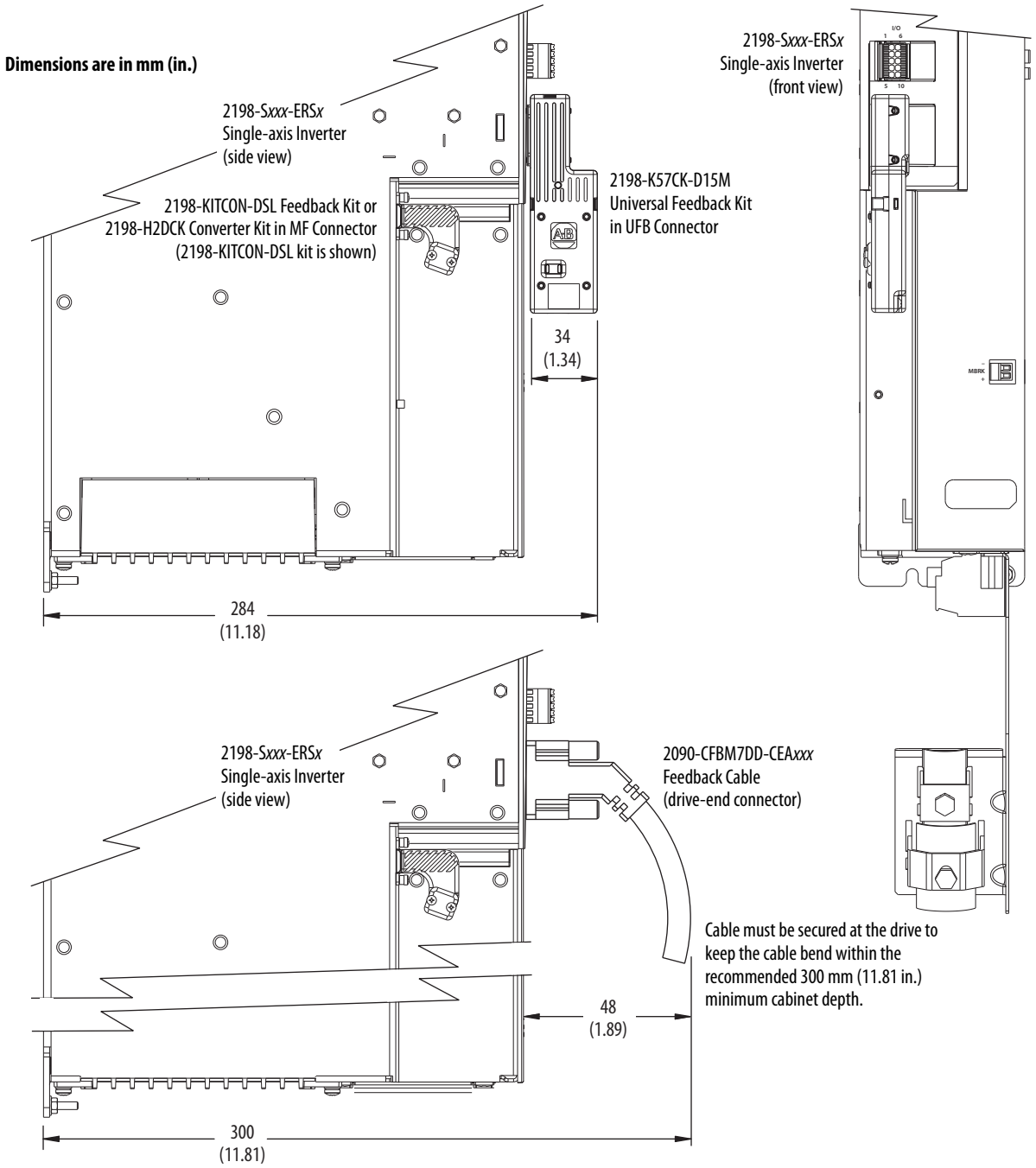
These examples show the 2198-K57CK-D15M universal feedback kit and 2090-CFBM7DD feedback cable that is mounted above (covering) the 2198-KITCON-DSL connector kit in the MF connector. You can replace the 2198-KITCON-DSL feedback kit with the 2198-H2DCK converter kit, if needed, without affecting these mounting dimensions.

Dual-axis Inverter With 2198-K57CK-D15M Universal Feedback Kit



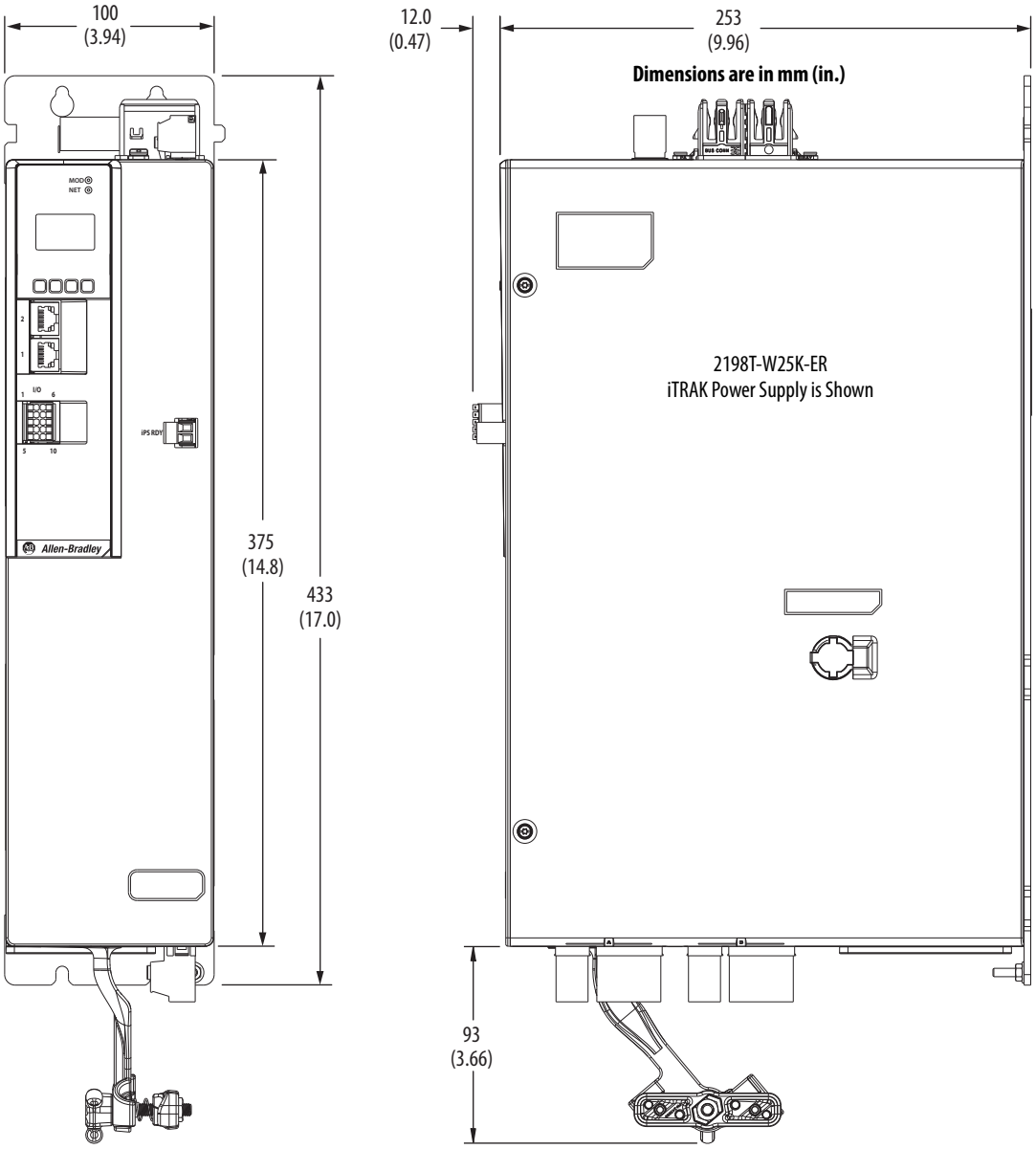
Refer to Universal Feedback Connector Kit on page 34 for motor/actuator compatibility and product dimensions.

