

Technical Specifications - Kinetix 5500 Servo Drives

Kinetix 5500 Input Power Specifications

Attribute	2198-H003-ERS 2198-H003-ERS2	2198-H008-ERS 2198-H008-ERS2	2198-H015-ERS 2198-H015-ERS2	2198-H025-ERS 2198-H025-ERS2	2198-H040-ERS 2198-H040-ERS2	2198-H070-ERS 2198-H070-ERS2
AC input voltage	195...264V rms, single-phase (240V nom) 195...264V rms, three-phase (240V nom) 324...528V rms, three-phase (480V nom)			195...264V rms, three-phase (240V nom) 324...528V rms, three-phase (480V nom)		
AC input frequency	47...63 Hz					
Main AC input current ⁽¹⁾ 324...528V rms, three-phase 195...264V rms, single-phase	1.0 A 0.7 A	2.60 A 1.70 A	5.20 A 3.40 A	8.30 A N/A	13.4 A N/A	23.7 A N/A
Max inrush (0-pk)	15.0 A			30.0 A		60.0 A
Peak AC input current 324...528V rms, three-phase 195...264V rms, single-phase	3.0 A 2.1 A	7.8 A 5.1 A	15.6 A 10.2 A	24.9 A N/A	40.2 A N/A	71.1 A N/A
Line loss ride through	20 ms					
Control power DC input voltage	24V DC ±10%					
Control power DC input current ^{(1) (2)} (non-brake motors)	0.4 A _{DC}		0.8 A _{DC}			1.3 A _{DC}
Nominal bus output voltage	276...747V DC					
Continuous output current to bus 195...264V rms, single-phase 324...528V rms, three-phase	0.67 A _{DC} 1.0 A _{DC}	1.60 A _{DC} 2.40 A _{DC}	3.27 A _{DC} 4.90 A _{DC}	N/A 7.80 A _{DC}	N/A 12.7 A _{DC}	N/A 22.50 A _{DC}
Peak output current to bus ⁽³⁾ 195...264V rms, single-phase 324...528V rms, three-phase	2.0 A _{DC} 3.0 A _{DC}	4.8 A _{DC} 7.2 A _{DC}	9.8 A _{DC} 14.7 A _{DC}	N/A 23.4 A _{DC}	N/A 38.1 A _{DC}	N/A 67.5 A _{DC}
Continuous output power to bus Nom (230V rms, single-phase) Nom (230V rms, three-phase) Nom (480V rms, three-phase)	0.2 kW 0.3 kW 0.6 kW	0.5 kW 0.8 kW 1.6 kW	1.0 kW 1.6 kW 3.2 kW	N/A 2.5 kW 5.2 kW	N/A 4.0 kW 8.4 kW	N/A 7.2 kW 14.9 kW
Peak output power to bus Nom (230V rms, single-phase) Nom (230V rms, three-phase) Nom (480V rms, three-phase)	0.6 kW 1.0 kW 1.9 kW	1.6 kW 2.4 kW 4.9 kW	3.2 kW 4.9 kW 9.7 kW	N/A 7.8 kW 15.6 kW	N/A 12.7 kW 25.3 kW	N/A 22.4 kW 44.8 kW
DC input voltage (common bus follower)	276...747V DC					
DC input current (common bus follower)	1.0 A _{DC}	2.4 A _{DC}	4.9 A _{DC}	7.8 A _{DC}	12.7 A _{DC}	22.5 A _{DC}
Bus overvoltage	240V, nom AC input	440V DC				
	480V, nom AC input	810V DC				
Bus undervoltage	240V, nom AC input	138V DC				
	480V, nom AC input	275V DC				
Efficiency	97%					
Capacitive energy absorption	11.54 J		19.58 J	39.15 J	58.73 J	104.87 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 45](#).

(3) Peak output current duration equals 1.0 second.

Kinetix 5500 Output Power Specifications

Attribute	2198-H003-ERS 2198-H003-ERS2	2198-H008-ERS 2198-H008-ERS2	2198-H015-ERS 2198-H015-ERS2	2198-H025-ERS 2198-H025-ERS2	2198-H040-ERS 2198-H040-ERS2	2198-H070-ERS 2198-H070-ERS2
Bandwidth ⁽¹⁾ Velocity loop, max Current loop	300 Hz 1000 Hz					
PWM frequency	8 kHz	4 kHz				
Continuous output current (rms)	1.0 A	2.5 A	5.0 A	8.0 A	13.0 A	23.0 A
Continuous output current (0-pk)	1.4 A	3.5 A	7.1 A	11.3 A	18.4 A	32.5 A
Peak output current (rms) ⁽²⁾	2.5 A	6.25 A	12.5 A	20.0 A	32.5 A	57.5 A
Peak output current (0-pk) ⁽²⁾	3.5 A	8.8 A	17.7 A	28.3 A	45.9A	81.3A
Continuous power out (nom) 195...264V rms, single-phase 195...264V rms, three-phase 324...528V rms, three-phase	0.2 kW 0.3 kW 0.6 kW	0.5 kW 0.8 kW 1.6 kW	1.0 kW 1.5 kW 3.2 kW	N/A 2.4 kW 5.1 kW	N/A 4.0 kW 8.3 kW	N/A 7.0 kW 14.6 kW
Internal shunt resistance	100 Ω		60 Ω			40 Ω
Internal shunt power	30 W		50 W			75 W
Shunt on	775V plus 30V x bus regulator capacity/utilization ⁽³⁾					
Shunt off	765V plus 30V x bus regulator capacity/utilization ⁽³⁾					

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

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

(3) 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.

