

Technical Specifications - Kinetix 5700 Drive Modules

DC-bus Power Supply Specifications

Attribute	2198-P031	2198-P070	2198-P141	2198-P208
AC input voltage	195...528V rms, three-phase (240/480V nom)			
AC input frequency	47...63 Hz			
Main AC input current ⁽¹⁾ 195...528V (rms) three-phase	11.2A	27.0 A	49.6 A	73.1 A
Max inrush (0-pk)	33.0 A	33.0 A	33.0 A	33.0 A
Peak AC input current 195...528V (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	276...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 Three-phase	31.6 A _{DC}	70.3 A _{DC}	140.8 A _{DC}	207.6 A _{DC}
Peak output current duration ⁽³⁾	1.0 s	1.0 s	1.0 s	0.1 s
Continuous output power to bus Nom (240V rms, three-phase at 1/2 power) Nom (480V rms, three-phase)	3.5 kW 7.0 kW	8.5 kW 17.0 kW	15.5kW 31.0 kW	23.0 kW 46.0 kW
Peak output power to bus Nom (240V rms, three-phase at 1/2 power) Nom (480V rms, three-phase)	10.5 kW 21.0 kW	23.0 kW 46.0 kW	46.5 kW 93.0 kW	69.0 kW 138.0 kW
Bus overvoltage 240V, nom AC input 480V, nom AC input	460V DC 832V DC			
Internal shunt resistance	37.5 Ω		13.5 Ω	
Internal shunt power	75 W		200 W	
Shunt on 240V, nom AC input 480V, nom AC input	400V plus 30V x bus regulator capacity/utilization ⁽⁴⁾ 775V plus 30V x bus regulator capacity/utilization ⁽⁴⁾			
Shunt off 240V, nom AC input 480V, nom AC input	390V plus 30V x bus regulator capacity/utilization ⁽⁴⁾ 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 modules 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 13](#).

(3) Peak output current duration with 10% duty cycle.

(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.

Control Power Current Specifications

Kinetix 5700 servo drives, the accessory modules, 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 capacitor modules or DC-bus conditioner 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 ⁽¹⁾ A
DC-bus Power Supplies	2198-P031	0.8	-	4.0
	2198-P070			
	2198-P141	1.9		
	2198-P208			
Regenerative Bus Supplies	2198-RP088	4.3	-	4.0
	2198-RP200	5.4		
	2198-RP263	9.1		
	2198-RP312			
Dual-axis Inverters	2198-D006-ERSx	1.4 ⁽²⁾	5.5 ⁽³⁾	4.0
	2198-D012-ERSx			
	2198-D020-ERSx	1.7 ⁽²⁾	7.7 ⁽³⁾	
	2198-D032-ERSx			
	2198-D057-ERSx			
Single-axis Inverters	2198-S086-ERSx	4.6	9.6 ⁽⁴⁾	4.0
	2198-S130-ERSx			
	2198-S160-ERSx			
	2198-S263-ERSx			
	2198-S312-ERSx			
iTRAK Power Supply ⁽⁵⁾	2198T-W25K-ER	1.3	-	2.2
Capacitor Module	2198-CAPMOD-2240	0.1	-	7.0
Extension Module	2198-CAPMOD-DCBUS-IO	-		-
DC-bus Conditioner Module	2198-DCBUSCOND-RP312	0.1		7.0

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

(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) 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](#).



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.