Single-axis Inverter With 2198-K57CK-D15M Universal Feedback Kit



Refer to Hiperface-to-DSL Feedback Converter Kit on page 35 for motor/actuator compatibility and page 55 product dimensions.

iTRAK Power Supply Dimensions



Environmental Specifications - Kinetix 5700 Servo Drives

Attribute	Operational Range	Storage Range (nonoperating)
Ambient temperature	0…50 °C (32…122 °F)	-40…+70 °C (-40…+158 °F)
Relative humidity	5…95% noncondensing	5…95% noncondensing
Protection class (IEC 60529)	IP20	
Degree of pollution (IEC 61800-5-1)	2	
Altitude	• 1500 m (4921 ft) derate 3% per 300 m (984 ft) above 1500 m • 2000 m (6562 ft) max, with corner-grounded input power • 3000 m (9843 ft) max, with non corner-grounded input power	3000 m (9843 ft) during transport
Vibration	5…55 Hz @ 0.35 mm (0.014 in.) double amplitude, continuous displacement; 55…500 Hz @ 2.0 g peak constant acceleration	
Shock	15 g, 11 ms half-sine pulse (3 pulses in each direction of 3 mutually perpendicular directions)	

Certifications

Kinetix 5700 Servo Drives

Agency Certification (1)	Standards
c-UL-us (2)	UL Listed to U.S. and Canadian safety standards (UL 61800-5-1, 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 61800-5-1, (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.
Functional Safety	TÜV Certified for Functional Safety: up to SIL CL3, according to IEC 61800-5-2, IEC 61508, and IEC 62061; up to Performance Level PLe and Category 3, according to ISO 13849-1; when used as described in the Kinetix 5700 Servo Drives User Manual, publication 2198-UM002 or the Kinetix 5700 Safe Monitor Functions Safety Reference Manual, publication 2198-RM001.
C-Tick	Australian Radiocommunications Act, compliant with: • Radiocommunications Act: 1992 • Radiocommunications (Electromagnetic Compatibility) Standard: 2008 • Radiocommunications Labelling (Electromagnetic Compatibility) Notice: 2008
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: • Article 58-2 of Radio Waves Act, Clause 3 • Registration number: KCC-REM-RAA-2198
ODVA	EtherNet/IP conformance tested.
OSHA	Maximum audible noise from the servo drive system complies with OSHA standard 3074, Hearing Conservation (<85 dBA).

(1) When product is marked, refer to publication 2198-CT002 for the Kinetix 5700 servo drives EU Declaration of Conformity certificate.

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

Kinetix 5700 iTRAK Power Supply

Agency Certification (1)	Standards
c-UL-us	UL Listed to U.S. and Canadian safety standards (UL 61800-5-1, File E59272 and CSA C22.2 No 274-13).
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.
C-Tick	Australian Radiocommunications Act, compliant with: • Radiocommunications Act: 1992 • Radiocommunications (Electromagnetic Compatibility) Standard: 2008 • Radiocommunications Labelling (Electromagnetic Compatibility) Notice: 2008
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: • Article 58-2 of Radio Waves Act, Clause 3 • Registration number: KCC-REM-RAA-2198
OSHA	Maximum audible noise from the servo drive system complies with OSHA standard 3074, Hearing Conservation (<85 dBA).

(1) When product is marked, refer to https://www.rockwellautomation.com/global/certification/overview.page for Declarations of Conformity Certificates.

Accessories - Kinetix 5700 Servo Drives

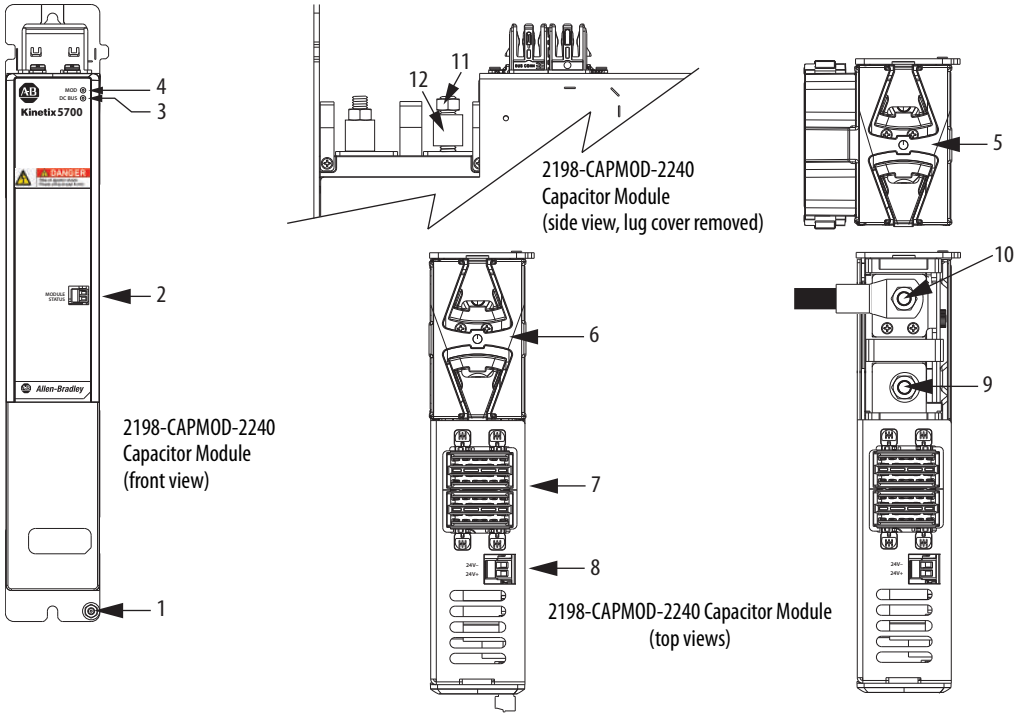
Kinetix 5700 drive accessories include capacitor modules, passive shunt modules, the encoder output module, line reactors, AC line filters, feedback connector kits, the system mounting toolkit, and shared-bus connector kits.

Capacitor Modules

The 2198-CAPMOD-2240 capacitor module and 2198-CAPMOD-DCBUS-IO extension module are used for energy storage and to extend the DC-bus voltage to another inverter cluster. You can use multiple 2198-CAPMOD-2240 capacitor modules in a system configuration, but each one adds to the total system capacitance. The 2198-CAPMOD-2240 capacitor module is also used in applications where up to 100 A maximum external DC-bus current is required. You can add the 2198-CAPMOD-DCBUS-IO extension module to the left or right of the capacitor module when the external DC-bus current exceeds 100 A, up to a maximum of 200 A.

The Bulletin 2198-CAPMOD-2240 capacitor module is an option for Kinetix 5700 drive system configurations. This section contains features, specifications, and product dimensions.

Capacitor Module Features and Indicators

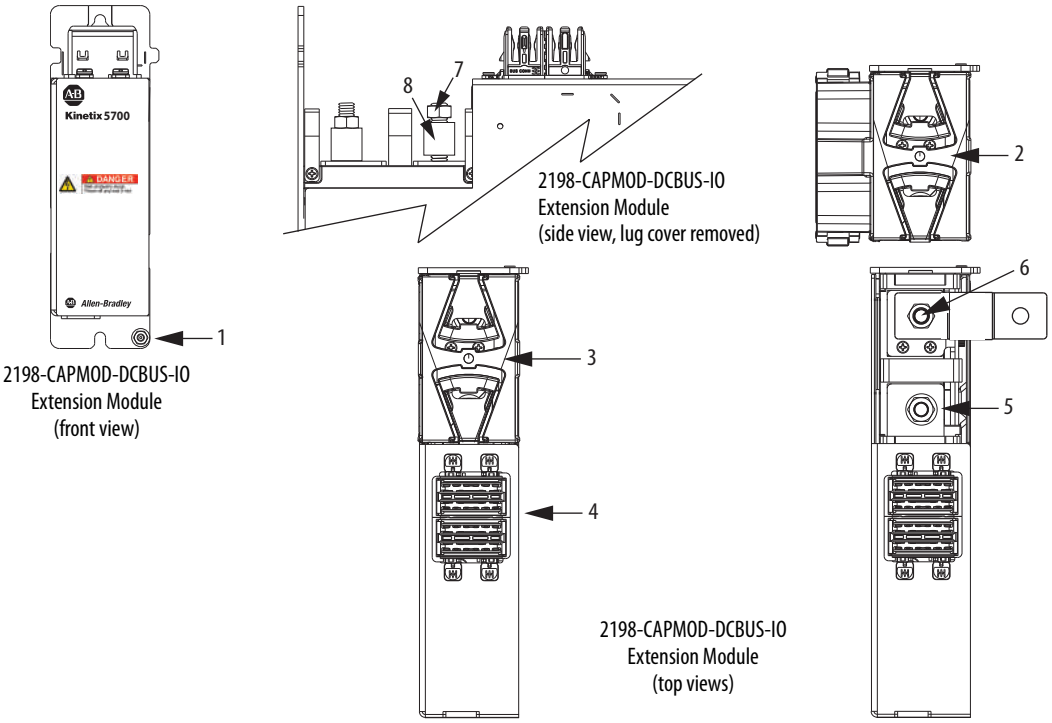


Item	Description
1	Ground stud
2	Module status (MS) connector
3	DC-bus status indicator
4	Module status indicator
5	Stud/lug cover with wires (1)
6	Stud cover without wires

Item	Description
7	DC-bus (DC) connector
8	24V control input power (CP) connector
9	DC– M8 stud (external DC-bus)
10	DC+ M8 stud (external DC-bus), shown with wire lug
11	M8 hex nut
12	Lug spacer

(1) This example shows the lug cover oriented for wires exiting to the left (capacitor module is on the far left of the drive configuration). Rotate lug cover 180° when wires exit to the right (capacitor module is on the far right of the drive configuration).

