Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

Kinetix 5300 Single-axis EtherNet/IP Servo Drives

Catalog Numbers 2198-C1004-ERS, 2198-C1007-ERS, 2198-C1015-ERS, 2198-C1020-ERS, 2198-C2030-ERS, 2198-C2055-ERS, 2198-C2075-ERS, 2198-C4004-ERS, 2198-C4007-ERS, 2198-C4015-ERS, 2198-C4020-ERS, 2198-C4030-ERS, 2198-C4055-ERS, 2198-C4075-ERS

Summary of Changes

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

Topic	Page
Added specifications per EU and UK Ecodesign, including efficiency class to the additional resources table	14

About the Kinetix 5300 Drives

Kinetix® 5300 servo drives provide an Integrated Motion over the EtherNet/IP network solution for applications with continuous 3-phase output power and current requirements in the range of 0.72...14.7 kW and 2.3...67.5 A 0-pk, respectively.

See the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, for detailed information on wiring, applying power, troubleshooting, and integration with ControlLogix® 5570, ControlLogix 5580, CompactLogix™ 5370, or CompactLogix 5380 controllers, and Studio 5000 Logix Designer® application.

Rockwell Automation

Catalog Number Explanation

This publication applies to the following Kinetix 5300 servo drives.

Kinetix 5300 Drive Catalog Numbers

Cat. No.	Frame Size	Input Voltage [1]	Continuous Output Power kW	Continuous Output Current A (rms)	Continuous Output Current A (0-pk)
2198-C1004-ERS	1	85...132V rms single-phase 170...253V rms single-phase 170...253V rms three-phase	0.22 0.46 0.72	2.8	4.0
2198-C1007-ERS	1		0.36 0.76 1.18	4.6	6.5
2198-C1015-ERS	2		0.67 1.41 2.18	8.5	12.0
2198-C1020-ERS	2		0.97 2.02 3.13	12.2	17.3
2198-C2030-ERS	2	170...253V rms three-phase	5.02	19.6	27.7
2198-C2055-ERS	3		10.30	40.2	56.9
2198-C2075-ERS	3		12.22	47.7	67.5
2198-C4004-ERS	1	342...528V rms three-phase	0.86	1.6	2.3
2198-C4007-ERS	1		1.55	2.9	4.1
2198-C4015-ERS	2		2.78	5.2	7.4
2198-C4020-ERS	2		3.90	7.3	10.3
2198-C4030-ERS	2		6.25	11.7	16.5
2198-C4055-ERS	3		12.08	22.6	32.0
2198-C4075-ERS	3		14.70	27.5	38.9

(1) Nominal input voltage rating (110, 230, or 480V rms) is required to achieve full power.

Before You Begin

Remove all packing material, wedges, and braces from within and around the components. After unpacking, check the item nameplate catalog number against the purchase order.

The Kinetix 5300 servo drives include the following:

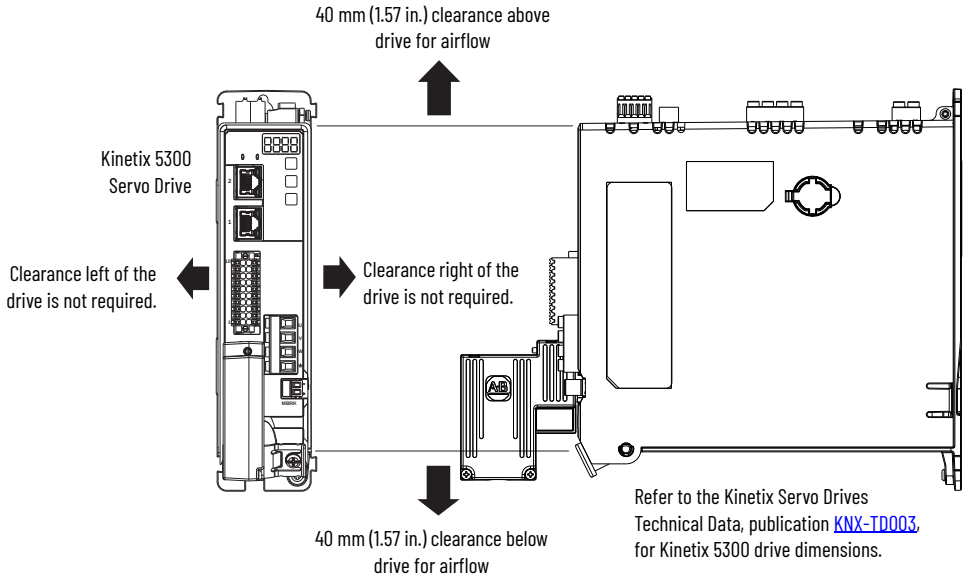
- Wiring-plug connector set for AC input power, 24V control input power, digital inputs/auxiliary feedback, motor power, motor brake, shunt (installed and wired to the internal shunt), and safe torque-off (STO) connector. Spare shunt wiring plug for optional external shunt.
- Clamp spacer for motor shield clamp
- The frame 3 clamping plate, for cables too large to fit within the standard shield clamp
- These installation instructions, publication 2198-IN021

Replacement connector sets are also available. See the Kinetix 5700, 5500, 5300, and 5100 Servo Drives Specifications, publication KNX-TD003, for more information.

