Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

AC Line Filters

Catalog Numbers 2198-DBR20-F, 2198-DBR40-F, 2198-DBR90-F, 2198-DBR200-F, 2198-DB08-F, 2198-DB20-F, 2198-DB42-F, 2198-DB80-F, 2198-DB290-F

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

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Updated the current rating for catalog number 2198-DBR40-F	9

About the AC Line Filters

This publication provides installation instructions for AC line filters. For more information on installing and wiring your drive system, refer to the drive-family user manual listed in Additional Resources on page 10.

Before You Begin

For general guidelines when laying out your panel and mounting your AC line filter, refer to the System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001.

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For guidelines specific to your application, refer to your drive-family user manual listed in Additional Resources on page 10.

ATTENTION: To avoid personal injury or damage to equipment due to hazardous voltages, follow these guidelines when installing your AC line filter. NEC and local regulations always take precedence:

- Disconnect mains power before installation.
- Verify that the rated voltage is compatible with the local supply voltage.
- Connect the earth ground connection first.

Install the AC Line Filter

Mount the line filter to the cabinet panel with hardware as specified in the table below.

AC Line Filter Cat. No.		**Mounting Bolts**	**Torque Value** N•m (lb•in)
2198-DBR20-F	2198-DB08-F	M5 (#10-32)	2.0 (17.7)
	2198-DB20-F		
2198-DBR40-F	2198-DB42-F	M6 (1/4x20)	4.5 (39.8)
2198-DBR90-F	2198-DB80-F		
2198-DBR200-F	–		
–	2198-DB290-F	M10 (3/8x16)	30 (266)

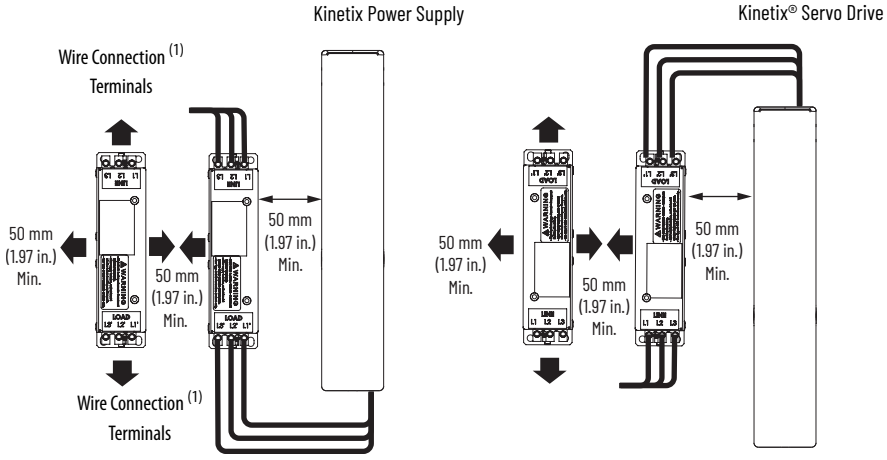
See the System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001, for proper high-frequency (HF) bonding techniques to improve overall system performance.

For wiring guidelines specific to your application, see your drive-family user manual listed in Additional Resources on page 10.

Mounting Clearance Specifications

Minimum clearance on either side of the Bulletin 2198 AC line filters is 50 mm (1.97 in.). When line filter units are positioned side-by-side on the panel, only 50 mm (1.97 in.) minimum is required between them.

IMPORTANT Minimize the wire length between te line filter and the input to the servo drive.

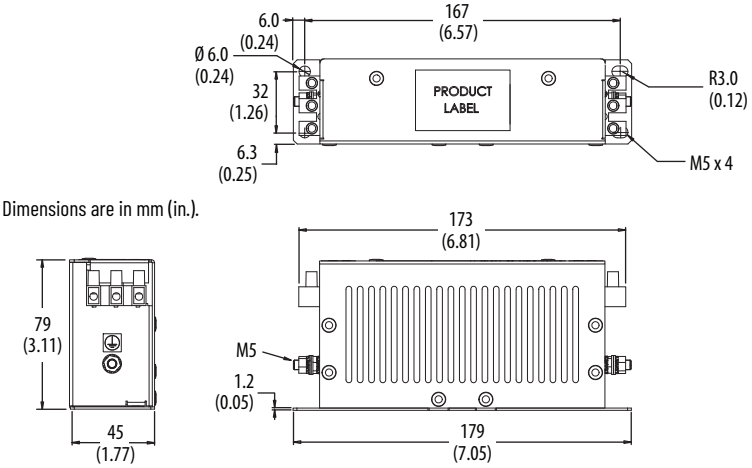


(1) Clearance required at the terminals for NEC specified bend radius depends on the wire size in use.

