

Kinetix 5700 Passive Shunt Modules

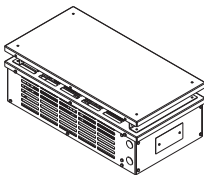
Catalog Numbers 2198-R014, 2198-R031, 2198-R127, 2198-R004

Topic	Page
About the Passive Shunt Modules	1
Important User Information	2
Install the 2198-R014, 2198-R031, and 2198-R127 Shunt Modules	3
Install the 2198-R004 Shunt Resistor	4
Product Dimensions	5
Wiring Requirements (units with enclosures)	6
Wiring Requirements (units without enclosures)	6
Shunt Module Specifications	7
Additional Resources	7

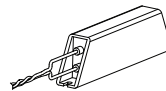
About the Passive Shunt Modules

The Kinetix® 5700 passive shunts are external modules that provide additional shunt capacity for applications where the drive's internal shunt capacity is exceeded.

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



2198-R014, 2198-R031, and 2198-R127
Shunt Modules



2198-R004
Shunt Resistor

See the Kinetix 5700 Servo Drives User Manual, publication [2198-UM002](#), for detailed information on wiring, applying power, troubleshooting, and integration with ControlLogix® or CompactLogix™ controllers.

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

Install the 2198-R014, 2198-R031, and 2198-R127 Shunt Modules

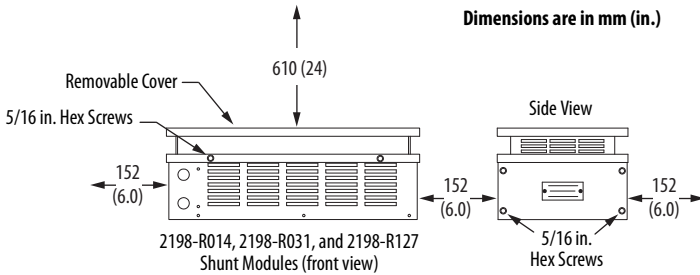
Observe these guidelines to install catalog numbers 2198-R014, 2198-R031, and 2198-R127:



ATTENTION: The 2198-R127 shunt module weighs 22.2 kg (49 lb) and presents a lift hazard. To avoid personal injury, use care when lifting the product.

- Remove the ventilated cover to access the mounting holes.
 - The cover is secured with 5/16 in. hex screws.
- Mount the shunt module in a ventilated location outside the drive system cabinet and observe the clearance requirements as shown in [Figure 1](#).
 - Bond the shunt enclosure to the panel to reduce the effects of electromagnetic interference (EMI). For more information on the concept of high-frequency (HF) bonding, refer to the System Design for Control of Electrical Noise Reference Manual, publication [GMC-RM001](#).
 - See [Product Dimensions](#) on [page 5](#) for mounting hole locations.
- Attach the shunt module by using M10 (3/8 in.) fasteners.
- Replace the ventilated cover.

Figure 1 - Clearance Requirements (shunt modules)



ATTENTION: To achieve full performance from these Bulletin 2198 passive shunt modules, the shunt must be mounted outside the drive cabinet with the removable cover facing up.

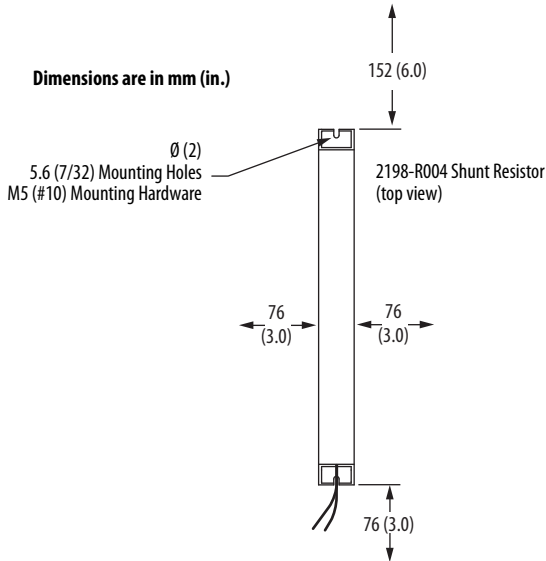
See the Kinetix 5700 Servo Drives User Manual, publication [2198-UM002](#), for additional information on the drive system installation.

Install the 2198-R004 Shunt Resistor

Observe these guidelines to install catalog number 2198-R004:

- Mount the shunt resistor inside the drive system cabinet and observe the clearance requirements as shown in [Figure 1](#).
 - Bond the shunt enclosure to reduce the effects of electromagnetic interference (EMI). For more information on the concept of high-frequency (HF) bonding, refer to the System Design for Control of Electrical Noise Reference Manual, publication [GMC-RM001](#).
 - See [Product Dimensions](#) on [page 5](#) for mounting hole locations.
- Attach the shunt module by using M5 (#10) fasteners.

Figure 2 - Clearance Requirements (shunt resistor)



ATTENTION: To achieve full performance, the 2198-R004 shunt resistor must be mounted vertically inside the drive cabinet.