Mount the Kinetix 5300 Drive

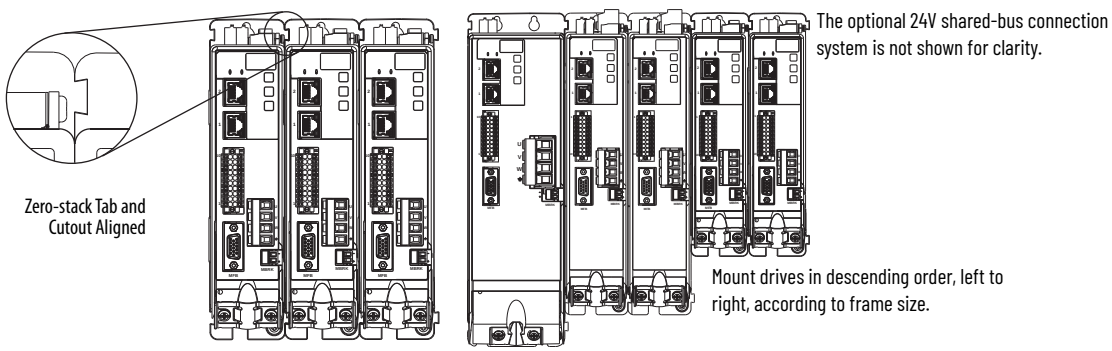
Follow these steps to mount the drive in single-axis configurations.

1. Observe these clearance requirements when mounting a single drive to the panel:
   - Additional clearance is required for cables and wires connected to the top of the drive.
   - Additional clearance is required if other devices are installed above and/or below the drive and have clearance requirements of their own.
   - Additional clearance left and right of the drive is required when mounted adjacent to noise sensitive equipment or clean wire ways.
   - The recommended minimum cabinet depth is 300 mm (11.81 in.).



IMPORTANT Mount the drive in an upright position as shown to provide proper air flow. Do not mount the drive on its side. Mount drives in descending order, left to right, according to frame size.

Drives can be spaced by aligning the zero-stack tab and cutout. For the zero-stack feature to engage properly (when more than one frame size exists in the drive system) frame 3 drives must mount left of frame 1 or 2 drives, and frame 2 drives must mount left of frame 1 drives. For additional mounting and 24V shared-bus information, refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005.

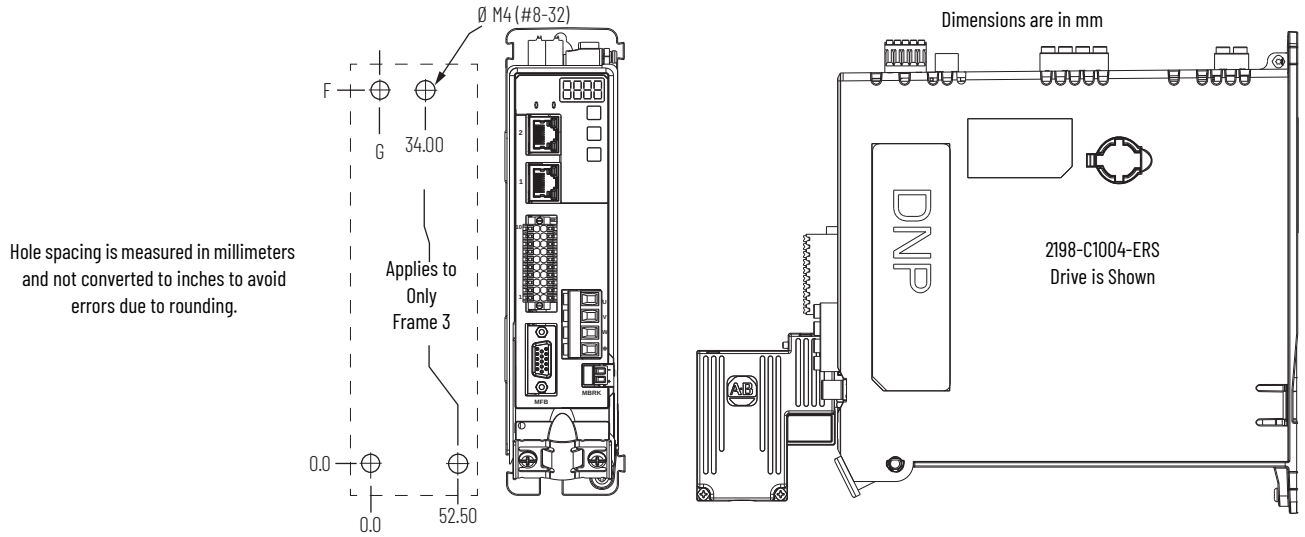


2. Mount the Kinetix 5300 drive to the cabinet subpanel with M4 (#8-32) steel machine screws torqued to 2.0 N•m (17.7 lb•in) max.

Product Dimensions

Included in this figure are the drill hole patterns for standalone drives. Refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, for multi-axis drill-hole patterns.

