

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-ERSx	1.4 ⁽²⁾	5.5 ⁽³⁾	4.0
	2198-D012-ERSx			
	2198-D020-ERSx			
	2198-D032-ERSx	1.7 ⁽²⁾	7.7 ⁽³⁾	
	2198-D057-ERSx	2.3 ⁽²⁾	8.3 ⁽³⁾	
Single-axis Inverters	2198-S086-ERSx	4.6	9.6 ⁽⁴⁾	4.0
	2198-S130-ERSx			
	2198-S160-ERSx			
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 -ERSx, for example 2198-D057-ERSx, the variable (x) indicates that the inverter (using this example) can be 2198-D057-ERS3 or 2198-D057-ERS4.

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-ERSx	17	29	41	53	65
2198-D012-ERSx	34	58	82	106	130
2198-D020-ERSx	52	84	116	148	180
2198-D032-ERSx	100	155	210	265	320
2198-D057-ERSx	252	354	456	558	660
Single-axis Inverter Cat. No.					
2198-S086-ERSx	190	255	325	400	475
2198-S130-ERSx	225	340	460	590	725
2198-S160-ERSx	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-ERSx 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-ERSx	4.16 (9.17)
2198-D012-ERSx	
2198-D020-ERSx	
2198-D032-ERSx	
2198-D057-ERSx	6.76 (14.9)

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

Accessories - Kinetix 5700 Servo Drives

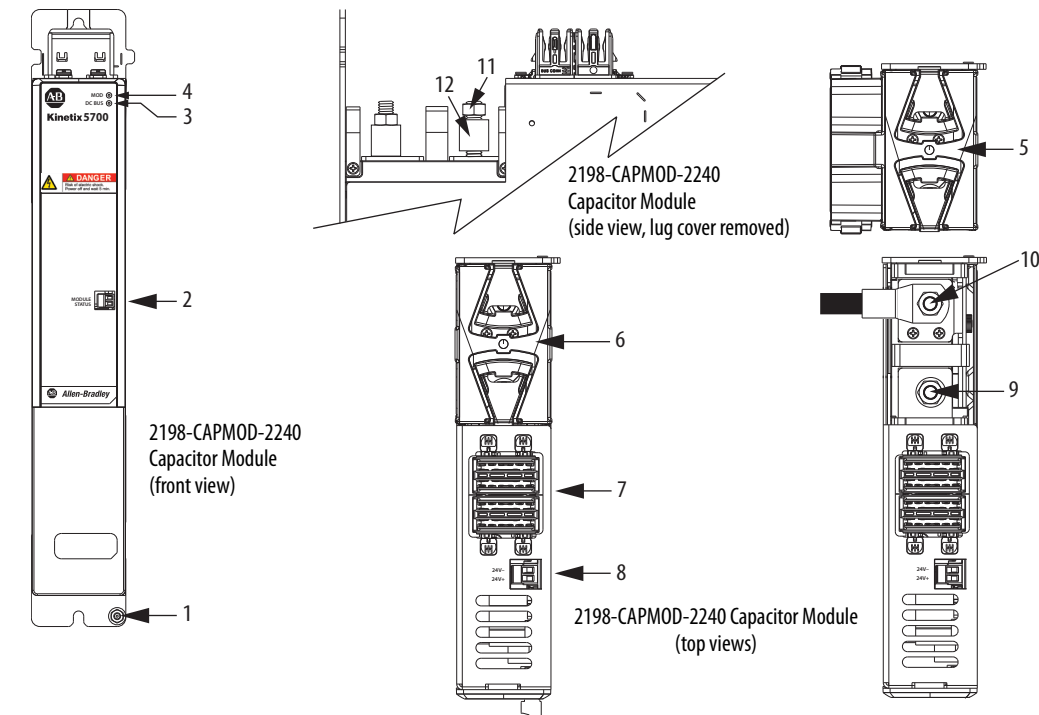
Kinetix 5700 drive accessories include capacitor modules, passive shunt modules, the encoder output module, line reactors, AC line filters, feedback connector kits, the system mounting toolkit, and shared-bus connector kits.

