



## 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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### About the AC Line Filters

This publication provides wiring and installation instructions for the AC line filters used with the Kinetix® 5500 and Kinetix 5700 servo drive systems and the Kinetix 5700 iTRAK® power supply. For more information on installing and wiring your Kinetix 5500 or Kinetix 5700 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](#).

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)

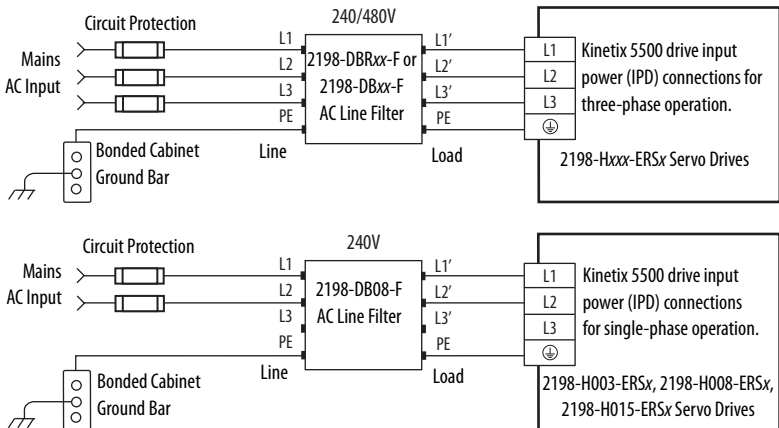
See the System Design for Control of Electrical Noise Reference Manual, publication [GMC-RM001](#), for proper high-frequency (HF) bonding techniques to improve overall system performance.

## Wire the AC Line Filter

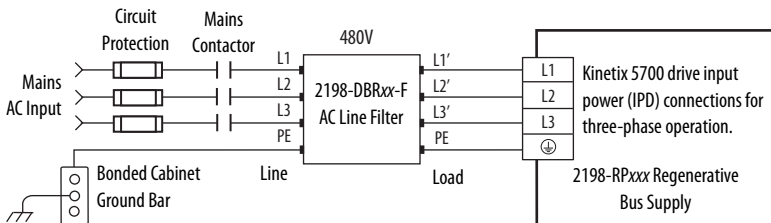
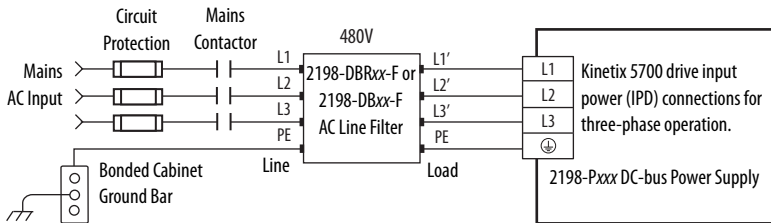
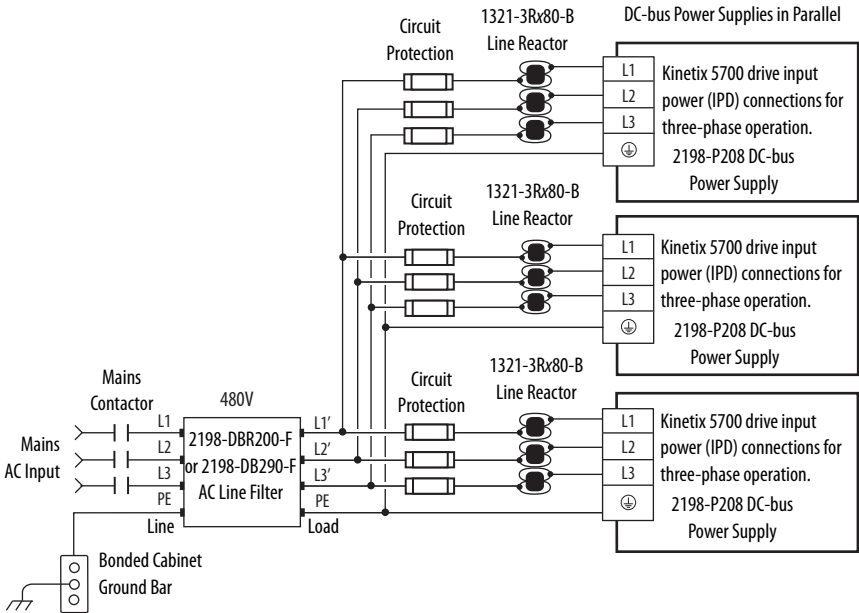
Wire must be copper with 75 °C (167 °F) minimum rating. Phasing of main AC power is arbitrary and earth ground connection is required to improve safety and proper operation.