Extension Module Features and Indicators



Item	Description
1	Ground lug
2	Stud/lug cover with wires (1)
3	Stud cover without wires
4	DC-bus (DC) connector

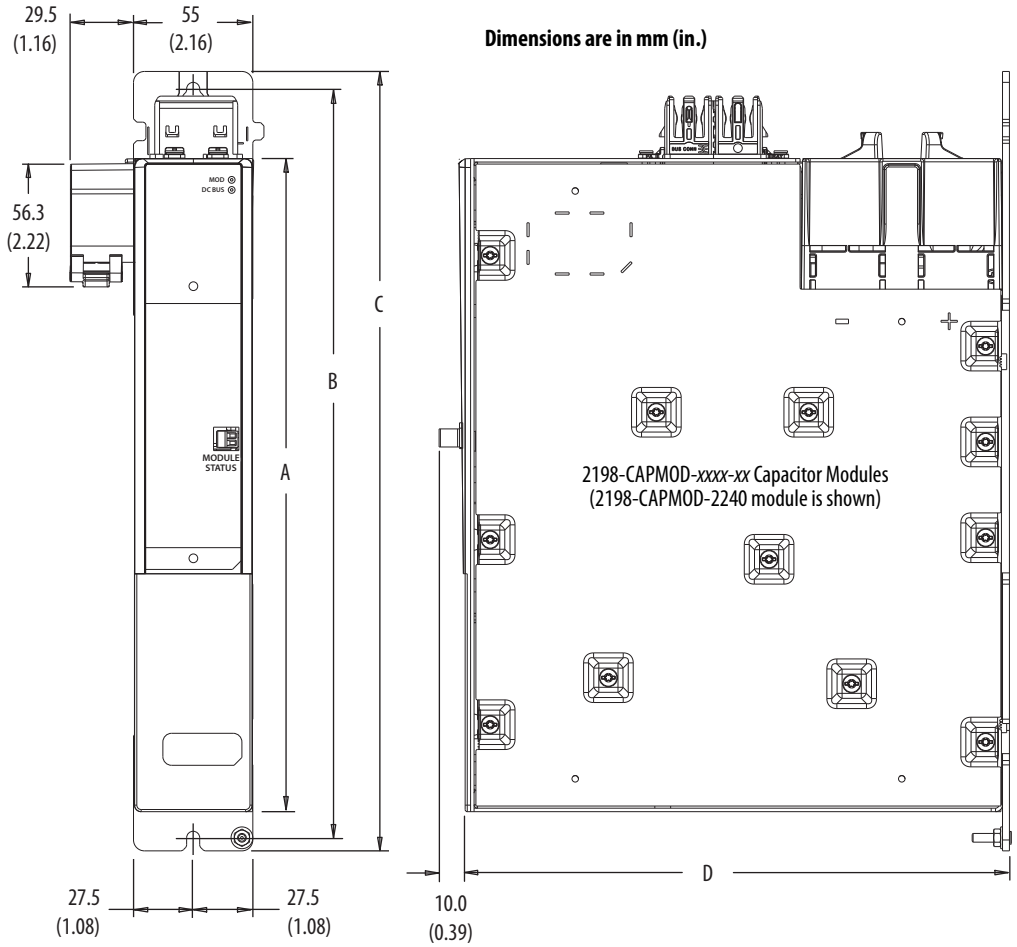
Item	Description
5	DC– M8 stud (external DC-bus)
6	DC+ M8 stud (external DC-bus), shown with flexible bus-bar (2x)
7	M8 hex nut
8	Lug spacer

(1) This example shows the lug cover oriented for wires exiting to the left (extension module is on the far left of drive configuration). Rotate lug cover 180° when wires exit to the right (extension module is on the far right of drive configuration).

Capacitor Module Specifications

Capacitor Module Cat. No.	Voltage Range V DC	Capacitance µF	Energy Storage J	Continuous Current A, avg	Weight, approx kg (lb)
2198-CAPMOD-2240	458…747	2240	734	100	3.3 (7.2)
2198-CAPMOD-DCBUS-IO		N/A	N/A	100	1.2 (2.7)

Capacitor Module Dimensions



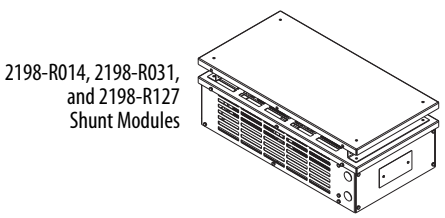
Capacitor Module Cat. No.	A	B (1)	C	D
2198-CAPMOD-2240	300 (11.81)	345 (13.58)	358 (14.09)	253 (10.0)
2198-CAPMOD-DCBUS-IO	131 (5.16)	176 (6.93)	189 (7.44)	248 (9.76)

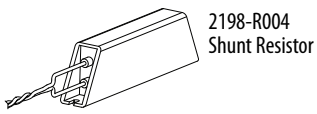
(1) The recommended mounting hardware is M5 (#10-32) steel bolts. Apply 4.0 N•m (35.4 lb•in) maximum torque to each fastener.

Passive Shunt Modules and Resistors

The Kinetix 5700 passive shunts are external modules that provide additional shunt capacity for applications where the DC-bus power supply's internal shunt capacity is exceeded.

Catalog numbers 2198-R014, 2198-R031, and 2198-R127 are composed of resistor coils that are housed inside an enclosure. Catalog number 2198-R004 is a shunt resistor without an enclosure.



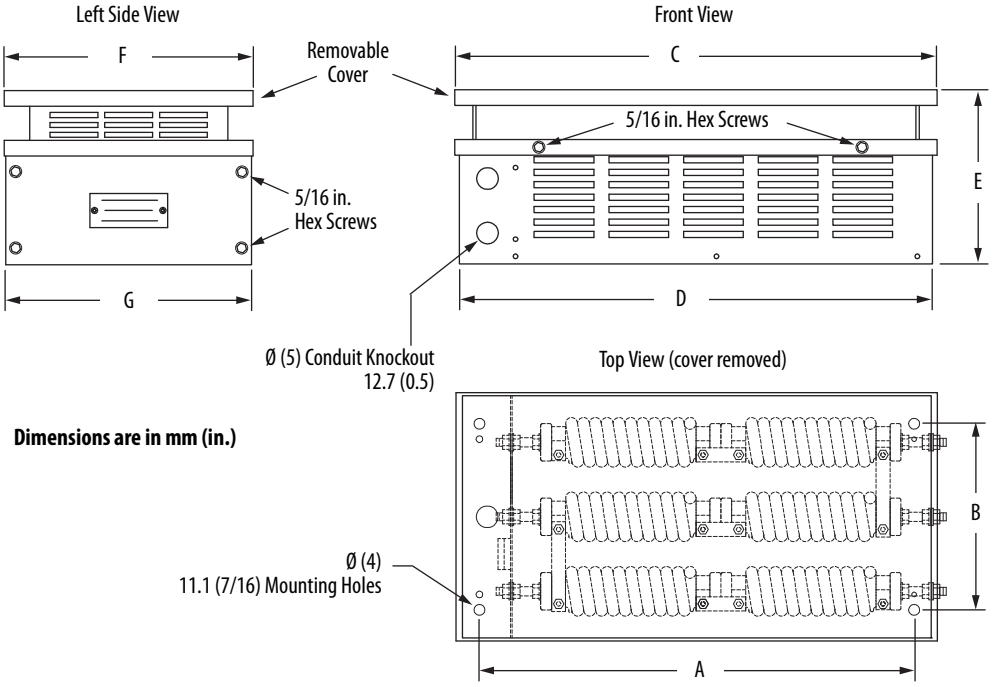


Shunt Module Specifications

Shunt Module Cat. No.	Resistance Ω	Continuous Power W	Weight, approx kg (lb)
2198-R004	33	400	1.8 (4.0)
2198-R014	9.4	1400	9.1 (20)
2198-R031	33	3100	16.8 (37)
2198-R127 (1)	13	12,700	22.2 (49)

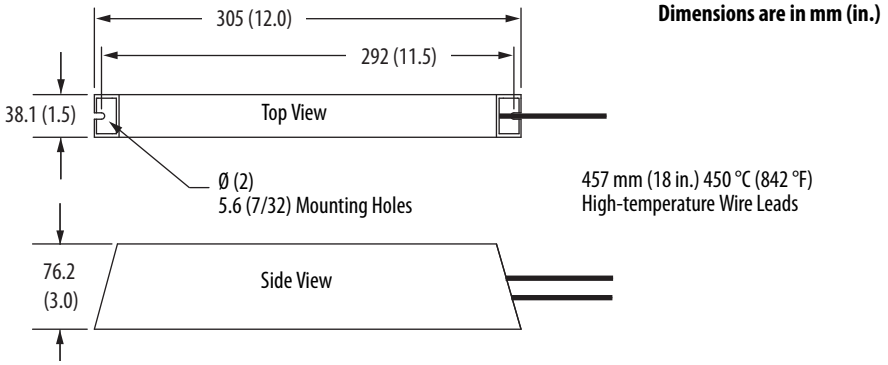
(1) This product presents a lift hazard. To avoid personal injury, use care when lifting the product.