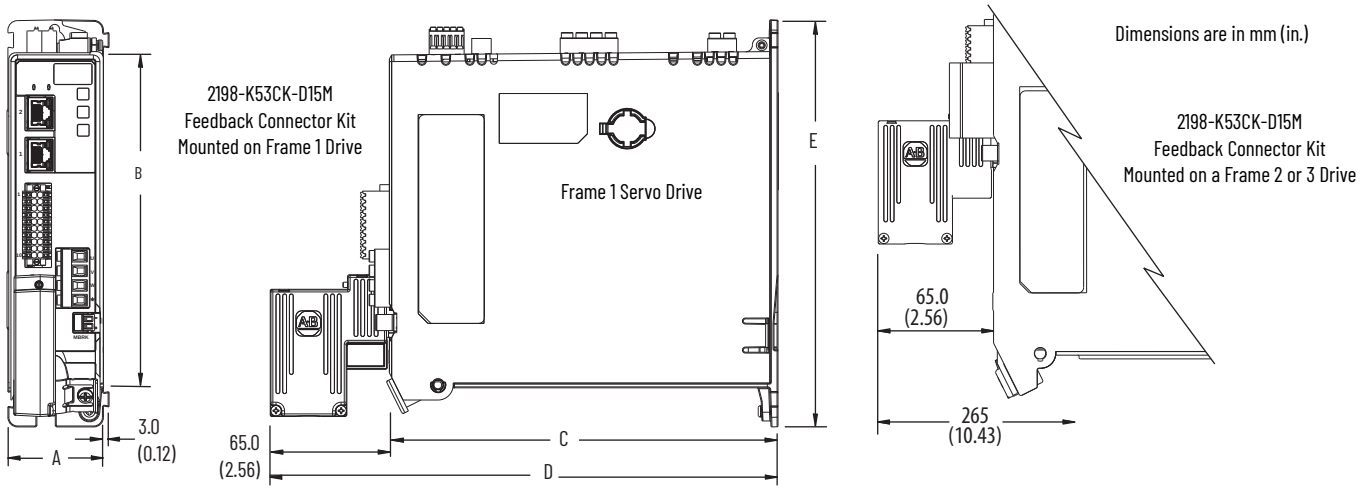
Kinetix 5300 Drives with 2198-K53CK-D15M Connector Kit



Kinetix 5300 Drive Cat. No.	Frame	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	Drill Hole Patterns[1] F mm	Drill Hole Patterns[1] G mm
2198-C1004-ERS	1	50 (1.97)	175 (6.89)	204 (8.03)	265 (10.43)	215 (8.46)	193.68	4.51
2198-C1007-ERS								
2198-C4004-ERS								
2198-C4007-ERS								
2198-C1015-ERS	2	55 (2.16)	225 (8.86)			265 (10.43)	243.84	5.00
2198-C1020-ERS								
2198-C2030-ERS								
2198-C4015-ERS								
2198-C4020-ERS								
2198-C4030-ERS								
2198-C2055-ERS	3	85.2 (3.35)	250 (9.84)			294 (11.57)	273.70	0.0
2198-C2075-ERS								
2198-C4055-ERS								
2198-C4075-ERS								

(1) Hole spacing is measured in millimeters and not converted to inches to avoid errors due to rounding.

Kinetix 5300 Drives with 2198-K53CK-D15M Connector Kit

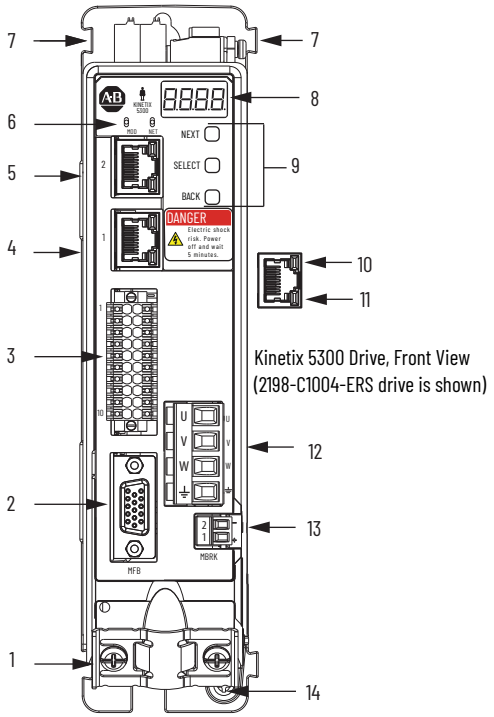


Refer to Kinetix Servo Drives Technical Data, publication KNX-TD003, for motor/actuator compatibility with the 2198-K53CK-D15M connector kit and product dimensions.

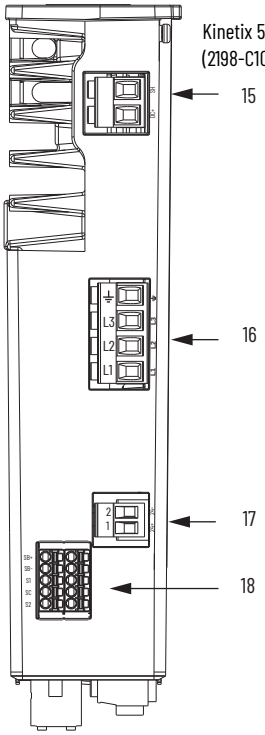
Connector Data

Use these illustrations to identify the Kinetix 5300 drive features and indicators.

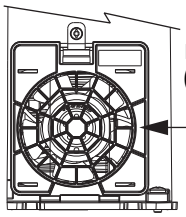
Kinetix 5300 Drive Features and Indicators



Kinetix 5300 Drive, Front View
(2198-C1004-ERS drive is shown)

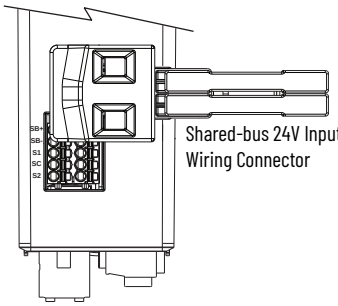


Kinetix 5300, Top View
(2198-C1004-ERS drive is shown)



Kinetix 5300, Bottom View
(frame 2 and 3 drives only)

Cooling Fan



Shared-bus 24V Input
Wiring Connector

Item	Description
1	Motor cable shield clamp
2	Motor feedback (MFB) connector
3	Digital inputs and auxiliary feedback connector
4	Ethernet (PORT1) RJ45 connector
5	Ethernet (PORT2) RJ45 connector
6	Module and Network status indicators

Item	Description
7	Zero-stack mounting tab/cutout
8	Four-character status display
9	Navigation pushbuttons
10	Link speed status indicators
11	Link/Activity status indicators
12	Motor power connector

Item	Description
13	Motor brake connector
14	Ground terminal
15	Shunt resistor connector
16	AC input power connector
17	24V control input power connector
18	Safe torque-off (STO) connector

These procedures assume that you have prepared your panel and understand how to bond your system. For installation instructions regarding equipment and accessories not included here, refer to the instructions that came with those products.