**IMPORTANT** The National Electrical Code and local electrical codes take precedence over the values and methods provided.  
 When wiring the line filter for single-phase operation (Kinetix 5500 drives only), do not make connections to the L3 terminals. Line and load designations must be observed to meet product specifications.

### AC Line Filter Wiring Examples (Kinetix 5500 drives)



**AC Line Filter Wiring Examples (Kinetix 5700 drives)**



## AC Line Filter Wiring Specifications

AC Line Filter Cat. No.	Signal	Recommended <sup>(1)</sup> Wire Size mm <sup>2</sup> , AWG	AC Line Filter Strip Length mm (in.)	Terminal Torque Values N·m (lb·in)
2198-DB08-F <sup>(2)</sup>	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 <sup>(3)</sup>	N/A	30 (266)

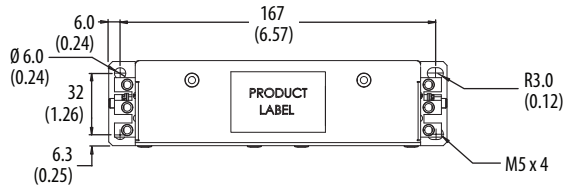
(1) The wire size of the input power wiring depends on the system configuration. Consult your machine builder, the NEC, and applicable local codes.

(2) Applies to installations with single-phase or three-phase input power.

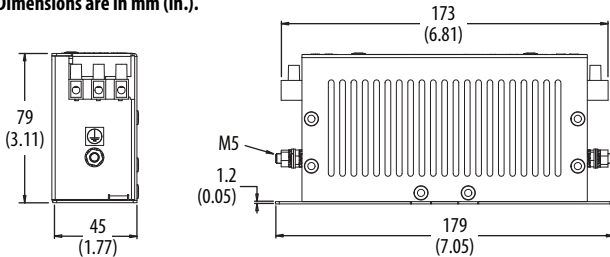
(3) Apply crimp eyelet terminals to lug connections by using the supplier-recommended tooling.

## AC Line Filter Dimensions

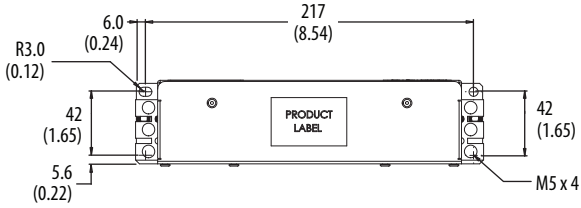
### AC Line Filter Dimensions (catalog number 2198-DB08-F)



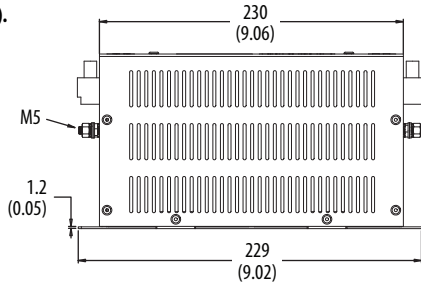
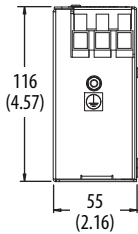
Dimensions are in mm (in.).