Control Power Current Specifications

Kinetix 5500 servo drives and the 2198 capacitor module 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 capacitor modules (1 to 4 modules are possible)

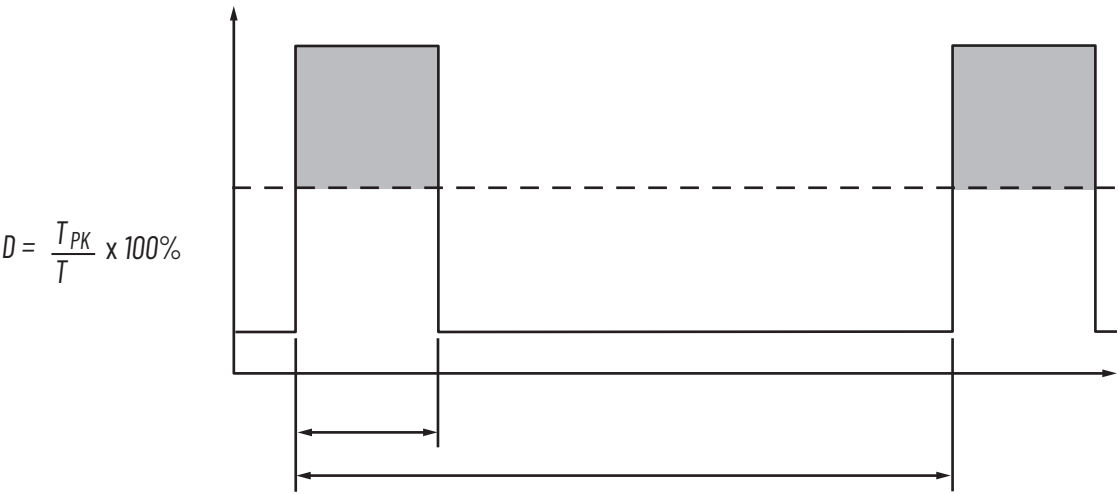
Control Power Current Specifications

Drive Cat. No.	24V Current (non-brake motor) A_{DC}	24V Current (2 A brake motor) A_{DC}	24V Inrush Current ⁽¹⁾ A
2198-H003-ERSx	0.4	2.4	2.0
2198-H008-ERSx			
2198-H015-ERSx	0.8	2.8	3.0
2198-H025-ERSx			
2198-H040-ERSx			
2198-H070-ERSx	1.3	3.3	2.0
2198-CAPMOD-1300	0.3	N/A	

(1) Inrush current duration is less than 30 ms.

Peak Current Specifications

Load Duty-cycle Profile Example

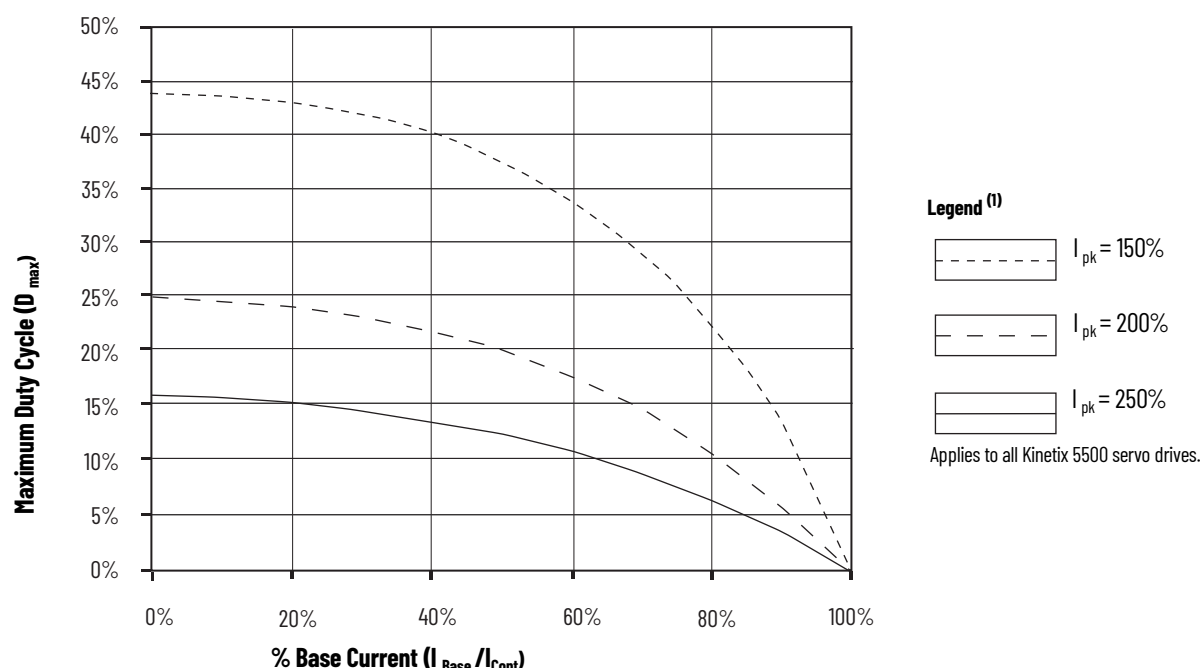


Peak Duty Cycle Definition of Terms

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 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}).

Circuit Breaker/Fuse Specifications

The Kinetix 5500 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).

