

Bulletin 2097 Shunt Resistor

Catalog Numbers 2097-R2, 2097-R3, 2097-R4, 2097-R6, 2097-R7

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About the Shunt Resistor

This publication provides installation instructions for the Bulletin 2097 shunt resistor. The 2097-Rx shunt resistor applies to Kinetix® 300 and Kinetix 350 servo drives. Use these instructions for installing and wiring your shunt resistor. For more information, refer to the user manual available for your drive listed in [Additional Resources on page 7](#).

Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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 consequences.



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.

IMPORTANT

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

Install the Shunt Resistor

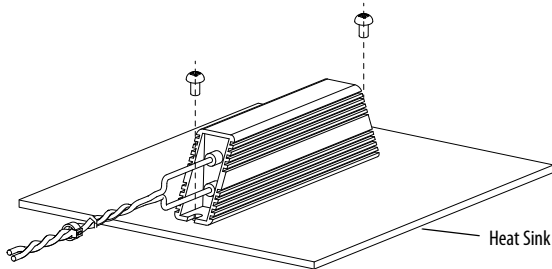
Install your 2097-Rx shunt resistor by using the dimension drawing on page 4 and two M4 (#6-32) steel machine screws. Torque to 1.1 N•m (9.8 lb•in).

The shunt resistor can operate at its full power rating if it is mounted vertically on a 200 x 200 x 3 mm (7.9 x 7.9 x 0.12 in.) heat sink at 25 °C (77 °F) with a clearances of 12 mm (0.5 in.) on the sides and 50 mm (2.0 in.) above and below. If you're not using a heat sink, refer to the derating information in the user manual.



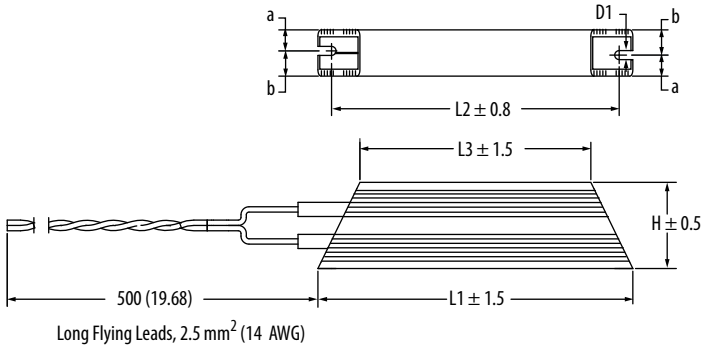
ATTENTION: The shunt resistor surface temperature can reach up to 200 °C (392 °F). Do not touch during operation. Do not install near flammable material. We recommend that you install in a manner that prevents user contact.

Mount Shunt Resistor to Heat Sink



TIP Mounting holes are not equally spaced. Carefully lay out hole pattern before drilling holes in the mounting surface.

Shunt Resistor Dimensions



Cat. No.	L1	L2	L3	H	D1 ⁽¹⁾	W = a + b	
						a	b
2097-R2	210 (8.3)	197 (7.7)	170 (6.7)	41 (1.6)	4.3 (0.17)	10 (0.39)	12 (0.47)
2097-R3	210 (8.3)	197 (7.7)	170 (6.7)	41 (1.6)	4.3 (0.17)	10 (0.39)	12 (0.47)
2097-R4	150 (5.9)	137 (5.4)	110 (4.3)	41 (1.6)	4.3 (0.17)	10 (0.39)	12 (0.47)
2097-R6	210 (8.3)	197 (7.7)	170 (6.7)	41 (1.6)	4.3 (0.17)	10 (0.39)	12 (0.47)
2097-R7	150 (5.9)	137 (5.4)	110 (4.3)	41 (1.6)	4.3 (0.17)	10 (0.39)	12 (0.47)

(1) D1 dimension is ± 0.3 mm (0.012 in.).