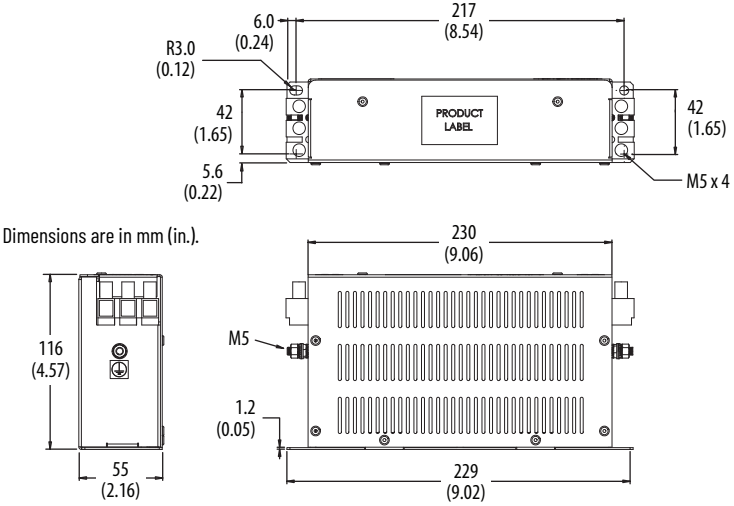
AC Line Filter Dimensions

For line filter dimensions specific to your application, see the drive-family technical data, publication KNX-TD003.

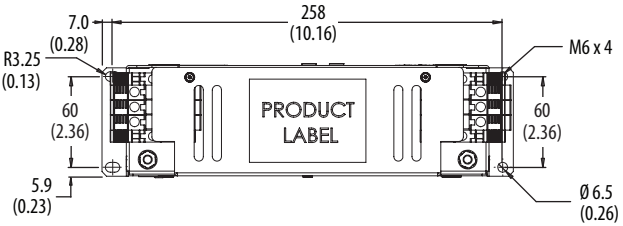
AC Line Filter Dimensions (catalog number 2198-DB08-F)



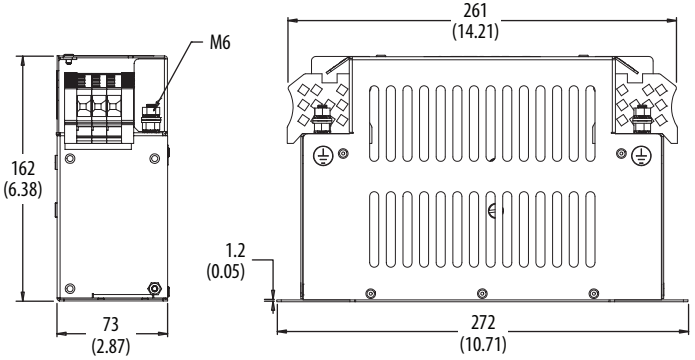
AC Line Filter Dimensions (catalog number 2198-DB20-F)



AC Line Filter Dimensions (catalog number 2198-DB42-F)