SHOCK HAZARD: To avoid hazard of electrical shock, perform all mounting and wiring of the Kinetix 5300 drive prior to applying power. Once power is applied, connector terminals can have voltage present even when not in use.

ATTENTION: Plan the installation of your system so that you can perform all cutting, drilling, tapping, and welding with the system removed from the enclosure. Because the system is of the open type construction, be careful to keep any metal debris from falling into it. Metal debris or other foreign matter can become lodged in the circuitry and result in damage to components.

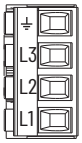
Kinetix 5300 Drive Connectors

Description	Connector
AC input power	4-position plug, terminal screws
24V control input power	2-position plug, terminal screws
Shunt power	2-position plug, terminal screws
Motor power	4-position plug, terminal screws

Description	Connector
Motor feedback (MFB)	15-position plug
Brake power (MBRK)	2-position plug, terminal screws
Digital inputs / Auxiliary feedback	20-position plug, spring terminals
Safe torque-off (STO)	10-position plugs, spring terminals, 2x (2 rows of 5 pins)
Ethernet communication ports	RJ45 Ethernet

Main Input Power Connector

Pin	Description	Signal
⏚	Chassis ground	⏚
L3	Three-phase input power	L3
L2		L2
L1		L1



Shunt Power Connector Pinout

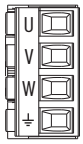
Pin	Description	Signal
–	Shunt connections	DC+
–		SH

Control Input Power Connector Pinout

Pin	Description	Signal
1	24V power supply, customer-supplied	24V+
2	24V common	24V-

Motor Power Connector Pinout

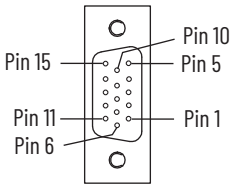
Pin	Description	Signal
U	Three-phase motor power	U
V		V
W		W
⏚	Chassis ground	⏚



Motor Feedback (MFB) Connector Pinout

MFB Pin	Description	Signal
1	Sine differential input + A differential input +	MTR_SIN+ MTR_AM+
2	Sine differential input – A differential input –	MTR_SIN– MTR_AM–
3	Cosine differential input + B differential input +	MTR_COS+ MTR_BM+
4	Cosine differential input – B differential input –	MTR_COS– MTR_BM–
5	Data differential input/output + Index differential input +	MTR_DATA+ MTR_IM+
6	Encoder common	MTR_ECOM
7	Encoder 9V power output	MTR_EPWR9V (2)
8	Hall commutation S3 input	MTR_S3

MFB Pin	Description	Signal
9	Reserved	–
10	Data differential input/output – Index differential input –	MTR_DATA– MTR_IM–
11	Motor thermostat (normally closed) (1)	MTR_TS
12	Hall commutation S1 input	MTR_S1
13	Hall commutation S2 input	MTR_S2
14	Encoder 5V power output	MTR_EPWR5V (2)
15	Reserved	–



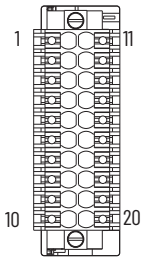
(1) Not applicable unless motor has integrated thermal protection.
(2) Determine which power supply your encoder requires and connect to only the specified supply. Do not make connections to both supplies.

Motor Brake (MBRK) Connector Pinout

MBRK Pin	Description	Signal
1	Motor brake connections	MBRK+
2		MBRK-

Digital Inputs and Auxiliary Feedback Connector Pinout

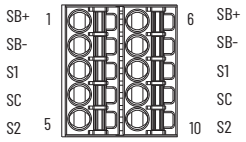
Pin	Description	Signal
1	24V current-sinking fast input #1	IN1
2	I/O common for customer-supplied 24V supply	COM
3	24V current-sinking fast input #2	IN2
4	I/O common for customer-supplied 24V supply	COM
5	I/O cable shield termination point	SHLD
6	Channel AM Differential Input +	AM+
7	Channel BM Differential Input +	BM+
8	Channel IM Differential Input +	IM+
9	Encoder 5V power output	EPWR_5V
10	Auxiliary feedback cable shield termination point	SHLD



Pin	Description	Signal
11	24V current-sinking fast input #3	IN3
12	I/O common for customer-supplied 24V supply	COM
13	24V current-sinking fast input #4	IN4
14	I/O common for customer-supplied 24V supply	COM
15	I/O cable shield termination point	SHLD
16	Channel AM Differential Input –	AM–
17	Channel BM Differential Input –	BM–
18	Channel IM Differential Input –	IM–
19	Auxiliary common	AUX_COM
20	Auxiliary feedback cable shield termination point	SHLD

Safe Torque-off (STO) Connector Pinout

STO Pin(1)	Description	Signal
1 / 6	Safety bypass plus signal. Connect to both safety inputs to disable the STO function	SB+
2 / 7	Safety bypass minus signal. Connect to safety common to disable the STO function	SB-
3 / 8	STO input 1 (SS_IN_CH0)	S1
4 / 9	STO input common (SCOM)	SC
5 / 10	STO input 2 (SS_IN_CH1)	S2



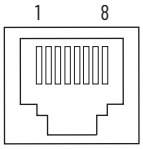
(1) STO is enabled by default, with no terminations. Refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, to wire safe torque off bypass jumper or to wire to the upstream relay as required.