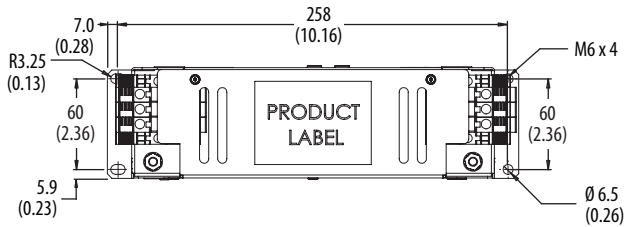
**AC Line Filter Dimensions (catalog number 2198-DB20-F)**



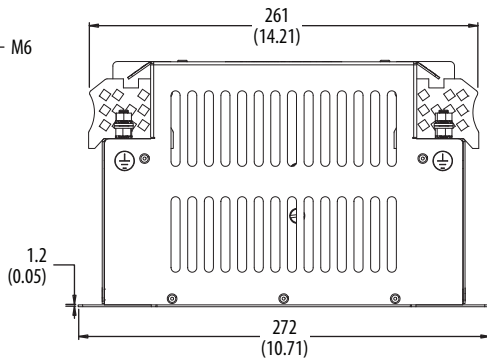
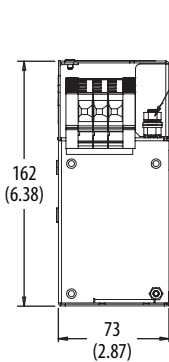
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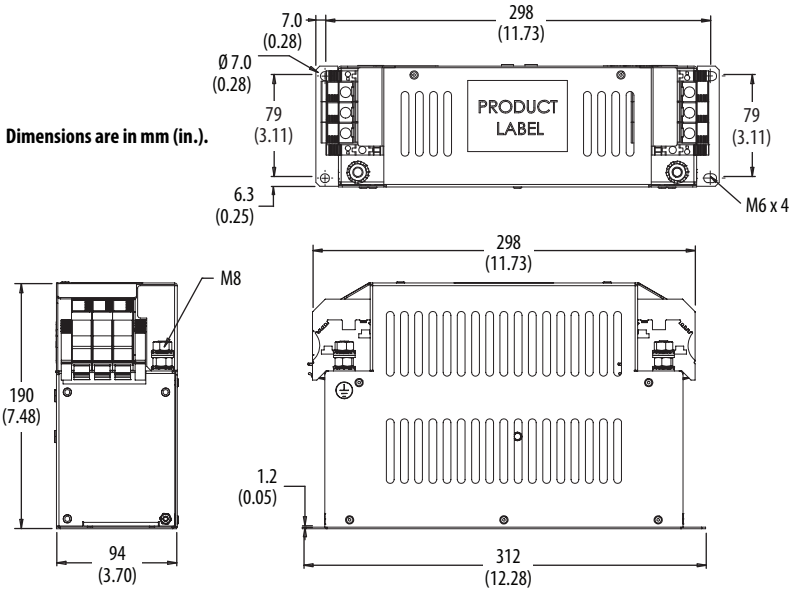
**AC Line Filter Dimensions (catalog number 2198-DB42-F)**



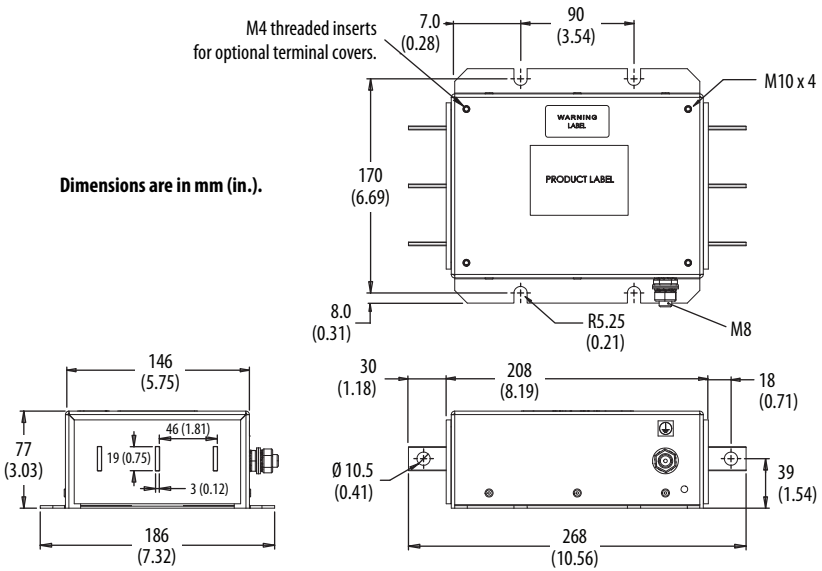
Dimensions are in mm (in.).