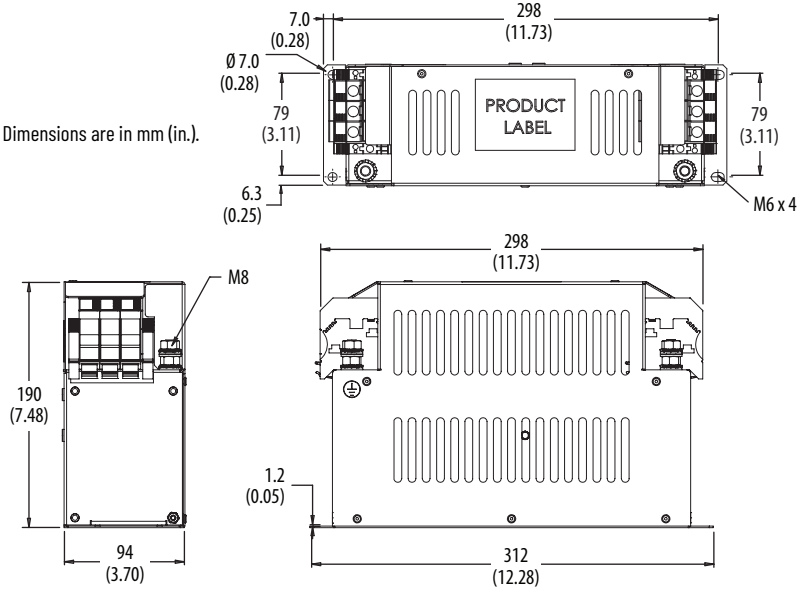


Dimensions are in mm (in.).



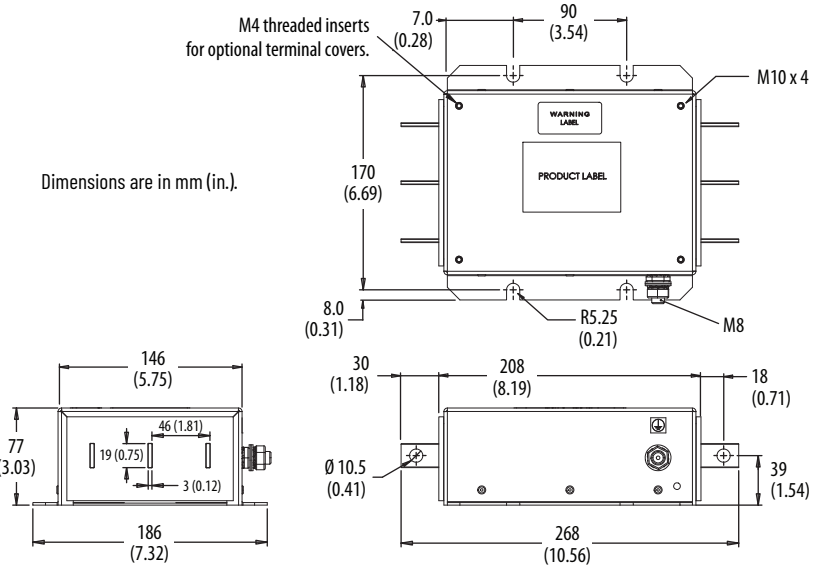
AC Line Filter Dimensions (catalog number 2198-DB80-F)

Dimensions are in mm (in.).



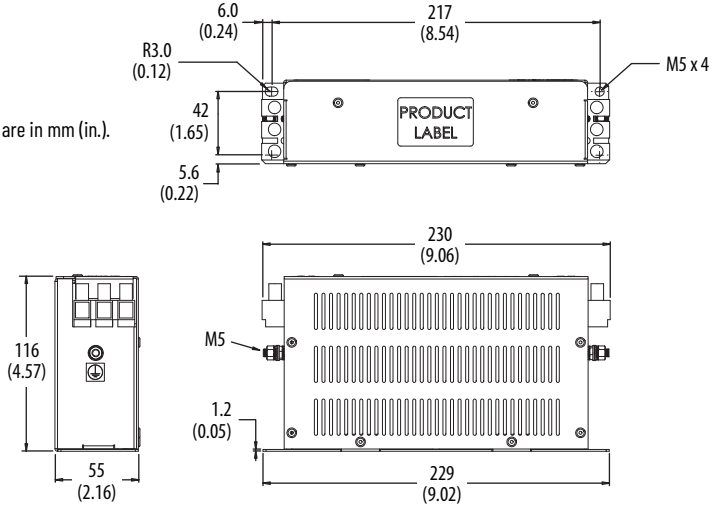
AC Line Filter Dimensions (catalog number 2198-DB290-F)

Dimensions are in mm (in.).