The 2198-C*xxxx*-ERS drives ship with the safe torque-off function enabled. Connect the safe torque-off inputs to a safety circuit or install bypass wiring to enable motion. Refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, for more information.

Ethernet Communication PORT1 and PORT2 Pinout

Port Pin	Description	Signal
1	Transmit port (+) data terminal	TD+
2	Transmit port (-) data terminal	TD–
3	Receive port (+) data terminal	RD+
4	–	–
5	–	–
6	Receive port (–) data terminal	RD–
7	–	–
8	–	–

Standard RJ45



Wiring Requirements

Wire must be copper with 75 °C (167 °F) minimum rating. Phasing of AC input power is arbitrary and earth ground connection is required for safe and proper operation.

Refer to Kinetix 5300 Single-axis EtherNet/IP Servo Drives User Manual, publication 2198-UM005, for interconnect diagrams.

IMPORTANT The National Electrical Code and local electrical codes take precedence over the values and methods provided.

ATTENTION: To avoid personal injury and/or equipment damage, observe the following:
- Make sure installation complies with specifications regarding wire types, conductor sizes, branch circuit protection, and disconnect devices. The National Electrical Code (NEC) and local codes outline provisions for safely installing electrical equipment.
- Use motor power connectors only for connection purposes. Do not use them to turn the unit on and off.
- Ground shielded power cables to prevent potentially high voltages on the shield.

Kinetix 5300 Drive Power and I/O Wiring Requirements

Kinetix 5300 Drive Cat. No.	Description	Connects to Terminals		Wire Size mm² (AWG)	Strip Length mm (in.)	Torque Value N•m (lb•in)
		Pin	Signal			
2198-C1004-ERS 2198-C1007-ERS 2198-C1015-ERS 2198-C1020-ERS 2198-C4004-ERS 2198-C4007-ERS 2198-C4015-ERS 2198-C4020-ERS 2198-C4030-ERS	AC input power	L1 L2 L3 ⏚	L1 L2 L3 ⏚	0.2…2.5 (24…12)	8.0 (0.31)	0.5…0.6 (4.4…5.3)
2198-C2030-ERS				0.2 … 6.0 (24 … 10)	10.0 (0.39)	0.5 … 0.6 (4.4 … 5.3) (1)
2198-C2055-ERS 2198-C2075-ERS 2198-C4055-ERS 2198-C4075-ERS				0.75…16 (18…6)	12.0 (0.47)	1.7 … 1.8 (15.0…15.9)
2198-C1004-ERS 2198-C1007-ERS 2198-C1015-ERS 2198-C1020-ERS 2198-C4004-ERS 2198-C4007-ERS 2198-C4015-ERS 2198-C4020-ERS 2198-C4030-ERS	Motor power	⏚ W V U	⏚ W V U	Motor power cable depends on motor/drive combination. 0.2…2.5 (24…12)	8.0 (0.31)	0.5…0.6 (4.4…5.3)
2198-C2030-ERS				0.2 … 6.0 (24 … 10)	10.0 (0.39)	0.5 … 0.6 (2) (4.4 … 5.3)
2198-C2055-ERS 2198-C2075-ERS 2198-C4055-ERS 2198-C4075-ERS				0.75…16 (18…6)	12.0 (0.47)	1.7 … 1.8 (15.0…15.9)

Kinetix 5300 Drive Power and I/O Wiring Requirements

Kinetix 5300 Drive Cat. No.	Description	Connects to Terminals		Wire Size mm^2 (AWG)	Strip Length mm (in.)	Torque Value N•m (lb•in)
		Pin	Signal			
2198-C1004-ERS 2198-C1007-ERS 2198-C1015-ERS 2198-C1020-ERS 2198-C2030-ERS 2198-C2055-ERS 2198-C2075-ERS 2198-C4004-ERS 2198-C4007-ERS 2198-C4015-ERS 2198-C4020-ERS 2198-C4030-ERS 2198-C4055-ERS 2198-C4075-ERS	PELV 24V power (2) (single-axis connector)	1 2	24V+ 24V-	0.2…2.5 (24…12)	7.0 (0.28)	0.5…0.6 (4.4…5.3)
	Brake power	1 2	MBRK+ MBRK-	0.14…1.5 (28…16) (3)		0.22…0.25 (1.9…2.2)
	Shunt resistor	—	DC+ SH	0.2…2.5 (24…12)	8.0 (0.31)	0.5…0.6 (4.4…5.3)
	Safety	STO-1/6 STO-2/7 STO-3/8 STO-4/9 STO-5/10	SB+ SB- S1 SC S2	0.2…1.5 (24…16)	10.0 (0.39)	N/A (4)
	Digital inputs and Auxiliary feedback	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	IN1 COM IN2 COM SHLD AUX_AM+ AUX_BM+ AUX_IM+ Reserved SHLD IN3 COM IN4 COM SHLD AUX_AM- AUX_BM- AUX_IM- EPWR_5V SHLD	0.2…1.5 (24…16)	10.0 (0.39)	N/A (4)

(1) For 10 AWG conductors, use 0.7…0.8 N•m (6.2…7.1 lb•in) of torque.
(2) The wire size, strip length, and torque specifications shown here apply to the single-axis connector that ships with the drive. For the shared-bus connector specifications, refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005.
(3) Motor brake wires are part of the Kinetix 2090 motor cable.
(4) This connector uses spring tension to hold wires in place.

See Kinetix Rotary and Linear Motion Cable Specifications Technical Data, publication KNX-TD004, for cable specifications.