Standalone Drive Systems

Kinetix 5500 Drives			UL Applications		IEC (non-UL) Applications	
Drive Cat. No.	Drive Voltage, nom	Phase	Bussmann Fuses Cat. No.	Molded Case CB Cat. No.	DIN gG Fuses Amps (max)	Molded Case CB Cat. No.
2198-H003-ERSx	240V	Single-phase	KTK-R-2	140U-D6D2-B10 140UT-D7D2-B10	2	140U-D6D2-B10 140UT-D7D2-B10
	240/480V	Three-phase	KTK-R-3	140U-D6D3-B20 140UT-D7D3-B20	4	140U-D6D3-B20 140UT-D7D3-B20
2198-H008-ERSx	240V	Single-phase	KTK-R-5	140U-D6D2-B20 140UT-D7D2-B20	6	140U-D6D2-B20 140UT-D7D2-B20
	240/480V	Three-phase	KTK-R-7	140U-D6D3-B60 140UT-D7D3-B60	6	140U-D6D3-B60 140UT-D7D3-B60
2198-H015-ERSx	240V	Single-phase	KTK-R-10	140U-D6D2-B80 140UT-D7D3-B80	10	140U-D6D2-B80 140UT-D7D3-B80
	240/480V	Three-phase	KTK-R-15	140U-D6D3-C12 140UT-D7D3-C12	16	140U-D6D3-C12 140UT-D7D3-C12
2198-H025-ERSx	240/480V	Three-phase	KTK-R-20	140U-D6D3-C20 140UT-D7D3-C20	20	140U-D6D3-C20 140UT-D7D3-C20
2198-H040-ERSx	240/480V	Three-phase	KTK-R-25	140U-D6D3-C25 140UT-D7D3-C25	25	140U-D6D3-C25 140UT-D7D3-C25
2198-H070-ERSx	240/480V	Three-phase	LPJ-35SP	140G-G6C3-C40	35	140G-G6C3-C40

Shared DC (common-bus) Drive Systems

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three-phase) nom	UL Applications		IEC (non-UL) Applications	
		Bussmann Fuses Cat. No.	Molded Case CB Cat. No.	DIN gG Fuses Amps (max)	Molded Case CB Cat. No.
2198-H003-ERSx	240/480V	KTk-R-10	140U-D6D3-C15 140UT-D7D2-C15	10	140U-D6D3-C15 140UT-D7D2-C15
2198-H008-ERSx	240/480V	KTk-R-10	140U-D6D3-C15 140UT-D7D3-C15	10	140U-D6D3-C15 140UT-D7D3-C15
2198-H015-ERSx	240/480V	KTk-R-15	140U-D6D3-C15 140UT-D7D3-C15	16	140U-D6D3-C15 140UT-D7D3-C15
2198-H025-ERSx	240/480V	KTk-R-20	140U-D6D3-C20 140UT-D7D3-C20	20	140U-D6D3-C20 140UT-D7D3-C20
2198-H040-ERSx	240/480V	KTk-R-25	140U-D6D3-C25 140UT-D7D3-C25	25	140U-D6D3-C25 140UT-D7D3-C25
2198-H070-ERSx	240/480V	LPJ-35SP	140G-G6C3-C40	35	140G-G6C3-C40

Shared AC Drive Systems

Input Power UL Circuit-protection Specifications

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three-phase) nom	Bussmann Fuses Cat. No.				Molded Case CB Cat. No.			
		2 Axes	3 Axes	4 Axes	5 Axes	2 Axes	3 Axes	4 Axes	5 Axes
2198-H003-ERSx	240/480V	KTK-R-15				140U-D6D3-C15 140UT-D7D3-C15			
2198-H008-ERSx	240/480V	KTK-R-15				140U-D6D3-C15 140UT-D7D3-C15			
2198-H015-ERSx	240/480V	KTK-R-20	KTK-R-25	N/A		140U-D6D3-C15 140UT-D7D3-C15	140U-D6D3-C20 140UT-D7D3-C20	N/A	
2198-H025-ERSx	240/480V	KTK-R-30		N/A		140U-D6D3-C25 140UT-D7D3-C25	140U-D6D3-C30 140UT-D7D3-C30	N/A	
2198-H040-ERSx	240/480V	LPJ-35SP	LPJ-45SP	N/A		140G-G6C3-C40	140G-G6C3-C50	N/A	
2198-H070-ERSx	240/480V	LPJ-60SP	N/A			140G-G6C3-C60	N/A		

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

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three-phase) nom	DIN gG Fuses Amps (max)				Molded Case CB Cat. No.			
		2 Axes	3 Axes	4 Axes	5 Axes	2 Axes	3 Axes	4 Axes	5 Axes
2198-H003-ERSx	240/480V	16				140U-D6D3-C15 140UT-D7D3-C15			
2198-H008-ERSx	240/480V	16				140U-D6D3-C15 140UT-D7D3-C15			
2198-H015-ERSx	240/480V	20	25	N/A		140U-D6D3-C15 140UT-D7D3-C15	140U-D6D3-C20 140UT-D7D3-C20	N/A	
2198-H025-ERSx	240/480V	32		N/A		140U-D6D3-C25 140UT-D7D3-C25	140U-D6D3-C30 140UT-D7D3-C30	N/A	
2198-H040-ERSx	240/480V	35	50			140G-G6C3-C40	140G-G6C3-C50	N/A	
2198-H070-ERSx	240/480V	63	N/A			140G-G6C3-C60	N/A		

Shared AC/DC and Hybrid Systems

Input Power UL Circuit-protection Specifications

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three- phase) nom	Bussmann Fuse Cat. No.							Molded Case CB Cat. No.							
		2 Axes	3 Axes	4 Axes	5 Axes	6 Axes	7 Axes	8 Axes	2 Axes	3 Axes	4 Axes	5 Axes	6 Axes	7 Axes	8 Axes	
2198-H003-ERSx	240/480V	KTK-R-10					KTK-R-15		140U-D6D3-C15 140UT-D7D3-C15							
2198-H008-ERSx	240/480V	KTK-R-15				KTK-R-20			140U-D6D3-C15 140UT-D7D3-C15						140U-D6D3-C20 140UT-D7D3-C20	
2198-H015-ERSx	240/480V	KTK-R-20			N/A			140U-D6D3-C15 140UT-D7D3-C15		140U-D6D3-C20 140UT-D7D3-C20		N/A				
2198-H025-ERSx	240/480V	KTK-R-30			N/A			140U-D6D3-C20 140UT-D7D3-C20		140U-D6D3-C30 140UT-D7D3-C30		N/A				
2198-H040-ERSx	240/480V	KTK-R-30	LPJ-45SP	LPJ-50SP	N/A			140U-D6D3-C30 140UT-D7D3-C30		140G-G6C3-C50		N/A				
2198-H070-ERSx	240/480V	LPJ-50SP	N/A					140G-G6C3-C50		N/A						