Shunt Module Dimensions (catalog numbers 2198-R014, 2198-R031, and 2198-R127)



Shunt Module Cat. No.	A	B	C	D	E	F	G
2198-R014	445 (17.5)	191 (7.5)	492 (19.38)	483 (19.0)	178 (7.0)	254 (10.0)	251 (9.88)
2198-R031	635 (25.0)	343 (13.5)	683 (26.88)	673 (26.5)		406 (16.0)	403 (15.88)
2198-R127	673 (26.5)	267 (10.5)	721 (28.38)	711 (28.0)	305 (12.0)	330 (13.0)	327 (12.88)

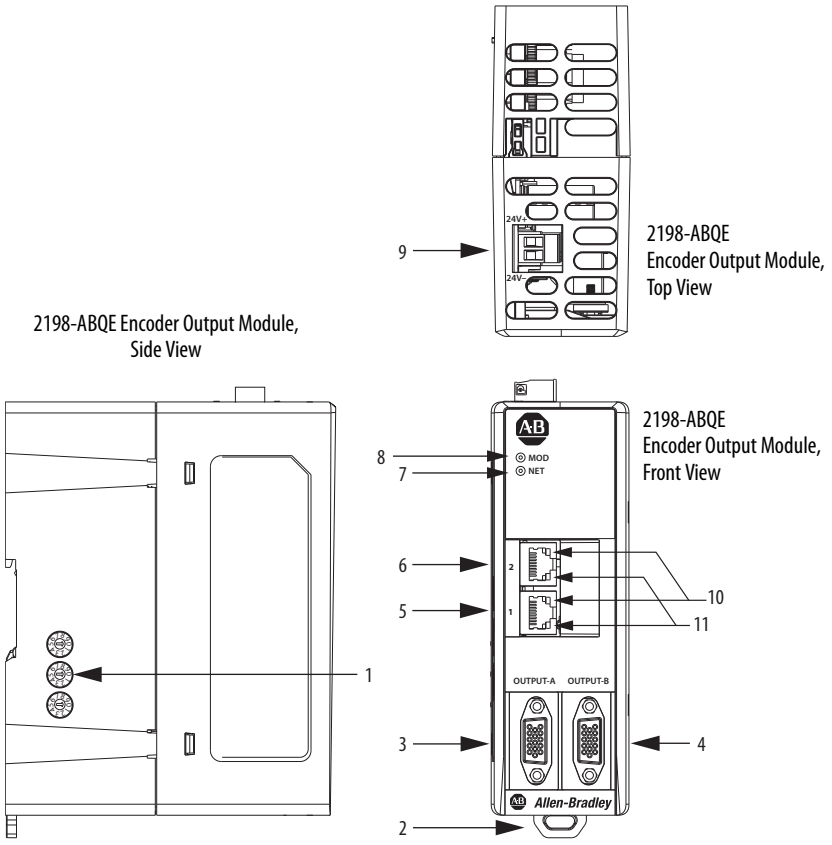
Shunt Resistor Dimensions (catalog number 2198-R004)



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.

Module Features and Indicators

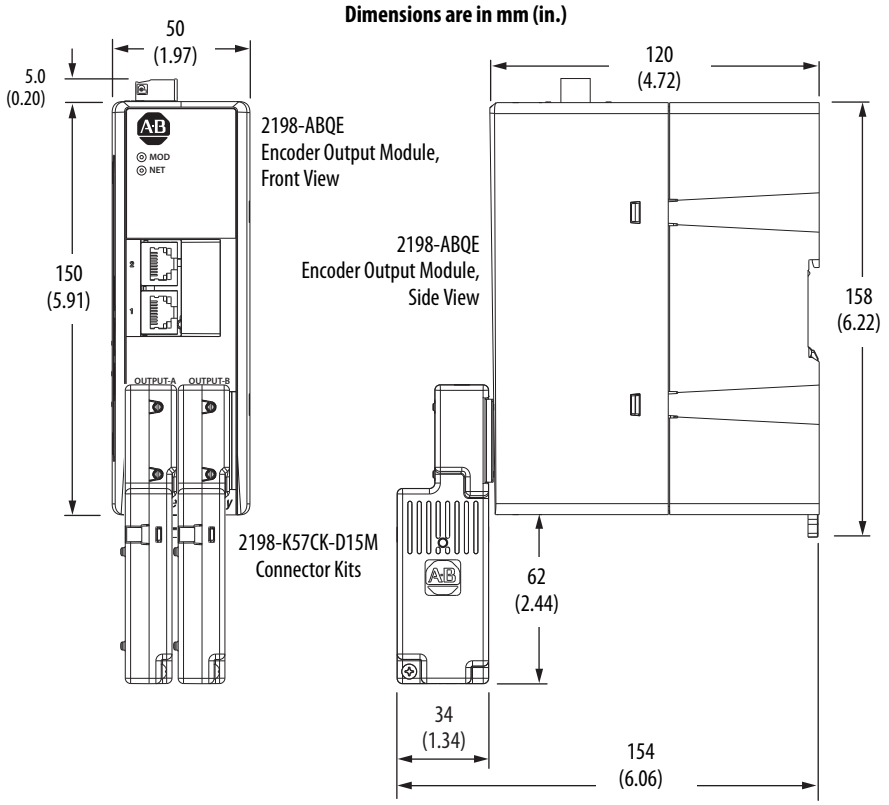


Item	Description
1	IP address switches
2	Mounting latch
3	15-pin output connector - A
4	15-pin output connector - B
5	Ethernet (PORT1) RJ45 connector
6	Ethernet (PORT2) RJ45 connector
7	Network status indicator
8	Module status indicator
9	24V control input power (CP) connector
10	Link speed status indicators
11	Link/Activity status indicators

These items are required for installation and are ordered separately:

- 2198-K57CK-D15M connector kit, for terminating output cable conductors (1 for each output connector)
- 2198-KITCON-ABQE spare connector and end-anchor set that includes the following:
  - 24V wiring plug for control power input (replacement)
  - Label for recording the IP address and attaching to the encoder output module (replacement)
  - DIN-rail end-anchors for holding the module in position (2 per module)

Encoder Output Module Dimensions



Included in the dimensions are 2198-K57CK-D15M connector kits attached to the output connectors. End anchors, used to secure the module on the DIN rail, add 8 mm (0.31 in.) on either side of the module.

Encoder Output Module General Specifications

Attribute	Value
Control input power (24V) ratings (SELV and LIM or Class 2 power supply)	21.6…26.4V DC (24 V DC, nom) 0.3 A, 7.2 W, max @ 24V DC
Control (input power) inrush current, max	3 A
Control input power connector wire size	16…24 AWG
Output supply power rating for single-ended outputs only (SELV and LIM or Class 2 power supply)	12…30V DC 0.14 A, max
Output connector wire size	16…28 AWG
Output signal type	Differential (RS422) or single-ended
Weight	0.50 kg (1.1 lb)

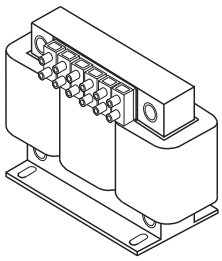
Bulletin 1321 Line Reactors

At the AC input of a DC-bus power supply, Allen-Bradley Bulletin 1321 line reactors help protect against surges or spikes on the incoming power lines and help reduce harmonic distortion. Multiple power supplies, with common input power, must each have their own line reactor. Individual line reactors provide filtering between each power supply to help reduce crosstalk while providing optimum surge protection.

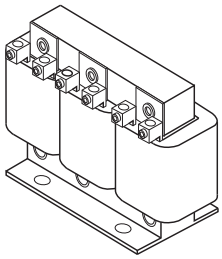
ATTENTION: To avoid damage to equipment follow these line reactor guidelines:

- When only one DC-bus power supply is used in a single bus group, the line reactor is optional, unless the power source (transformer) is greater than 150KVA or less than 3% impedance.
- When two or three 2198-P208 power supplies are used in a drive system, line reactors are required for each of the power supplies.