Attach the Motor Cable Shield Clamp

A shield clamp and two screws are supplied with each Kinetix 5300 drive. Use the clamp to bond the motor cable shield-braid to chassis ground.

IMPORTANT
- Loosen the screw, if needed, until you can start threading both clamp screws with the cable shield under the clamp.
- Make sure the cable clamp tightens around the cable shield and provides a high-frequency bond between the cable shield and the drive chassis.

Allen-Bradley Motors and Actuators

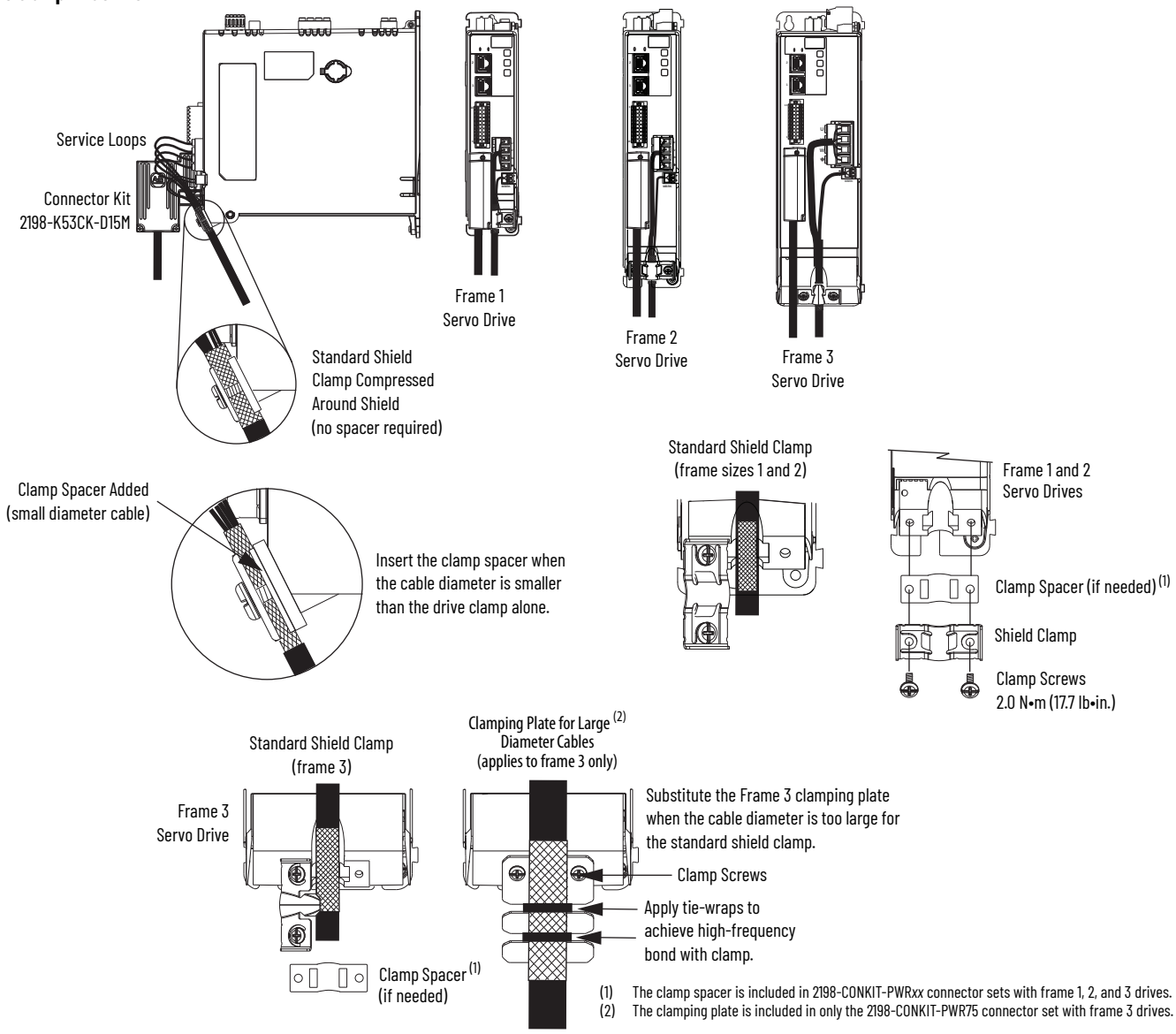
A clamp spacer is included with the drive for motor power/brake cable diameters that are too small for a tight fit within the drive clamp alone. A clamping plate is provided with frame 3 drives for cables too large to fit within the standard shield clamp.

IMPORTANT If the power/brake cable shield has a loose fit inside the shield clamp, insert the clamp spacer between the shield clamp and the drive to reduce the clamp diameter. When the clamp screws are tight, 2.0 N•m (17.7 lb•in), the result must be a high-frequency bond between the cable shield and the drive chassis.

If the frame 3 cable is too large to fit within the standard shield clamp, substitute the standard clamp for the frame 3 clamping plate. The standard shield clamp screws are reused on the frame 3 clamping plate.

Apply two tie-wraps around the cable shield and clamping plate, to provide a high-frequency bond between the cable shield and the drive chassis.