Wire the Shunt Resistor

The shunt resistor is wired into connector BC, a 7-pin quick-connect terminal block, which is plugged into the Shunt/DC Bus terminal on the front of the drive. The shunt resistor connects between the Positive DC Bus (either BC-1 or 2) and BC-4.

BC Connector Wiring Specifications

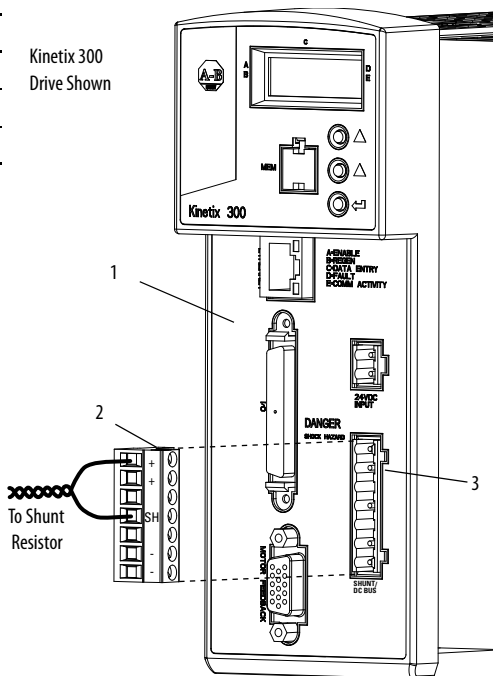
BC Pin	Description	Signal	Strip Length	Torque Value
1 and 2	Positive DC bus/shunt resistor	+	7 mm (0.28 in.)	0.5 N·m (4.5 lb·in)
4	Shunt resistor	SH		
6 and 7	Negative DC bus	-		

TIP Replacement connector sets (catalog number 2097-CONN1) are available. Set includes general purpose power input (IPD) header, back-up power (BP) header, shunt resistor and DC bus (BC) header, motor power (MP) header, and safe torque off (STO) header.

Route shunt wires per user manual instructions. For general guidelines when laying out your panel and mounting your shunt resistor, refer to the System Design for Control of Electrical Noise Reference Manual, publication [GMC-RM001](#).

Shunt Resistor Terminal and Connector

Item	Description
1	Front lower panel of drive
2	7-pin quick-connect terminal block
3	Shunt/DC bus connector (BC)



Shunt Resistor Specifications

Cat. No.	Resistance Ω	Continuous Power W	Weight, approx. kg (lb)
2097-R2	20	150	0.29 (0.64)
2097-R3	30	150	0.29 (0.64)
2097-R4	40	80	0.19 (0.42)
2097-R6	75	150	0.29 (0.64)
2097-R7	150	80	0.19 (0.42)

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 control profile and load requirements to determine regeneration needs. Download Motion Analyzer software at <http://www.rockwellautomation.com/en/e-tools/configuration.html>.

Additional Resources

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

Resource	Description
Kinetix 300 EtherNet/IP Indexing Servo Drives User Manual, publication 2097-UM001	Provides instructions on mounting and programming the drive and lists technical specifications.
Kinetix 350 Single-axis EtherNet/IP Servo Drives User Manual, publication 2097-UM002	
Kinetix 300 EtherNet/IP Indexing Servo Drives Installation Instructions, publication 2097-IN001	Provides instructions on mounting the drive and lists technical specifications.
Kinetix 350 Single-axis EtherNet/IP Servo Drives Installation Instructions, publication 2097-IN008	
Kinetix Servo Drives Specifications Technical Data, publication GMC-TD003	Provides technical specifications for Kinetix servo drive products and accessories.

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 manuals, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools. You can also visit our Knowledgebase at <http://www.rockwellautomation.com/knowledgebase> for FAQs, technical information, support chat and forums, software updates, and to sign up for product notification updates.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnectSM support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/support/>.

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/support/americas/phone_en.html , 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/>.

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