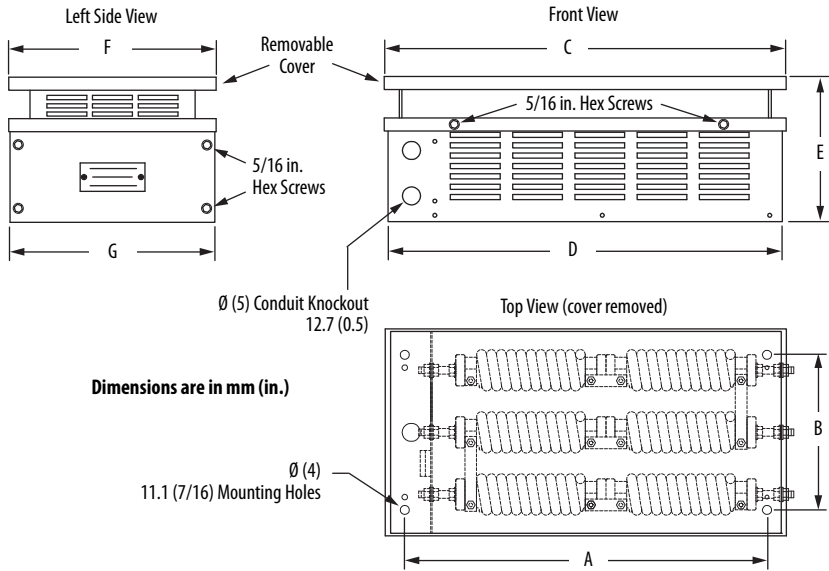
ATTENTION: This shunt resistor has no thermal protection device and the surface temperature can reach up to 385 °C (725 °F). Do not touch the resistor during operation. Do not install near flammable material. We recommend that you install in a manner that prevents user contact.

See the Kinetix 5700 Servo Drives User Manual, publication [2198-UM002](#), for additional information on the drive system installation.

Product Dimensions

These dimensions apply to units with an enclosure.

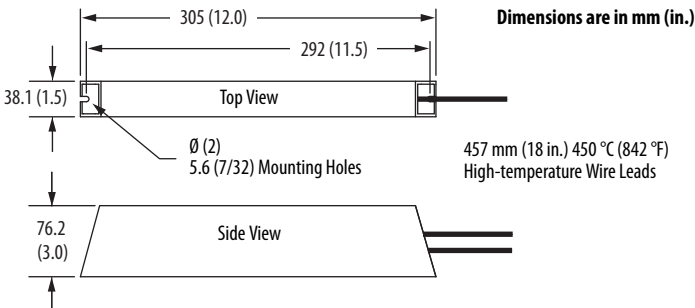
Figure 3 - Catalog Numbers 2198-R014, 2198-R031, and 2198-R127



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)

These dimensions apply to catalog number 2198-R004 (units without an enclosure).

Figure 4 - Catalog Number 2198-R004

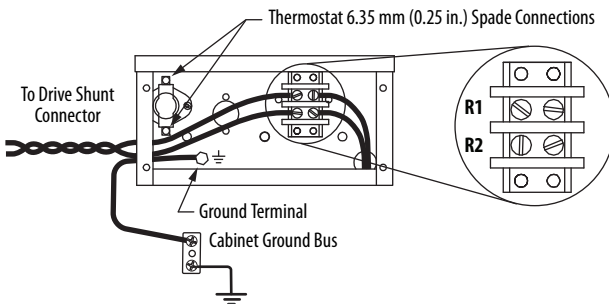


Wiring Requirements (units with enclosures)

Follow these steps to attach shunt wiring on units with enclosures (catalog numbers 2198-R014, 2198-R031, and 2198-R127).

1. Remove the left side cover by removing the four 5/16 in. hex screws.
2. Remove a convenient conduit knockout for passing the shunt connections through.
3. Connect wiring from the servo drive to the R1 and R2 terminals.
Apply 2.3 N•m (20 lb•in) torque to the R1 and R2 terminals.
4. Connect the thermostat input from the drive I/O to the thermostat spade connectors.
5. Connect the (green) ground terminal to the cabinet ground bus.
Apply 2.3 N•m (20 lb•in) torque to the ground terminal.
6. Replace the left side cover.

Figure 5 - Catalog Numbers 2198-R014, 2198-R031, and 2198-R127



ATTENTION: To avoid damage to the wires and provide stress relief for the shunt connections, a clamp must be added in the conduit knockout to secure the wires.

Wiring Requirements (units without enclosures)

The 2198-R004 shunt resistor leads connect directly to the servo drive.

Figure 6 - Catalog Number 2198-R004



Shunt Module Specifications

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.

Refer to the Kinetix Servo Drives Specifications Technical Data, publication [GMC-TD003](#), for drive and shunt resistor combinations. Use Motion Analyzer software to evaluate shunt resistor selection. Motion Analyzer software uses your motion profile and load requirements to determine regeneration needs. Download Motion Analyzer software at <http://ab.rockwellautomation.com/motion-control/motion-analyzer-software>.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix 5700 Servo Drives User Manual, publication 2198-UM002	Provides information on installing, configuring, start up, and troubleshooting your Kinetix 5700 servo drive system.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Information, examples, and techniques that are designed to minimize system failures caused by electrical noise.
EMC Noise Management DVD, publication GMC-SP004	
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation® industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/literature>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page , or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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