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

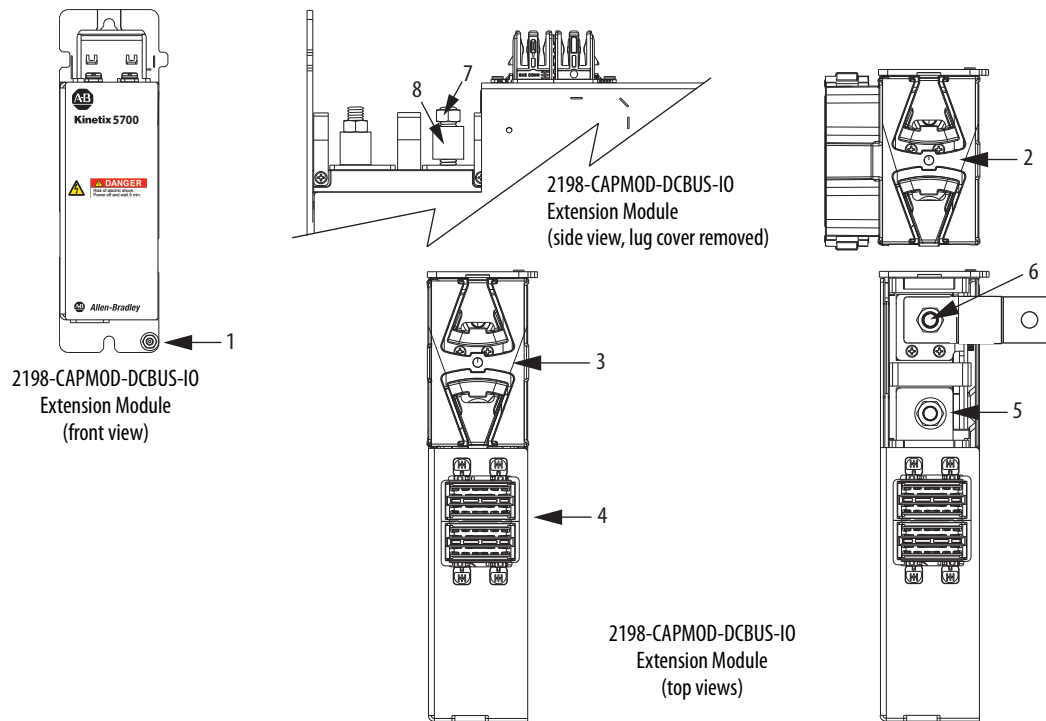


Item	Description
1	Ground stud
2	Module status (MS) connector
3	DC-bus status indicator
4	Module status indicator
5	Stud/lug cover with wires ⁽¹⁾
6	Stud cover without wires