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

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three-phase) nom	DIN gG Fuses Amps (max)							Molded Case CB Cat. No.						
		2 Axes	3 Axes	4 Axes	5 Axes	6 Axes	7 Axes	8 Axes	2 Axes	3 Axes	4 Axes	5 Axes	6 Axes	7 Axes	8 Axes
2198-H003-ERSx	240/480V	10					16		140U-D6D3-C15 140UT-D7D3-C15						
2198-H008-ERSx	240/480V	16				20			140U-D6D3-C15 140UT-D7D3-C15					140U-D6D3-C20 140UT-D7D3-C20	
2198-H015-ERSx	240/480V	20			N/A				140U-D6D3-C15 140UT-D7D3-C15		140U-D6D3-C20 140UT-D7D3-C20		N/A		
2198-H025-ERSx	240/480V	32			N/A				140U-D6D3-C20 140UT-D7D3-C20		140U-D6D3-C30 140UT-D7D3-C30		N/A		
2198-H040-ERSx	240/480V	32	50		N/A				140U-D6D3-C30 140UT-D7D3-C30		140G-G6C3-C50		N/A		
2198-H070-ERSx	240/480V	50	N/A						140G-G6C3-C50		N/A				

Power Dissipation Specifications

Use this table to size an enclosure and calculate required ventilation for your Kinetix 5500 drive system.

Kinetix 5500 Drive Cat. No.	Usage as % of Rated Power Output (watts)				
	20%	40%	60%	80%	100%
2198-H003-ERSx 2198-H008-ERSx	12	25	37	50	62
2198-H015-ERSx 2198-H025-ERSx 2198-H040-ERSx	40	80	120	160	200
2198-H070-ERSx	64	128	192	256	320

Weight Specifications

Kinetix 5500 Drive Cat. No.	Weight, approx kg (lb)
2198-H003-ERSx 2198-H008-ERSx	1.4 (3.0)
2198-H015-ERSx 2198-H025-ERSx 2198-H040-ERSx	2.3 (5.0)
2198-H070-ERSx	4.1 (9.0)

Maximum Cable Lengths

The Kinetix 5500 drive maximum cable length depends on several factors, including the drive/motor combination and motor/cable combination (see [Drive/Motor/Cable Considerations](#) table below). The maximum cable length also depends on the AC input-power source used in the application, as shown on [page 51](#). Use the shorter cable length specified between the two tables for your application.

Drive/Motor/Cable Considerations

Kinetix 5500 Servo Drive Cat. No.	Kinetix VP Servo Motors/Actuators m (ft)		Other Compatible Rotary Motors and Linear Actuators ⁽¹⁾
	Standard (non-flex) Cables Cat. No. 2090-CSxM1DF-xxAAxx Cat. No. 2090-CSxM1DG-xxxAxx Cat. No. 2090-CSxM1E1-xxVAxx	Continuous-flex Cables ⁽²⁾ Cat. No. 2090-CSxM1DF-xxAFxx Cat. No. 2090-CSxM1DG-xxxFxx Cat. No. 2090-CSxM1E1-xxxFxx	Kinetix 2090 Motor/Actuator Cables ⁽³⁾ Cat. No. 2090-CxxM7DF m (ft)
2198-H003-ERSx 2198-H008-ERSx	50 (164)	30 (98.4)	20 (65.6)
2198-H015-ERSx 2198-H025-ERSx 2198-H040-ERSx	50 (164)		
2198-H070-ERSx	50 (164)		

(1) Requires use of the 2198-H2DCK HiPerface-to-DSL feedback converter kit (series B or later).

(2) When using any continuous-flex cable (whether extension or flying-lead) in your application, the maximum cable length including any standard (non-flex) cable back to the drive, is 30 m (98.4 ft).

(3) The 20 m (65.6 ft) limitation is attributed to the 2090-CPxM7DF power/brake cable. In 2198-H2DCK converter kit applications, you can replace the 2090-CPxM7DF power/brake cable with a 2090-CSxM1DF or 2090-CSxM1DG single motor cable (and reuse the 2090-CFBM7DF feedback cable) to increase the maximum cable length to 50 m (164 ft). This applies to only 18 and 14 AWG single cables. 2090-CSBM1Dx-10xxxx (10 AWG/M40 connector) single cables are not compatible with 2090-CPBM7DF-10Axxx (10 AWG/M40 connector) power/brake cables.

Refer to the Kinetix Rotary and Linear Motion Cable Specifications Technical Data, publication [KNX-TD004](#), for cable specifications.

Maximum cable length for the following input power configurations are dependent on these configuration variables:

- AC input power type
 - WYE grounded
 - WYE impedance grounded
 - WYE/Delta corner grounded or ungrounded
- AC input voltage
 - 240V AC
 - 400V AC
 - 480V AC

AC Input Power Considerations (400V-class motors and actuators)

AC Input Power Source Type	Compatible Motor and Actuator Cat. No.	Cable Length, max m (ft)	
		400V AC Input	480V AC Input
• WYE Grounded • WYE Impedance Grounded ⁽¹⁾ • WYE Ungrounded ⁽²⁾ • Delta Ungrounded ⁽²⁾	LDAT-Sxxxxxx-xDx	10 (32.8)	
	• VPx-B063xx, VPx-B075xx • VPx-B100xx...VPx-B165xx • VPAR-B1xxx, VPAR-B2xxxx • MPAR-B3xxxx • VPAR-B3xxxx • MPx-B3xxx...MPx-B6xxx • MPM-B115xx...MPM-B215xx	50 (164)	
	• MPL-B15xx, MPL-B2xx • MPAR-B1xxxx, MPAR-B2xxxx • MPAS-Bxxxx1, MPAS-Bxxxx2 • MPAL-Bxxxx	50 (164)	20 (65.6)
Delta Corner Grounded	• VPx-B063xx, VPx-B075xx • MPL-B15xx, MPL-B2xx • MPAR-B1xxxx, MPAR-B2xxxx • VPAR-B1xxx, VPAR-B2xxxx • MPAS-Bxxxx1, MPAS-Bxxxx2 • MPAL-Bxxxx	50 (164)	15 (49.2)
	• VPx-B100xx...VPx-B165xx • MPAR-B3xxxx • VPAR-B3xxxx • MPx-B3xxx...MPx-B6xxx • MPM-B115xx...MPM-B215xx	50 (164)	

(1) Impedance grounded systems running in ground fault conditions, for prolonged periods of time, cause additional stress to the motor insulation and can cause premature motor failure.