Bulletin 1321 Line Reactors



Catalog Numbers
1321-3R12-B and 1321-3R35-B



Catalog Numbers
1321-3R55-B and 1321-3R80-B

1321 Line Reactor Catalog Numbers

DC-bus Power Supply Cat. No.	Number of Power Supplies in a Bus Group	Bulletin 1321 Line Reactor Cat. No.	Status
2198-P031	1	1321-3R12-B	Optional (1)
2198-P070	1	1321-3R35-B	Optional (1)
2198-P141	1	1321-3R55-B	Optional (1)
2198-P208	1	1321-3R80-B	Optional (1)
	2		Required
	3		Required

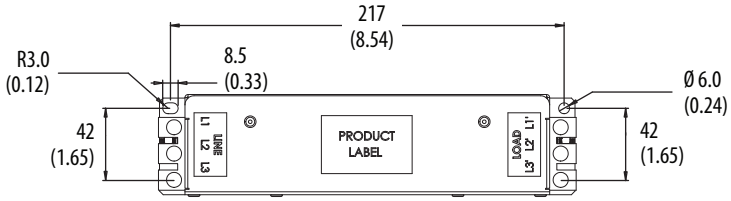
(1) Required if the power source (transformer) is greater than 150KVA or less than 3% impedance.

For line reactor specifications, terminations, and dimensions, refer to the 1321 Power Conditioning Products Technical Data, publication 1321-TD001.

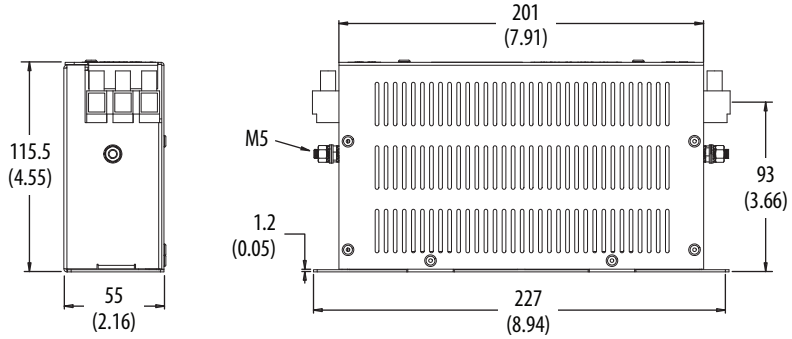
Kinetix 5700 AC Line Filters

The Kinetix 5700 drives were tested by using recommended line filters. Use of these filters is also needed to meet CE requirements. These Bulletin 2198 AC line filters apply to Kinetix 5700 drives used in three-phase operation.

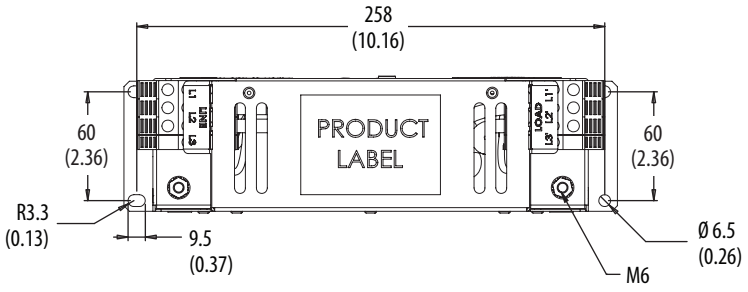
AC Line Filter Dimensions (catalog number 2198-DB20-F)



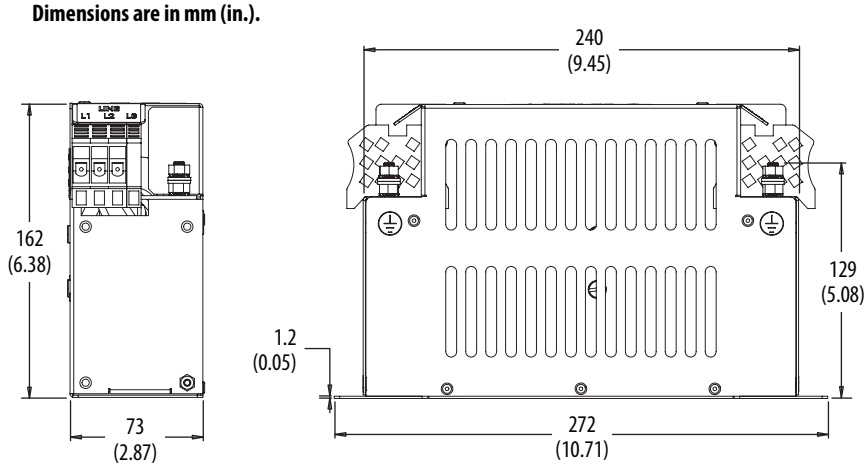
Dimensions are in mm (in.).



AC Line Filter Dimensions (catalog number 2198-DB42-F)

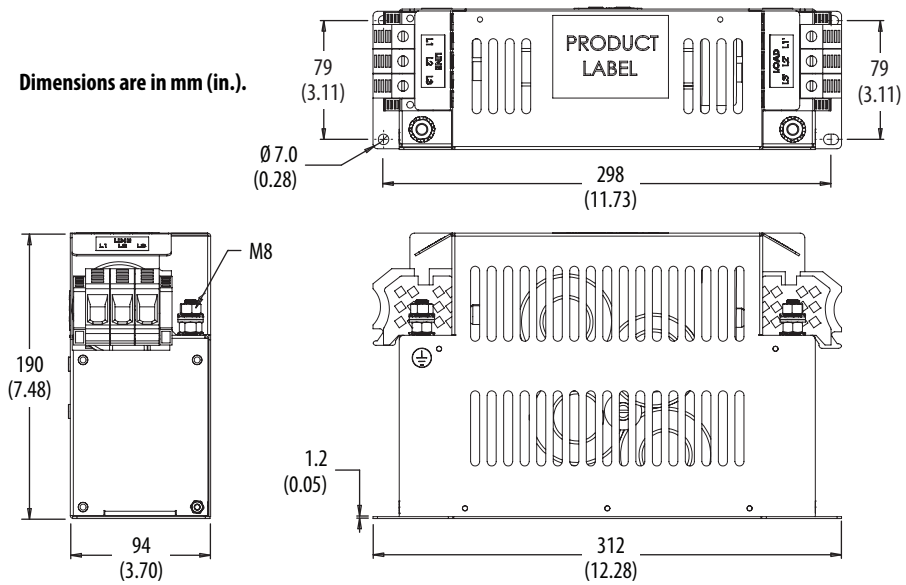


Dimensions are in mm (in.).



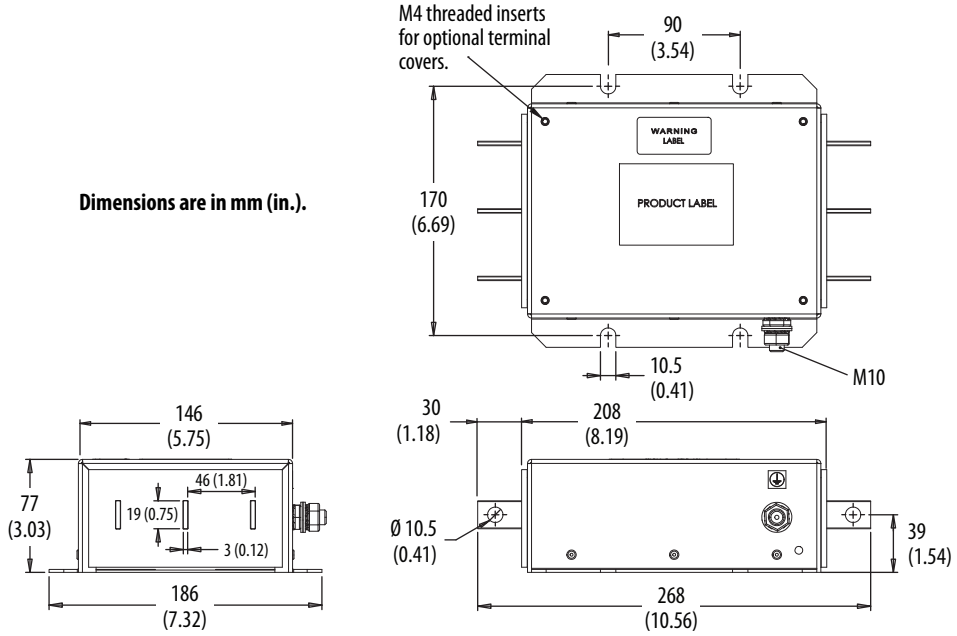
AC Line Filter Dimensions (catalog number 2198-DB80-F)

Dimensions are in mm (in.).



AC Line Filter Dimensions (catalog number 2198-DB290-F)

Dimensions are in mm (in.).