Cable Clamp Attachment



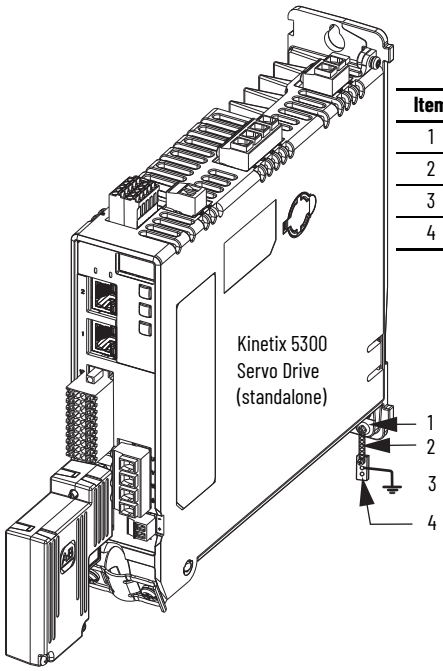
(1) The clamp spacer is included in 2198-CONKIT-PWR*xx* connector sets with frame 1, 2, and 3 drives.
(2) The clamping plate is included in only the 2198-CONKIT-PWR75 connector set with frame 3 drives.

Refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, for detailed information on wiring the 2198-K53CK-D15M feedback connector kit and attaching the motor power/brake shield clamp.

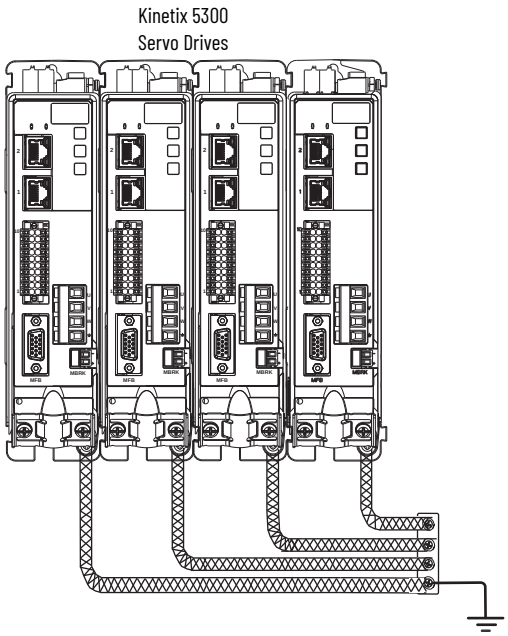
Ground Your Kinetix 5300 Drive to the Subpanel

Ground Kinetix 5300 drives to a bonded cabinet ground bus with a braided ground strap. Keep the braided ground strap as short as possible for optimum bonding.

Connecting the Braided Ground Strap



Item	Description
1	Ground screw (green) 2.0 N•m (17.5 lb•in) max
2	Braided ground strap (customer supplied)
3	Ground grid or power distribution ground
4	Bonded cabinet ground bus (customer supplied)



Refer to the System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001, for more information.

Circuit Breaker/Fuse Selection

The Kinetix 5300 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, UL applications), 10,000 A (miniature circuit breakers), and 65,000 A (molded-case circuit breakers).

Kinetix 5300 UL/CSA Circuit Protection Specifications

Drive Cat. No.	AC Input Voltage, nom	Phase	Bussmann Fuses Cat. No.	Molded Case CB Cat. No.
2198-C1004-ERS	200...240V AC	Three phase	KTK-R-6	140U-D6D3-B40 140UT-D7D3-B40
2198-C1007-ERS			KTK-R-10	140U-D6D3-B80 140UT-D7D3-B80
2198-C1015-ERS			KTK-R-15	140U-D6D3-C12 140UT-D7D3-C12
2198-C1020-ERS			KTK-R-25	140U-D6D3-C20 140UT-D7D3-C20
2198-C2030-ERS			KTK-R-30	140U-D6D3-C30 140UT-D7D3-C30
2198-C2055-ERS			LPJ-50SP	140G-G6C3-C50
2198-C2075-ERS			LPJ-60SP	140G-G6C3-C60
2198-C4004-ERS	380...480V AC		KTK-R-3	140U-D6D3-B20 140UT-D7D3-B20
2198-C4007-ERS			KTK-R-6	140U-D6D3-B40 140UT-D7D3-B40
2198-C4015-ERS			KTK-R-12	140U-D6D3-B80 140UT-D7D3-B80
2198-C4020-ERS			KTK-R-15	140U-D6D3-C12 140UT-D7D3-C12
2198-C4030-ERS			KTK-R-25	140U-D6D3-C15 140UT-D7D3-C15
2198-C4055-ERS			LPJ-30SP	140U-D6D3-C30 140UT-D7D3-C30
2198-C4075-ERS			LPJ-35SP	140U-D6D3-C30 140UT-D7D3-C30
2198-C1004-ERS	100...120V AC	Single phase	KTK-R-6	140U-D6D2-B40 140UT-D7D2-B40
2198-C1007-ERS			KTK-R-10	140U-D6D2-B80 140UT-D7D2-B80
2198-C1015-ERS			KTK-R-15	140U-D6D2-C12 140UT-D7D2-C12
2198-C1020-ERS			KTK-R-25	140U-D6D2-C20 140UT-D7D2-C20
2198-C1004-ERS	200...240V AC		KTK-R-6	140U-D6D2-B40 140UT-D7D2-B40
2198-C1007-ERS			KTK-R-10	140U-D6D2-B80 140UT-D7D2-B80
2198-C1015-ERS			KTK-R-15	140U-D6D2-C12 140UT-D7D2-C12
2198-C1020-ERS			KTK-R-25	140U-D6D2-C20 140UT-D7D2-C20