(2) Unbalanced, floating, ungrounded systems can cause additional stress to the motor.

AC Input Power Considerations (200V-class motors and actuators)

AC Input Power Source Type	Compatible Motor and Actuator Cat. No.	Cable Length, max m (ft)
		240V AC Input
Delta Corner Grounded	• VPx-A063xx, VPx-A075xx • VPx-A100xx...VPx-A165xx • MPL-A15xx, MPL-A2xx • MPx-A3xxx...MPx-A5xxx • MPM-A115xx...MPM-A215xx • MPAR-A1xxx, MPAR-A2xxxx, MPAR-A3xxxx • VPAR-A1xxx, VPAR-A2xxxx, VPAR-A3xxxx • MPAS-Axxxx1, MPAS-Axxxx2 • MPAL-Axxxx	50 (164)

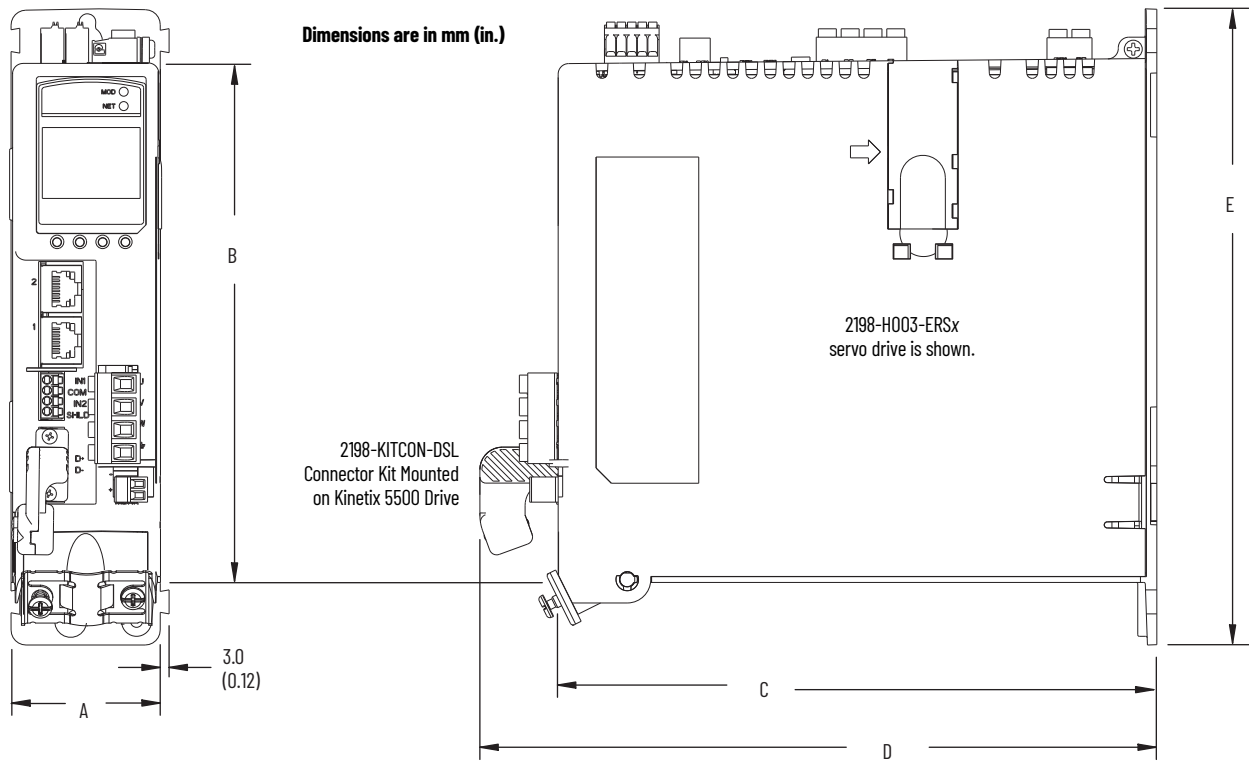
Combined power cable lengths for all axes on the same DC bus must not exceed 250 m (820 ft).