AC Line Filter Specifications

AC Line Filter Cat. No.	Voltage Rating	Current Rating A @ 50 °C (122 °F)	Power Loss W	Leakage Current mA	Weight, approx kg (lb)	Operating Temperature	DC-bus Power Supply Cat. No.
2198-DB20-F	380…480V AC three-phase 50/60 Hz	20	5.1	5.2	1.63 (3.59)	0…50 °C (32…122 °F)	2198-P031
2198-DB42-F		42	14.7	4.0	2.70 (5.95)		2198-P070
2198-DB80-F		80	18.3	13.0	3.95 (8.71)		2198-P141 2198-P208
2198-DB290-F		290	32.7	19.4	4.20 (9.26)		2198-P208 (2 or 3 in parallel)

Shared-bus Connection System

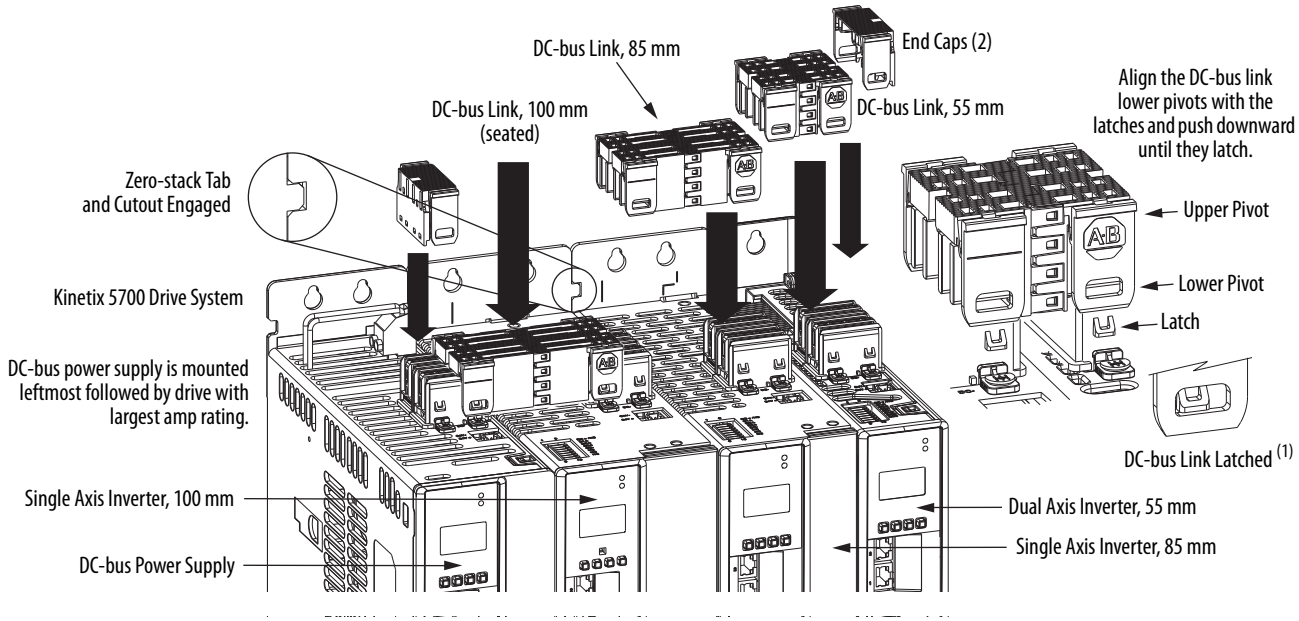
The shared-bus connection system is used to extend DC-bus power and 24V control power from drive-to-drive.

IMPORTANT Use of the DC-bus connection system is required and the zero-stack tab and cutout must be engaged between adjacent drives.

The DC-bus connection system is required and comprised of these two components:

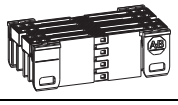
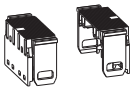
- DC-bus links are inserted between drive modules to extend the DC-bus from drive-to-drive and are included with inverter modules and the iTRAK power supply as indicated in the table below.
- DC-bus end-caps are inserted into the first and last drive modules to cover the exposed DC-bus connector on both ends of the bus and are included with the DC-bus power supplies.

DC-bus Power Connector Example



(1) DC-bus links latch on both sides when inserted into the DC-bus connectors. To remove the DC-bus link, depress both sets of upper pivots to unlatch the lower pivots and hold the DC-bus link firmly while pulling upward.

DC-bus Power Connector Kit Catalog Numbers

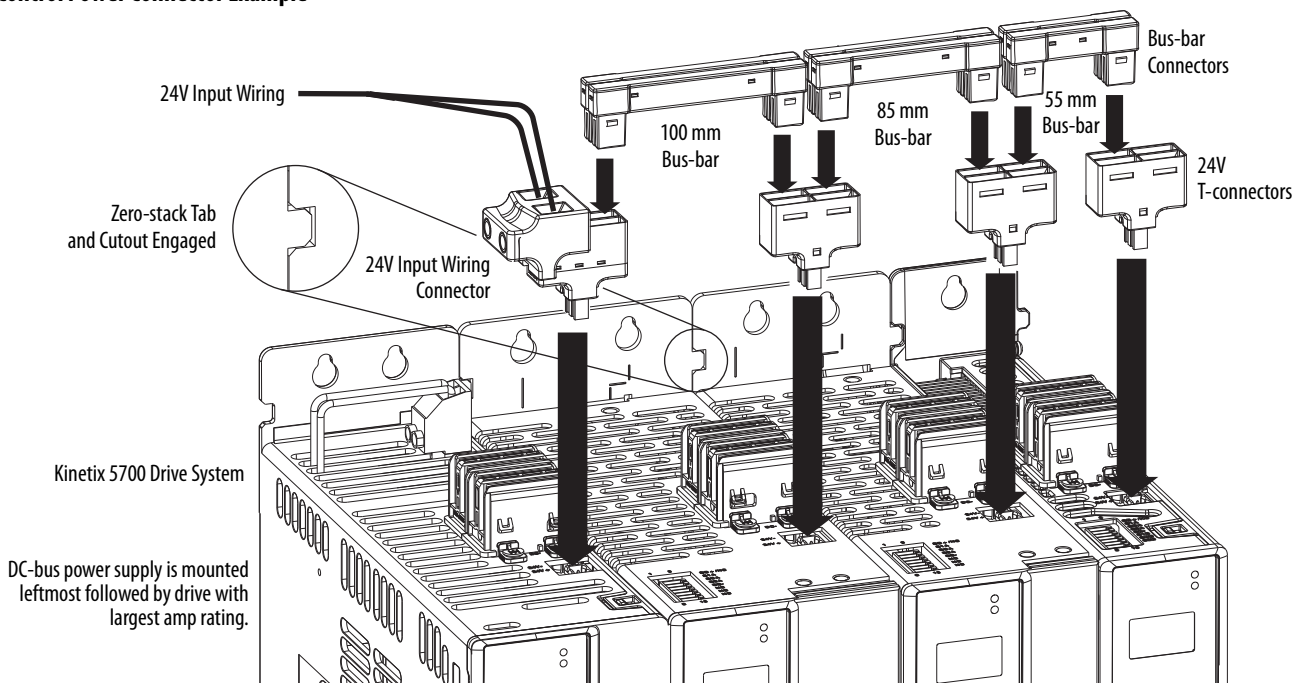
Replacement Kit Cat. No.	Description	Module Type	Module Cat. No.	Illustration
2198-BARCON-55DC200	DC-bus link, 55 mm, 200 A	Dual axis inverter	2198-D006-ERS*x*, 2198-D012-ERS*x* 2198-D020-ERS*x*, 2198-D032-ERS*x* 2198-CAPMOD-2240 2198-CAPMOD-DCBUS-IO	
2198-BARCON-85DC200	DC-bus link, 85 mm, 200 A	Dual axis inverter	2198-D057-ERS*x*	
		Single axis inverter	2198-S086-ERS*x* 2198-S130-ERS*x*	
2198-BARCON-100DC200	DC-bus link, 100 mm, 200 A	Single axis inverter	2198-S160-ERS*x*	
		iTRAK power supply	2198T-W25K-ER	
2198-KITCON-ENDCAP200	DC-bus end caps, 200 A	DC-bus power supply	2198-P031, 2198-P070 2198-P141, 2198-P208	

The 24V control power connection system is optional and comprised of three components:

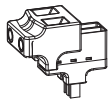
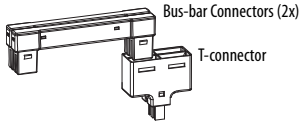
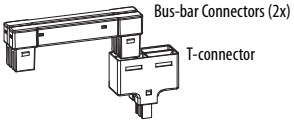
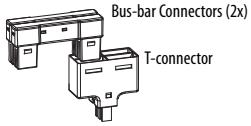
- The 24V input wiring connector that plugs into the DC-bus power supply and receives input wiring for 24V DC.
- 24V DC T-connectors that plug into the drives downstream from the power supply where the 24V control power is shared.
- Bus bars that connect between drives to extend the 24V control power from drive to drive.