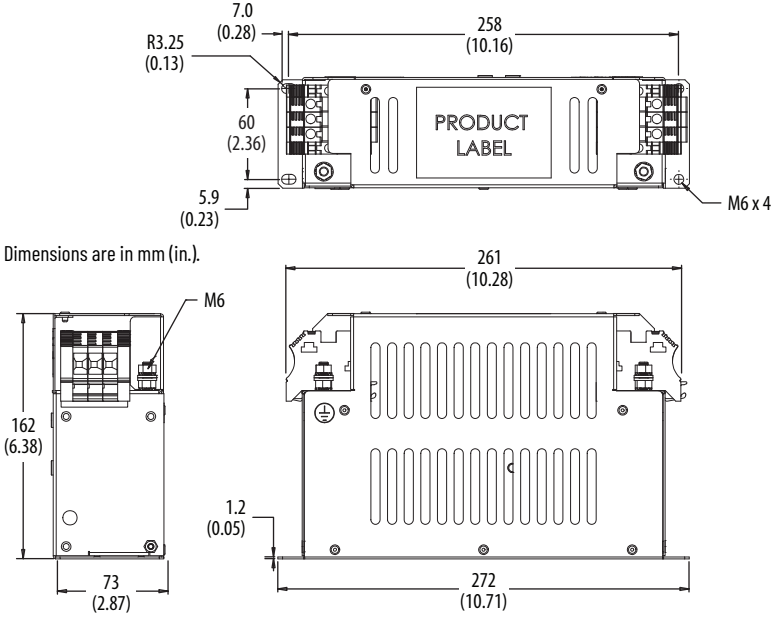
AC Line Filter Dimensions (catalog number 2198-DBR20-F)

Dimensions are in mm (in.).



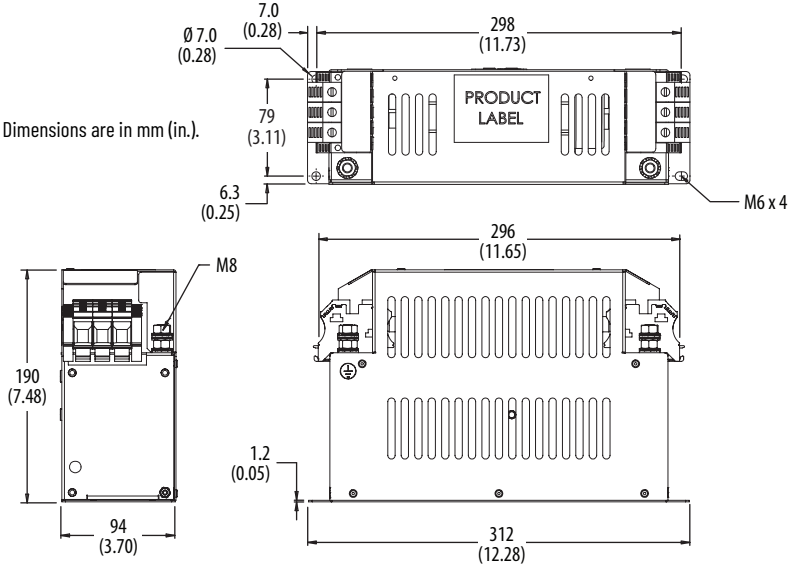
AC Line Filter Dimensions (catalog number 2198-DBR40-F)

Dimensions are in mm (in.).



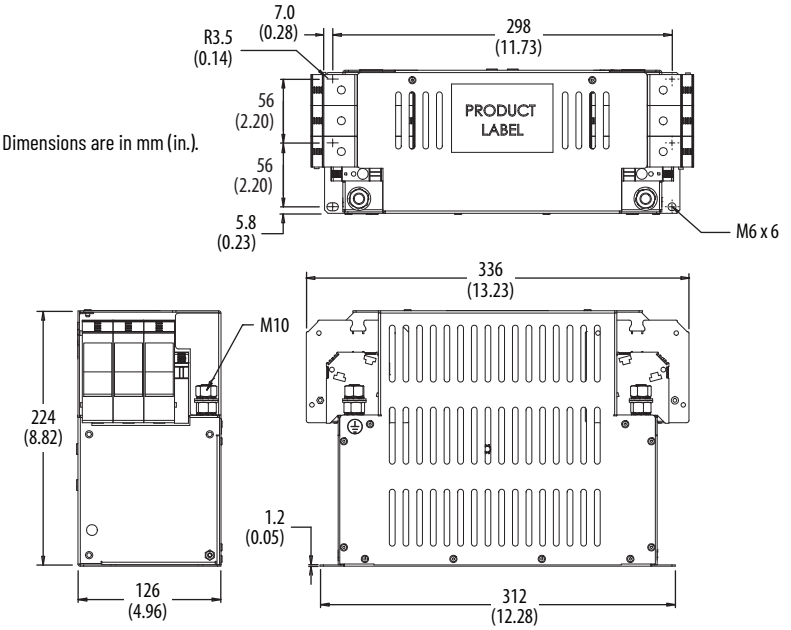
AC Line Filter Dimensions (catalog number 2198-DBR90-F)