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

Dimensions - Kinetix 5500 Servo Drives

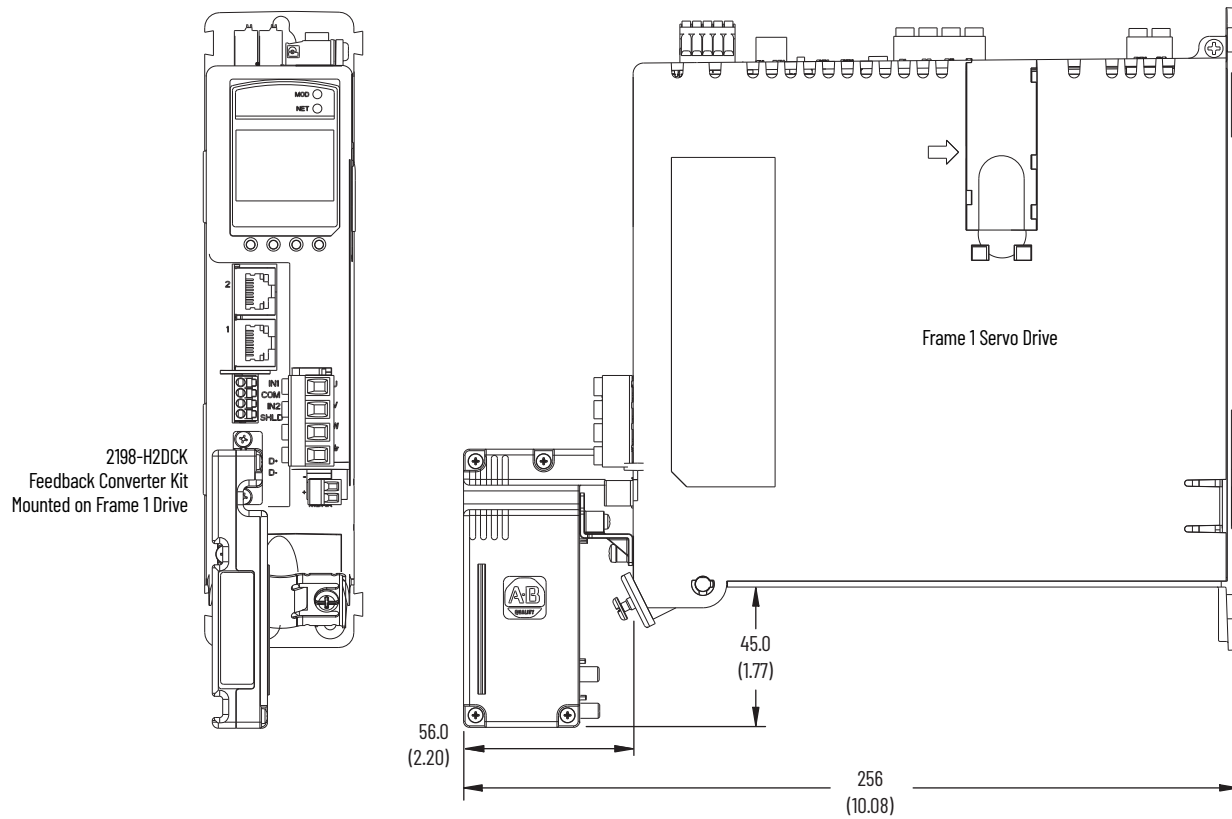
These drawings provide mounting dimensions for Kinetix 5500 servo drives. Also included are drawings showing the impact of compatible motor feedback connector kits on the mounting dimensions. Kinetix 5500 servo drives include the 2198-KITCON-DSL feedback connector kit for use with Kinetix VP motors. The 2198-H2DCK feedback converter kit, for Hiperface-to-DSL conversion, is used with Kinetix LDAT linear thrusters and Kinetix MP rotary motors and linear actuators. Refer to [page 53](#) for dimensions when using the converter kit.

Kinetix 5500 Drives with 2198-KITCON-DSL Connector Kit

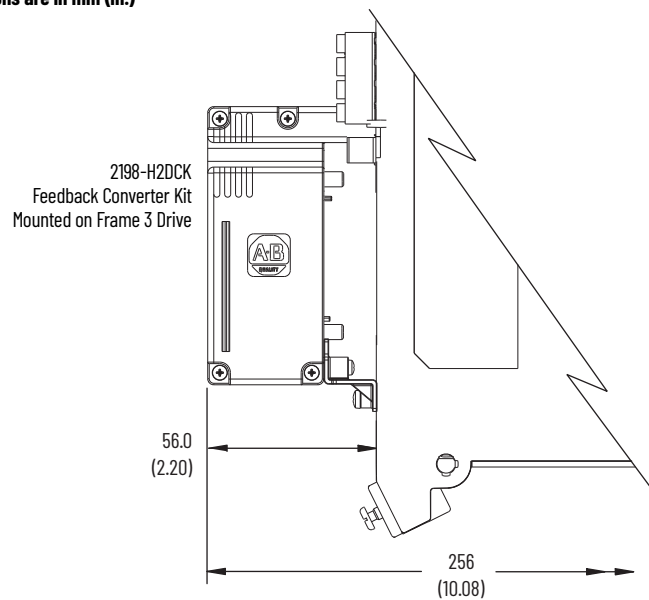
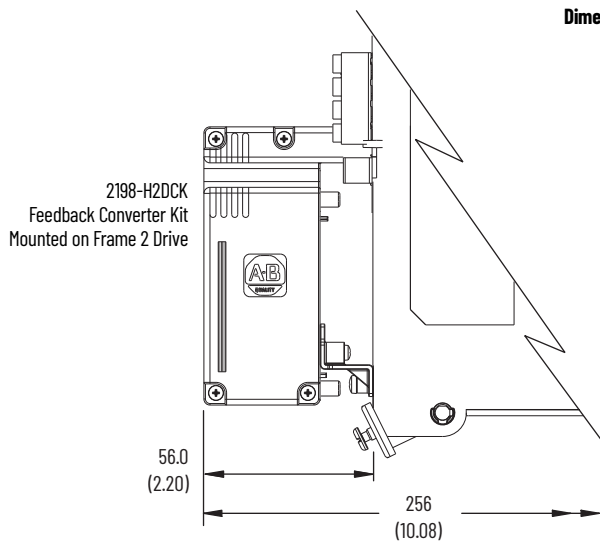


Kinetix 5500 Drive Cat. No.	Frame Size	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)
2198-H003-ERSx	Frame 1	50 (1.97)	175 (6.89)	200 (7.87)	226 (8.90)	215 (8.46)
2198-H008-ERSx						
2198-H015-ERSx	Frame 2	55 (2.16)	225 (8.86)			265 (10.43)
2198-H025-ERSx						
2198-H040-ERSx						
2198-H070-ERSx	Frame 3	85.2 (3.35)	250 (9.84)			

Kinetix 5500 Drives with 2198-H2DCK Converter Kit



Dimensions are in mm (in.)