IMPORTANT The maximum current rating for the 24V input power connection system is 52 A. If needed, you can insert another 2198-TCON-24VDCIN36 control power input wiring connector at any point in the drive cluster.

Control Power Connector Example



24V Control Power Connector Kit Catalog Numbers

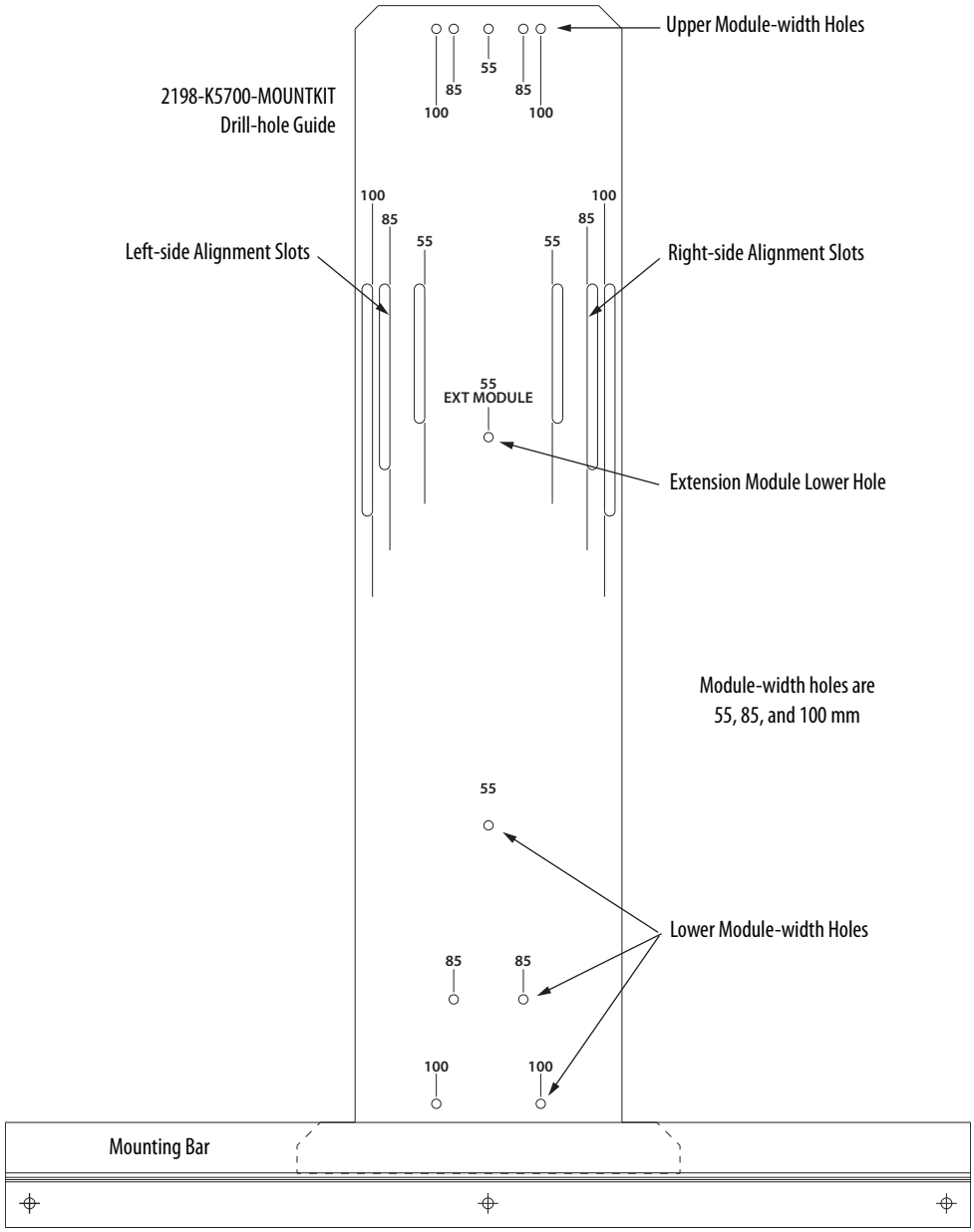
Kit Cat. No.	Description	Module Type	Module Cat. No.	Illustration
2198-TCON-24VDCIN36	Control power input wiring connector	DC-bus power supplies Dual-axis inverters Dual-axis inverters Capacitor module	2198-P*xxx* 2198-D*xxx*-ERS*x* 2198-S*xxx*-ERS*x* 2198-CAPMOD-2240	
2198T-W25K-P-IN		iTRAK power supply	2198T-W25K-ER	
2198T-W25K-P-T	• Control power T-connector • Bus-bar connectors, 100 mm, quantity 2	iTRAK power supply	2198T-W25K-ER	
2198-S160-P-T		Single axis inverter	2198-S160-ERS*x*	
2198-H070-P-T	• Control power T-connector • Bus-bar connectors, 85 mm, quantity 2	Dual axis inverter	2198-D057-ERS*x*	
		Single axis inverters	2198-S086-ERS*x* 2198-S130-ERS*x*	
2198-H040-P-T	• Control power T-connector • Bus-bar connectors, 55 mm, quantity 2	Dual axis inverters	2198-D006-ERS*x* 2198-D012-ERS*x* 2198-D020-ERS*x* 2198-D032-ERS*x* 2198-CAPMOD-2240	

System Mounting Toolkit

The 2198-K5700-MOUNTKIT system mounting toolkit is used to locate the drill-holes for your Kinetix 5700 drive system. Properly spaced drill-holes are essential for engaging the zero-stack tab and cutout from module-to-module so that the DC-bus connectors are spaced properly and accept the DC-bus links. The Kinetix 5700 system mounting toolkit includes the drill-hole guide and mounting bar. Two M4 thread-forming fasteners are also included.

The mounting bar is mounted horizontally on the system panel. The drill-hole guide inserts behind the mounting bar and slides left and right. Holes and slots in the drill-hole guide let you establish the location of each Kinetix 5700 drive module.

Kinetix 5700 System Mounting Toolkit



Universal Feedback Connector Kit

The 2198-K57CK-D15M universal feedback kit passes feedback signals straight through from the encoder to the universal feedback (UFB) connector on the drive. The following encoder feedback types are accepted:

- Hiperface high-resolution absolute (multi-turn and single-turn)
- Heidenhain EnDat high-resolution absolute (digital)
  - EnDat sine/cosine encoders support only RDD-Series™ direct-drive motors (Bulletin RDB)
  - EnDat digital encoders support only third-party motors
- Digital AqB (TTL) and Digital AqB (TTL) with UVW (incremental)
- Sine/Cosine and Sine/Cosine with UVW (incremental)
- Feedback-only, master feedback, or load feedback (absolute single-turn/multi-turn Hiperface)
- Feedback-only, master feedback, or load feedback (incremental)
- Feedback-only, master feedback, or load feedback (generic sine/cosine)

Use the universal feedback connector kit in the following types of installations:

- New installations with Kinetix 5700 servo drives and the compatible motors and actuators
- Existing motor/actuator installations when upgrading with Kinetix 5700 servo drives

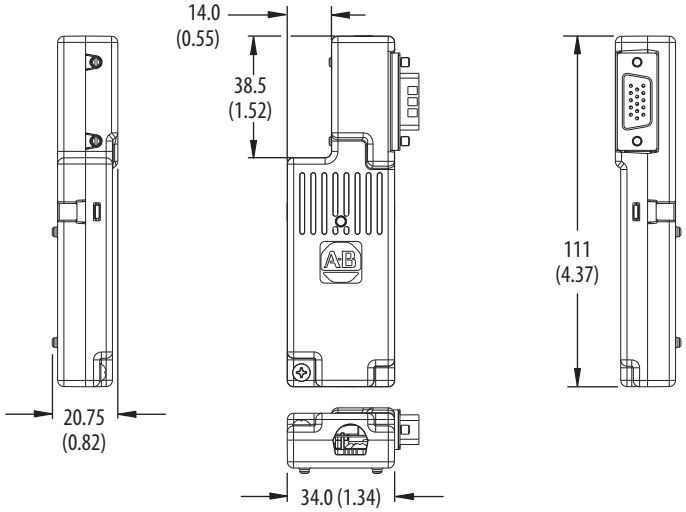
Compatible Allen-Bradley Motors and Actuators

Rotary Motors	Linear Actuators	2090-Series Feedback Cables (3)
Kinetix VP continuous-duty motors (VPC-B*xxxxx*-S and VPC-B*xxxxx*-Y)	LDAT-Series integrated linear thrusters (1)	2090-CFBM7DF-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* (continuous-flex) 2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM7DF-CDAF*xx* (continuous-flex)
MP-Series™ low-inertia motors (Bulletin MPL)		
MP-Series medium-inertia motors (Bulletin MPM)	MP-Series integrated linear stages (Bulletin MPAS) (2)	
MP-Series food-grade motors (Bulletin MPF)	MP-Series multi-axis linear stages (Bulletin MPMA) (2)	
MP-Series stainless-steel motors (Bulletin MPS)	MP-Series electric cylinders (Bulletin MPAR)	
HPK-Series™ asynchronous servo motors	MP-Series heavy-duty electric cylinders (Bulletin MPAI)	
RDD-Series direct-drive motors (Bulletin RDB)	LDC-Series™ iron-core linear motors	

(1) LDAT-Series linear thrusters with absolute high-resolution encoders and incremental encoders are compatible.
(2) Bulletin MPAS and MPMA (ballscrew) linear stages and direct-drive linear stages are compatible.
(3) These are typical feedback cables. Refer to the Kinetix 5700 Servo Drives Design Guide, publication KNX-RM010, for the cables required for specific drive and motor/actuator combinations.