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

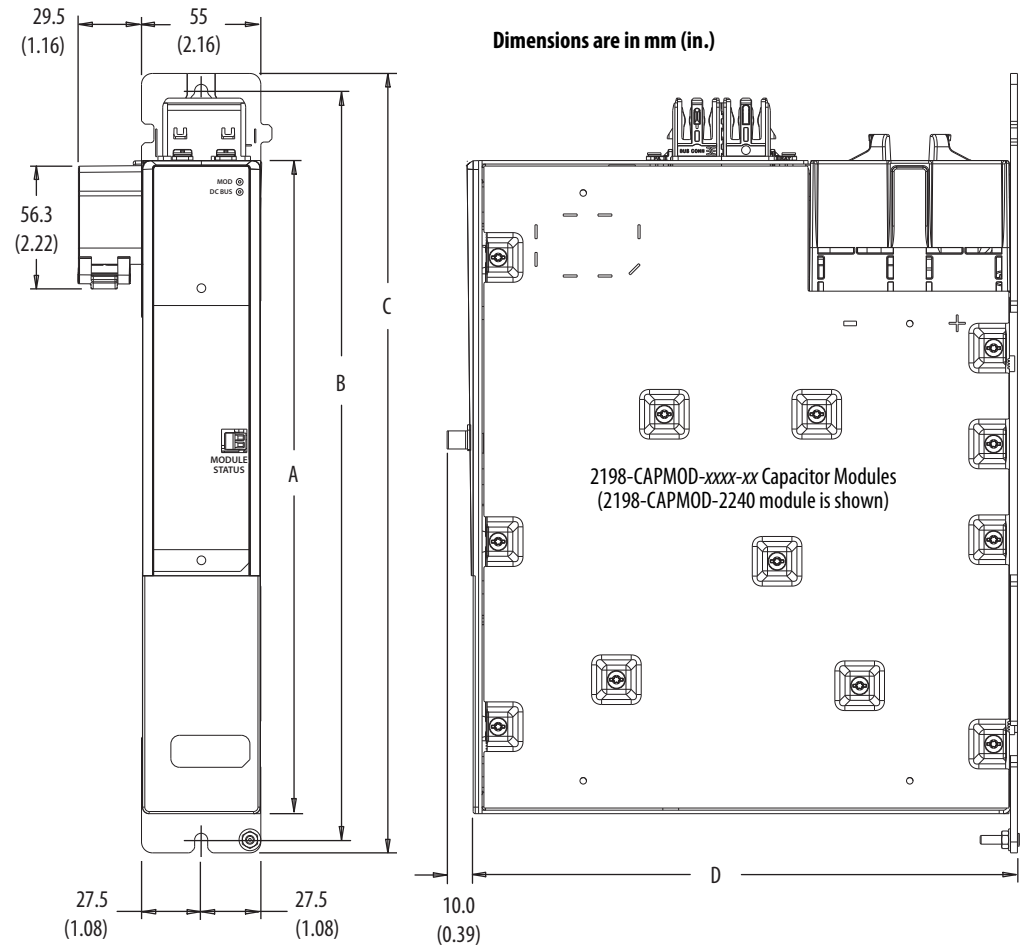
Item	Description
5	DC- M8 stud (external DC-bus)
6	DC+ M8 stud (external DC-bus), shown with flexible bus-bar (2x)
7	M8 hex nut
8	Lug spacer

(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 μ F	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



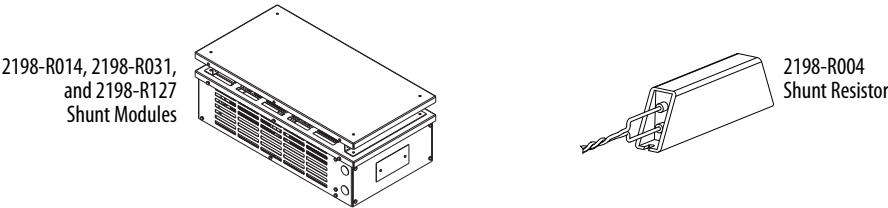
Capacitor Module Cat. No.	A	B ⁽¹⁾	C	D
2198-CAPMOD-2240	300 (11.81)	345 (13.58)	358 (14.09)	253 (10.0)
2198-CAPMOD-DCBUS-IO	131 (5.16)	176 (6.93)	189 (7.44)	248 (9.76)

(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.



Shared-bus Connection System

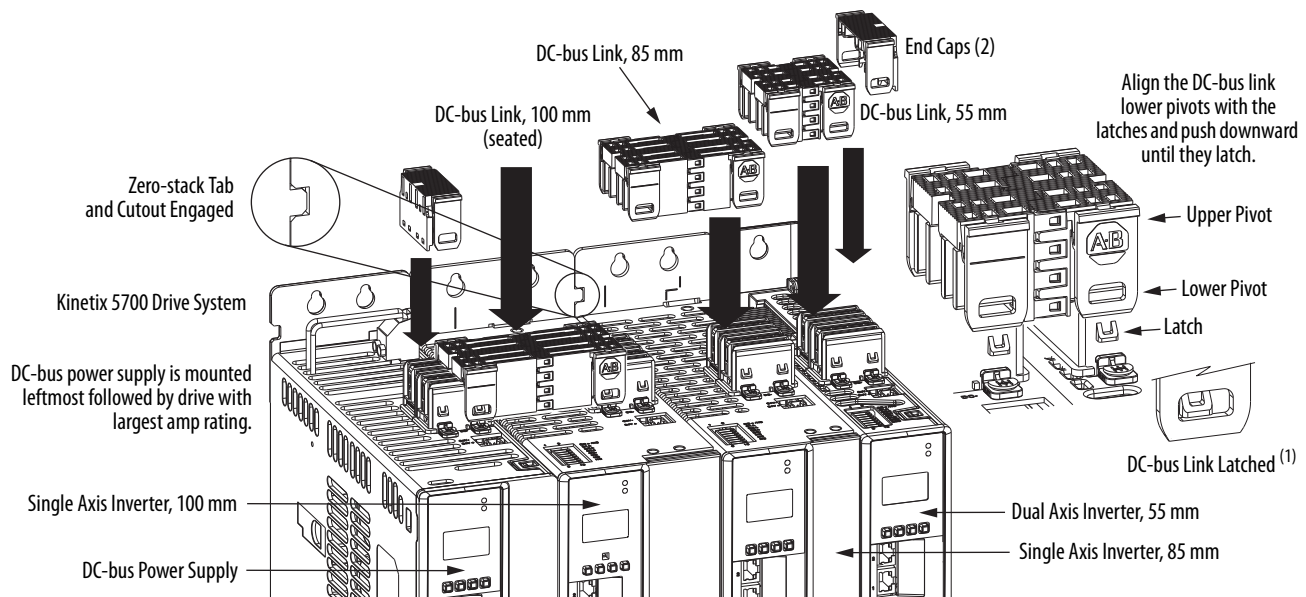
The shared-bus connection system is used to extend DC-bus power and 24V control power from drive-to-drive.