Refer to [Hiperface-to-DSL Feedback Converter Kit](#) on [page 61](#) for motor/actuator compatibility and product dimensions.

Environmental Specifications - Kinetix 5500 Servo Drives

Attribute	Operational Range	Storage Range (nonoperating)
Ambient temperature (with 2198-KITCON-DSL connector kit)	0...50 °C (32...122 °F)	-40...+70 °C (-40...+158 °F)
Ambient temperature (with 2198-H2DCK converter kit and the existing 2090-CPBM7DF motor power/brake cable and 2090-CFBM7DF motor feedback cable) ⁽¹⁾	0...40 °C (32...104 °F)	
Relative humidity	5...95% noncondensing	5...95% noncondensing
Protection class (IEC 60529)	IP20	
Degree of pollution (IEC 61800-5-1)	2	
Altitude	1000 m (3281 ft) derate 15% per 1000 m above 1000 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)	

(1) When the 2198-H2DCK converter kit is used with the existing motor feedback cable (catalog number 2090-CFBM7DF) and single motor cable (catalog number 2090-CSBM1DF) for power and brake connections, derating the operational ambient temperature is not required.

Certifications - Kinetix 5500 Servo Drives

Agency Certification ⁽¹⁾	Standards
cULus ⁽²⁾	UL Listed to U.S. and Canadian safety standards (UL 508C File E59272). Solid-state motor overload protection provides dynamic fold-back of motor current when 110% of the motor rating is reached with a peak current limit based on the peak rating of the motor as investigated by UL to comply with UL 508C (UL File E59272).
CE	European Union 2004/108/EC EMC Directive compliant with IEC 61800-3:2004 + A1:2012: Adjustable Speed Electrical Power Drive Systems - Part 3; EMC Product Standard including specific test methods. European Union 2006/95/EC Low Voltage Directive compliant with IEC 61800-5-1:2007 - Adjustable speed electrical power drive systems.
Functional Safety	TÜV certified for functional safety when used as described in the Kinetix 5500 Servo Drives User Manual, publication 2198-UM001 . 2198-Hxxx-ERS (hardwired safety) drive ratings: up to Performance Level (PL) d, Category 3 according to ISO 13849; up to SIL CL2 according to IEC 61508, IEC 61800-5-2, and IEC 62061. 2198-Hxxx-ERS2 (integrated safety) drive ratings: up to Performance Level (PL) e, Category 3 according to ISO 13849; up to SIL CL3 according to IEC 61508, IEC 61800-5-2, and IEC 62061.
RCM	Australian Radiocommunications Act, compliant with: - Radiocommunications Act: 1992 (including Amendments up to 2017) - Radiocommunications (Electromagnetic Compatibility) Standard: 2017 - Radiocommunications Labeling ((Compliance Labelling - Incidental Emissions) Notice: 2017 - AS/NZS CISPR 11: 2002 (Group 1, Class A)
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: - Article 58-2 of Radio Waves Act, Clause 3 - Registration number: KCC-REM-RAA-2198
ODVA	EtherNet/IP conformance tested.
OSHA	Maximum audible noise from the servo drive system complies with OSHA standard 3074, Hearing Conservation (<85 dBA).
Ecodesign	IE2 efficiency class per Ecodesign regulation EU 2019/1781

(1) See [rok.auto/certifications](#) for declarations of conformity, certificates, and other certification details.

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

Accessories - Kinetix 5500 Servo Drives

Kinetix 5500 drive accessories include the 2198 capacitor module, shunt resistors, the encoder output module, AC line filters, and the shared-bus connection system. Kinetix 5500 servo drives are also compatible with 2097 external shunt resistors.

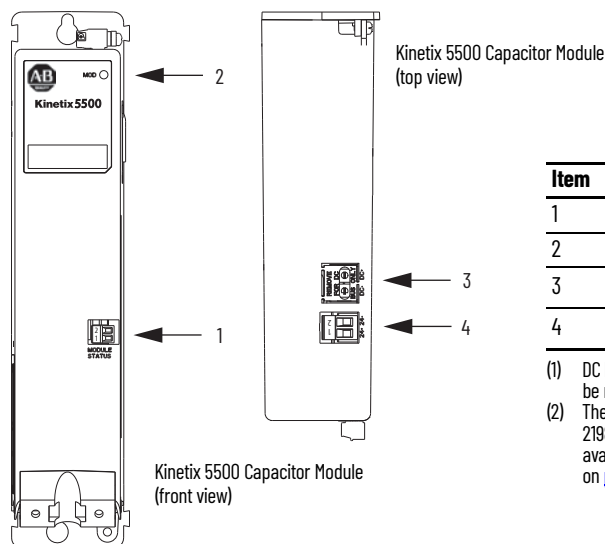
Capacitor Module

The Kinetix 5500 capacitor module provides 1360 μF capacitance for applications where the Kinetix 5500 internal shunt module capacity is exceeded. The capacitor module can be used alone or in combination with a 2097 external shunt module for applications with excessive regenerative energy.

The 2198-CAPMOD-1300 capacitor module is an option for Kinetix 2198 servo drive configurations with 200V or 400V-class operation. This section contains features, specifications, and product dimensions.

IMPORTANT Use the 2198-CAPMOD-1300 capacitor module in Kinetix 5500 drive configurations where DC-bus power is shared through the shared-bus connection system. You cannot use the capacitor module in configurations where only AC input power is shared.

Capacitor Module Features and Indicators



Item	Description
1	Module status (MS) connector
2	Module status indicator
3	DC bus (DC) connector (under cover) ⁽¹⁾ ⁽²⁾
4	24V control input power (CP) connector ⁽²⁾

(1) DC bus connector ships with protective knock-out cover that can be removed for use in shared-bus configurations.