Kinetix 5300 IEC (non-UL/CSA) Circuit Protection Specifications

Drive Cat. No.	AC Input Voltage, nom	Phase	DIN gG Fuses Amps, max	Miniature CB Cat. No.	Molded Case CB Cat. No.
2198-C1004-ERS	200...240V AC	Three phase	6	1489-M3C060	140U-D6D3-B40 140UT-D7D3-B40
2198-C1007-ERS			10	1489-M3C100	140U-D6D3-B80 140UT-D7D3-B80
2198-C1015-ERS			16	1489-M3C160	140U-D6D3-C12 140UT-D7D3-C12
2198-C1020-ERS			25	1489-M3C250	140U-D6D3-C20 140UT-D7D3-C20
2198-C2030-ERS			32	1489-M3C400	140U-D6D3-C30 140UT-D7D3-C30
2198-C2055-ERS			40	–	140G-G6C3-C50
2198-C2075-ERS			50	–	140G-G6C3-C60
2198-C4004-ERS	380...480V AC		2	1489-M3C030	140U-D6D3-B20 140UT-D7D3-B20
2198-C4007-ERS			6	1489-M3C060	140U-D6D3-B40 140UT-D7D3-B40
2198-C4015-ERS			12	1489-M3C100	140U-D6D3-B80 140UT-D7D3-B80
2198-C4020-ERS			16	1489-M3C130	140U-D6D3-C12 140UT-D7D3-C12
2198-C4030-ERS			25	1489-M3C200	140U-D6D3-C15 140UT-D7D3-C15
2198-C4055-ERS			32	1489-M3C350	140U-D6D3-C30 140UT-D7D3-C30
2198-C4075-ERS			32	1489-M3C400	140U-D6D3-C30 140UT-D7D3-C30
2198-C1004-ERS	100...120V AC	Single phase	6	1489-M2C060	140U-D6D2-B40 140UT-D7D2-B40
2198-C1007-ERS			10	1489-M2C100	140U-D6D2-B80 140UT-D7D2-B80
2198-C1015-ERS			16	1489-M2C160	140U-D6D2-C12 140UT-D7D2-C12
2198-C1020-ERS			25	1489-M2C250	140U-D6D2-C20 140UT-D7D2-C20
2198-C1004-ERS	200...240V AC		6	1489-M2C060	140U-D6D2-B40 140UT-D7D2-B40
2198-C1007-ERS			10	1489-M2C100	140U-D6D2-B80 140UT-D7D2-B80
2198-C1015-ERS			16	1489-M2C160	140U-D6D2-C12 140UT-D7D2-C12
2198-C1020-ERS			25	1489-M2C250	140U-D6D2-C20 140UT-D7D2-C20

Motor Overload Protection

Allen-Bradley servo drives use solid-state motor overload protection that operates in accordance with UL requirements. Motor overload protection is provided by algorithms (thermal memory) that predict actual motor temperature based on operating conditions as long as control power is continuously applied.

In addition to thermal memory protection, these drives provide an input for an external temperature sensor/thermistor device, embedded in the motor, to support the UL requirement for motor overload protection.

This servo drive meets the following UL requirements for solid-state overload protection.

Motor Overload Protection Trip Point	Value
Ultimately	100% overload
Within 8 minutes	200% overload
Within 20 seconds	600% overload

ATTENTION: To avoid damage to your motor due to overheating caused by excessive, successive motor overload trips, follow the wiring diagram provided in the user manual for your motor and drive combination.

Refer to the Kinetix 5300 Servo Drives User Manual, publication 2198-UM005, for the interconnect diagram that illustrates the wiring between your motor and drive.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
Kinetix Rotary Motion Specifications, publication KNX-TD001	Product specifications for Kinetix VPL, VPC, VPF, VPH, and VPS; Kinetix MPL, MPM, MPF, and MPS; Kinetix TLY and TL; Kinetix MMA; and Kinetix HPK rotary motors.
Kinetix Linear Motion Specifications Technical Data, publication KNX-TD002	Product specifications for Kinetix MPAS and MPMA linear stages, Kinetix MPAR and MPAI electric cylinders, and Kinetix LDC and LDL linear motors.
Kinetix 5700, 5500, 5300, and 5100 Servo Drives Specifications, publication KNX-TD003	Provides product specifications for Kinetix Integrated Motion over the EtherNet/IP™ network and EtherNet/IP networking servo drive families.
Kinetix Rotary and Linear Motion Cable Specifications Technical Data, publication KNX-TD004	Product specifications for Kinetix 2090 motor and interface cables.
Kinetix Servo Drive Performance Specifications per Ecodesign Regulation (EU) 2019/1781 and UK SI 2021 No. 745, publication KNX-TD006	Provides specifications per EU and UK Ecodesign, including efficiency class.
Kinetix 5300 Single-axis EtherNet/IP Servo Drives User Manual, publication 2198-UM005	Provides information on how to install, configure, startup, and troubleshoot your Kinetix 5300 servo drive system.
Kinetix 5300 Feedback Connector Kit Installation Instructions, publication 2198-IN023	Provides information on installing and wiring the 2198-K53CK-D15M motor feedback connector kit.
Integrated Motion on the EtherNet/IP Network Reference Manual, publication MOTION-RM003	Provides information on the AXIS_CIP_DRIVE attributes, the configuration software control modes, and methods.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Use this manual if you are responsible for the circuit design and layout of wiring panels or the installation and mounting of Allen-Bradley products.
AC Line Filter Installation Instructions, publication 2198-IN003	Provides information on installing and wiring the AC line filters.
Kinetix 300 Shunt Resistor Installation Instructions, publication 2097-IN002	Provides information on installing and wiring these external shunt resistors for your Kinetix 5300 servo drives.
Kinetix 5700 Passive Shunt Modules, publication 2198-IN011	Provides information on how to install and wire Kinetix 5700 passive shunts.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Notes:

Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

Your comments help us serve your documentation needs better. If you have any suggestions on how to improve our content, complete the form at rok.auto/docfeedback.
For technical support, visit rok.auto/support.

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