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-ERSx, 2198-D012-ERSx 2198-D020-ERSx, 2198-D032-ERSx 2198-CAPMOD-2240 2198-CAPMOD-DCBUS-I0	
2198-BARCON-85DC200	DC-bus link, 85 mm, 200 A	Dual axis inverter	2198-D057-ERSx	
		Single axis inverter	2198-S086-ERSx 2198-S130-ERSx	
2198-BARCON-100DC200	DC-bus link, 100 mm, 200 A	Single axis inverter	2198-S160-ERSx	
		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	

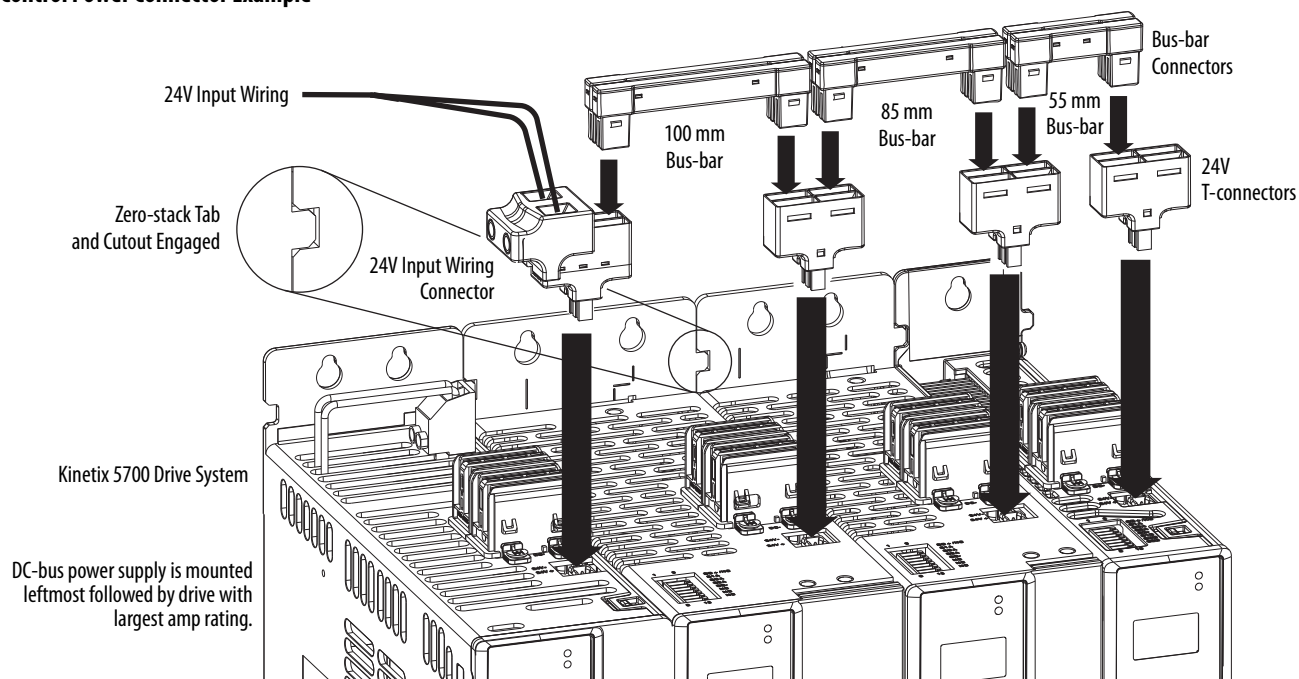
The 24V control power connection system is optional and comprised of three components:

- 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.

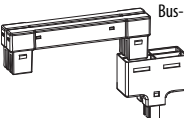
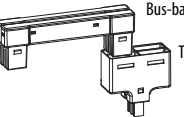
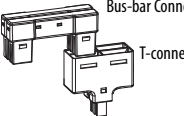
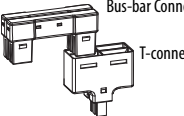
IMPORTANT

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.

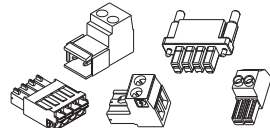
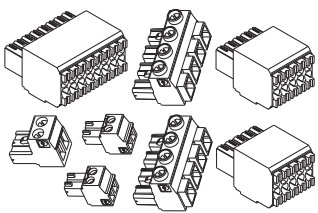
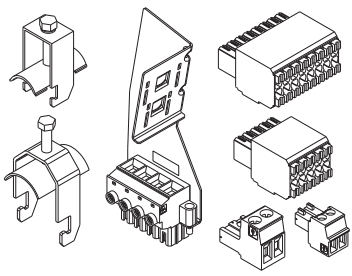
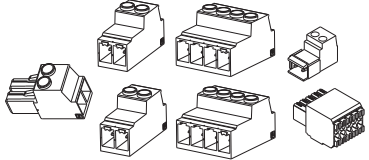
Control Power Connector Example



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	2198-Pxxx	 Control Power Input Connector
2198T-W25K-P-IN		Dual-axis inverters	2198-Dxxx-ERSx	
2198T-W25K-P-T	- Control power T-connector - Bus-bar connectors, 100 mm, quantity 2	Dual-axis inverters	2198-Sxxx-ERSx	 Bus-bar Connectors (2x) T-connector
2198-S160-P-T		Capacitor module	2198-CAPMOD-2240	
2198-H070-P-T	- Control power T-connector - Bus-bar connectors, 85 mm, quantity 2	iTRAK power supply	2198T-W25K-ER	 Bus-bar Connectors (2x) T-connector
		Single axis inverter	2198-S160-ERSx	
2198-H040-P-T	- Control power T-connector - Bus-bar connectors, 55 mm, quantity 2	Dual axis inverter	2198-D057-ERSx	 Bus-bar Connectors (2x) T-connector
		Single axis inverters	2198-S086-ERSx 2198-S130-ERSx	
2198-H040-P-T	- Control power T-connector - Bus-bar connectors, 55 mm, quantity 2	Dual axis inverters	2198-D006-ERSx 2198-D012-ERSx 2198-D020-ERSx 2198-D032-ERSx 2198-CAPMOD-2240	 Bus-bar Connectors (2x) T-connector

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-ERSx 2198-D012-ERSx 2198-D020-ERSx 2198-D032-ERSx	
		Capacitor module	2198-CAPMOD-2240	
2198-BARCON-85DCAC100	Bus-bar connectors, 85 mm, quantity 8	Dual-axis inverters	2198-D057-ERSx	
		Single-axis inverters	2198-S086-ERSx 2198-S130-ERSx	
2198-BARCON-100DC100	Bus-bar connectors, 100 mm, quantity 8	Single-axis inverters	2198-S160-ERSx	
		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-ERSx 2198-D012-ERSx 2198-D020-ERSx 2198-D032-ERSx	
2198-KITCON-D057			2198-D057-ERSx	
2198-5700-CLAMPSPACER	Two clamp spacers	Dual-axis inverters	2198-Dxxx-ERSx	
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-Sxxx-ERSx	
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	