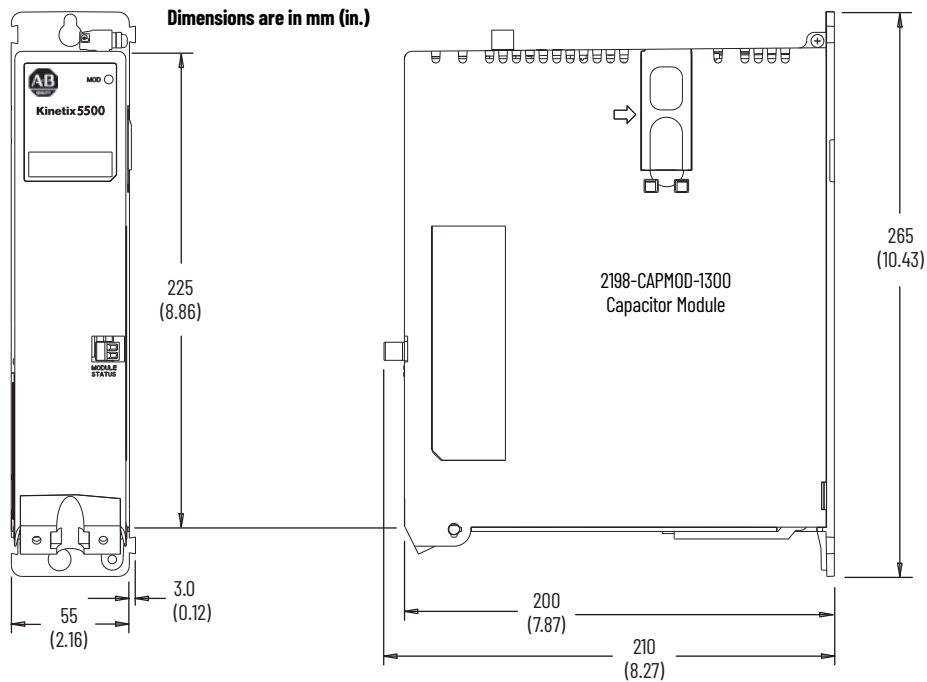
(2) The shared-bus kit for the capacitor module, catalog number 2198-KITCON-CAP1300, is included. Replacement kits are also available, refer to [Power-sharing Bus-bars and Connector Sets](#) on [page 62](#).

Capacitor Module Support

Kinetix 5500 Drive Cat. No.	Frame Size	Standalone Single Phase Operation	Three-phase Operation			
			Standalone	Shared DC	Shared AC/DC	Shared AC/DC Hybrid
		Number of capacitor modules connected, max				
2198-H003-ERSx ⁽¹⁾	1	0	0			
2198-H008-ERSx ⁽¹⁾			1		2	
2198-H015-ERSx ⁽¹⁾	2	N/A	3		4	
2198-H025-ERSx						
2198-H040-ERSx						
2198-H070-ERSx	3		4			

(1) Catalog number 2198-H003-ERS and any drive in standalone single-phase operation is not compatible with the Kinetix 5500 capacitor module.

Capacitor Module Dimensions



Capacitor Module Specifications

Capacitor Module Cat. No.	Voltage Range V DC	Capacitance μF	Energy Storage J	Continuous Current A, 0-pk	Weight kg (lb)
2198-CAPMOD-1300	275...747	1360	446 (460V AC input) 132 (230V AC input)	26.0	2.3 (5.0)

Shunt Resistor

The 2097 passive shunts are compatible with Kinetix 5500 servo drives. The shunt resistor wires directly to the drive.

Refer to [Passive Shunt Modules and Resistors Dimensions on page 107](#) for product dimensions and additional specifications.

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. For more information, refer to [Encoder Output Module on page 109](#).

AC Line Filters

The Kinetix 5500 drives were tested by using these recommended line filters and are required to meet CE requirements. These 2198 AC line filters apply to Kinetix 5500 drives used in single-phase and three-phase operation.

See [AC Line Filter Dimensions and Specifications on page 110](#) for product dimensions and additional specifications.

Single Drive AC Line Filter Selection

Kinetix Drive Module Cat. No.	AC Line Filter Cat. No.
2198-H003-ERSx 2198-H008-ERSx 2198-H015-ERSx	2198-DB08-F
2198-H025-ERSx 2198-H040-ERSx	• 2198-DBR20-F or • 2198-DB20-F
2198-H070-ERSx	• 2198-DBR40-F or • 2198-DB42-F

Multi-axis AC Line Filter Selection for Shared AC and Shared AC/DC and Hybrid Systems

Kinetix 5500 Drives Cat. No.	Drive Voltage, (three-phase) nom	AC Line Filter Cat. No.						
		2 Axes	3 Axes	4 Axes	5 Axes	6 Axes	7 Axes	8 Axes
2198-H003-ERSx	240/480V	2198-DBR20-F						
2198-H008-ERSx	240/480V	2198-DBR20-F						
2198-H015-ERSx	240/480V	2198-DBR20-F				-		
2198-H025-ERSx	240/480V	2198-DBR40-F				-		
2198-H040-ERSx	240/480V	2198-DBR40-F	2198-DBR90-F		-			
2198-H070-ERSx	240/480V	2198-DBR90-F	-					

2198-DBRxx-F AC Line Filter Specifications

AC Line Filter Cat. No.	Voltage Rating, max	Current Rating A @ 50 °C (122 °F)	Power Loss W	Leakage Current mA	Weight, approx kg (lb)	Operating Temperature
2198-DBR20-F	528V AC three-phase 50/60 Hz	20	4.2	30.0	1.0 (2.20)	0...50 °C (32...122 °F)
2198-DBR40-F		54	15.0		3.3 (7.28)	
2198-DBR90-F		90	16.8		4.1 (9.04)	