Dimensions are in mm (in.).



AC Line Filter Dimensions (catalog number 2198-DBR200-F)

Dimensions are in mm (in.).



AC Line Filter Specifications

Technical Specifications

AC Line Filter Cat. No.	Voltage (1) Rating, max	Current Rating A @ 50 °C (122 °F)	Power Loss @ Rated Current W	Leakage Current, typ mA	Weight, approx kg (lb)	Operating Temperature
2198-DBR20-F	528V AC single and three-phase 50/60 Hz	20	4.2	30	1.0 (2.20)	0…50 °C (32…122 °F)
2198-DBR40-F		54	15		3.3 (7.28)	
2198-DBR90-F		90	16.8	34.0	4.1 (9.04)	
2198-DBR200-F		200	34.5	46.0	7.2 (15.87)	
2198-DB08-F	528V AC single and three-phase 50/60 Hz	7.5	3.6	2.5	0.77 (1.70)	0…50 °C (32…122 °F)
2198-DB20-F		20	5.1	5.2	1.63 (3.59)	
2198-DB42-F		42	14.7	4.0	2.70 (5.95)	
2198-DB80-F		80	18.3	13.0	3.95 (8.71)	
2198-DB290-F		290	32.7	19.4	4.20 (9.26)	

(1) SCCR rating = 200 kA.

Wiring Specifications

AC Line Filter Cat. No.	Signal	Recommended(1) Wire Size mm^2, AWG	AC Line Filter Strip Length mm (in.)	Terminal Torque Values N•m (lb•in)
2198-DB08-F(2)	L1, L1′ L2, L2′ L3, L3′	0.5…6 (20…10)	7.5 (0.30)	0.8 (7.1)
2198-DBR20-F 2198-DB20-F		2.5…10 (14…8)	9.0 (0.35)	2.0 (17.7)
2198-DBR40-F 2198-DB42-F			12.0 (0.47)	1.9 (16.8)
2198-DBR90-F 2198-DB80-F		2.5…35 (14…0)	18.0 (0.71)	4.5 (39.8)
2198-DBR200-F		21.1…120 (4…250 kcmil)	27.0 (1.06)	12 (106)
2198-DB290-F		Bus-bar(3)	N/A	30 (266)

(1) The wire size of the input power wiring depends on the system configuration. Consult your machine builder, the NEC, and applicable local codes.
(2) Applies to installations with single-phase or three-phase input power.
(3) Apply crimp eyelet terminals to lug connections by using the supplier-recommended tooling.

Additional Resources

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

Resource	Description
Kinetix Servo Drives Specifications Technical Data, publication KNX-TD003	Provides catalog numbers and product specifications, including power, performance, environmental, certifications, dimension drawings, and accessories for Kinetix servo drives.
Kinetix 5700 Servo Drives User Manual, publication 2198-UM002	Provides information on how to install, configure, startup, troubleshoot and integrate with Logix 5000™ controllers.
Kinetix 5500 Servo Drives User Manual, publication 2198-UM001	
Kinetix 5300 Servo Drives User Manual, publication 2198-UM005	
iTRAK System User Manual, publication 2198T-UM001	
Servo Drive Installation Best Practices Application Technique, publication MOTION-AT004	Best practice examples to help reduce the number of potential noise or electromagnetic interference (EMI) sources in your system and to make sure that the noise sensitive components are not affected by the remaining noise.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Information, examples, and techniques designed to minimize system failures caused by electrical noise.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

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.

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