Universal Feedback Connector Kit Dimensions

Dimensions are in mm (in.).



Hiperface-to-DSL Feedback Converter Kit

The 2198-H2DCK Hiperface-to-DSL feedback kit (series B or later) converts 15-pin Hiperface encoder feedback signals to 2-pin DSL feedback signals on the motor feedback (MF) connector. The following feedback types are accepted:

- Hiperface high-resolution absolute multi-turn and single-turn encoders
- Feedback-only, master feedback, or load feedback (absolute single-turn/multi-turn Hiperface)

Use the converter kit for Hiperface auxiliary-encoder feedback in applications that require dual-loop or load feedback when the 15-pin universal feedback (UFB) connector is already in use for a different compatible feedback type.

Compatible Allen-Bradley Motors and Actuators

Rotary Motors	Linear Actuators	2090-Series Feedback Cables (3)
Kinetix VP continuous-duty motors (VPC-B*xxxxx*-Q)	LDAT-Series integrated linear thrusters (1)	2090-CFBM7DF-CEAA*xx* (standard, non-flex) 2090-CFBM7DF-CEAF*xx* (continuous-flex) 2090-XXNFMF-S*xx* (standard, non-flex) 2090-CFBM7DF-CDAF*xx* (continuous-flex)
MP-Series low-inertia motors (Bulletin MPL)		
MP-Series medium-inertia motors (Bulletin MPM)	MP-Series integrated linear stages (Bulletin MPAS) ballscrew (2)	
MP-Series food-grade motors (Bulletin MPF)	MP-Series multi-axis linear stages (Bulletin MPMA) ballscrew (2)	
MP-Series stainless-steel motors (Bulletin MPS)	MP-Series electric cylinders (Bulletin MPAR)	
HPK-Series asynchronous servo motors	MP-Series heavy-duty electric cylinders (Bulletin MPAI)	

(1) LDAT-Series linear thrusters with absolute high-resolution encoders are compatible. Linear stages with incremental encoders are not compatible.
(2) Bulletin MPAS and MPMA (ballscrew) linear stages are compatible. Direct-drive linear stages are not compatible.
(3) These are typical feedback cables. Refer to the Kinetix 5700 Servo Drives Design Guide, publication KNX-RM010, for the cables required for specific drive and motor/actuator combination.

The 2198-H2DCK feedback converter kit can be used to convert Hiperface feedback signals from the motor encoder to DSL feedback signals that are accepted by the motor feedback (MF) connector. Compatible Allen-Bradley rotary motors and linear actuators must have high-resolution absolute encoders. Cable length restrictions also exist, refer to Maximum Motor Cable Lengths on page 14 for more information.

For product dimensions, refer to Hiperface-to-DSL Feedback Converter Kit on page 55.

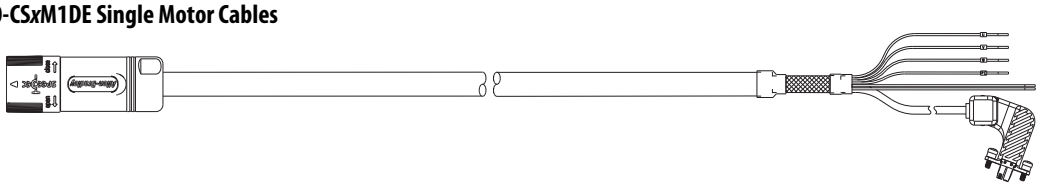
Replacement Parts and Connector Kits - Kinetix 5700 Servo Drives

Replacement parts and kits available for Kinetix 5700 servo drives include the DSL feedback connector kit, power-sharing bus-bars, and power connector sets.

DSL Feedback Connector Kit

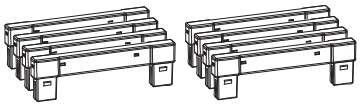
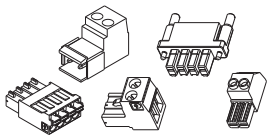
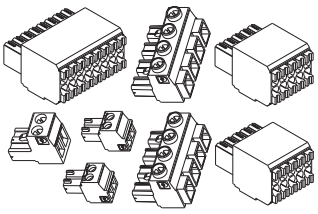
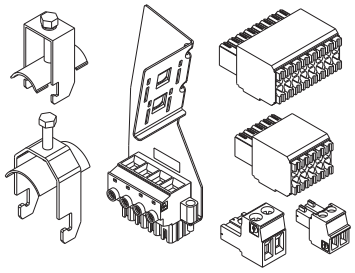
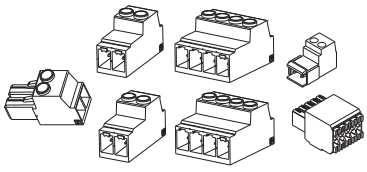
The 2198-KITCON-DSL feedback connector kit is required for making feedback connections from Kinetix VP motors and is included with each 2090-CS*x*M1DE cable. Motor power, brake, and the 2-wire feedback connections are made by using a single 2090-CS*x*M1DE cable. Refer to the Kinetix Motion Accessories Specifications Technical Data, publication KNX-TD004, for cable specifications.

2090-CS*x*M1DE Single Motor Cables



2198-KITCON-DSL Feedback Connector Kit

Power-sharing Bus-bars and Connector Sets

Replacement Kit Cat. No.	Description	Module Type	Module Cat. No.	Illustration
2198-BARCON-55DCAC100	Bus-bar connectors, 55 mm, quantity 8	Dual-axis inverters	2198-D006-ERS*x* 2198-D012-ERS*x* 2198-D020-ERS*x* 2198-D032-ERS*x*	
		Capacitor module	2198-CAPMOD-2240	
2198-BARCON-85DCAC100	Bus-bar connectors, 85 mm, quantity 8	Dual-axis inverters	2198-D057-ERS*x*	
		Single-axis inverters	2198-S086-ERS*x* 2198-S130-ERS*x*	
2198-BARCON-100DC100	Bus-bar connectors, 100 mm, quantity 8	Single-axis inverters	2198-S160-ERS*x*	
		iTRAK power supply	2198T-W25K-ER	
2198-KITCON-P070	• One AC input power (IPD) connector • One 24V input power (CP) connector • One contactor enable (CED) connector • One shunt (RC) connector • One I/O (IOD) connector	DC-bus power supplies	2198-P031 2198-P070	
2198-KITCON-P208			2198-P141 2198-P208	
2198-KITCON-D032	• One 24V input power (CP) connector • Two motor power (MP) connectors • Two motor brake (BC) connectors • Two I/O (IOD) connectors • One Safe Torque Off (STO) connector	Dual-axis inverters	2198-D006-ERS*x* 2198-D012-ERS*x* 2198-D020-ERS*x* 2198-D032-ERS*x*	
2198-KITCON-D057			2198-D057-ERS*x*	
2198-5700-CLAMPSPACER	Two clamp spacers	Dual-axis inverters	2198-D*xxx*-ERS*x*	
2198-KITCON-S160	• One 24V input power (CP) connector • One motor power (MP) connector and clamp bracket • Two motor cable clamps • One motor brake (BC) connector • One I/O (IOD) connector • One Safe Torque Off (STO) connector	Single-axis inverters	2198-S*xxx*-ERS*x*	
2198T-W25K-KITCON	• One 24V input power (CP) connector • Two DC-bus output (IDC) connectors • Two control output (ICP) connectors • One I/O (IOD) connector • One iTRAK PS ready (IR) connector	iTRAK power supply	2198T-W25K-ER	
2198-KITCON-CAPMOD2240	• One stud/lug cover with wires • One stud cover without wires • One bottom plate • One 24V input power (CP) connector • One module status (MS) connector • Two flexible bus-bars • Two lug spacers • Two M8 hex nuts	Capacitor module	2198-CAPMOD-2240