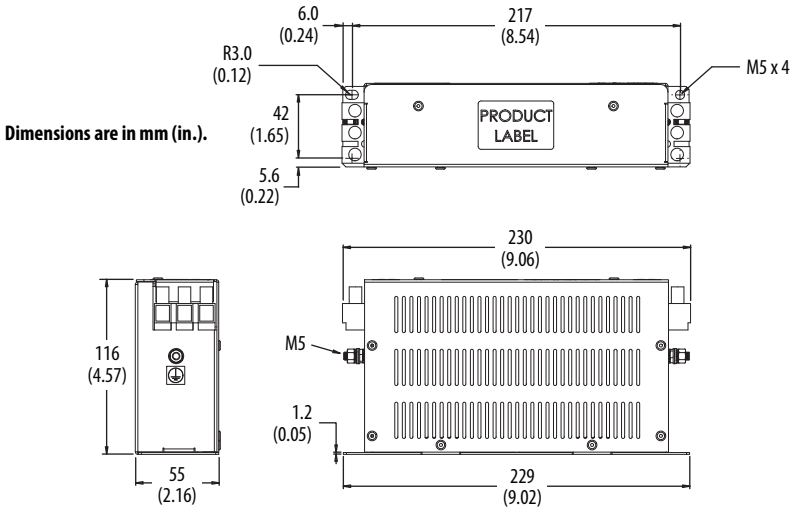
**AC Line Filter Dimensions (catalog number 2198-DB80-F)**



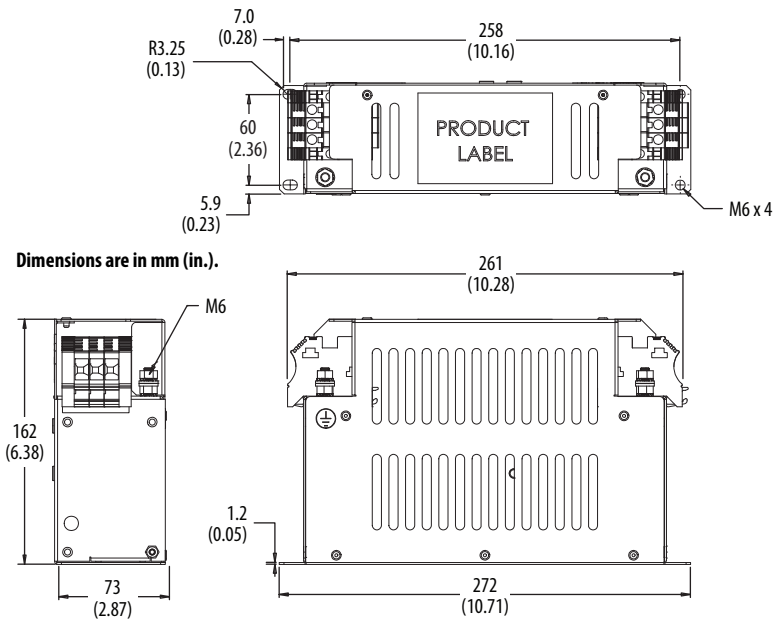
**AC Line Filter Dimensions (catalog number 2198-DB290-F)**



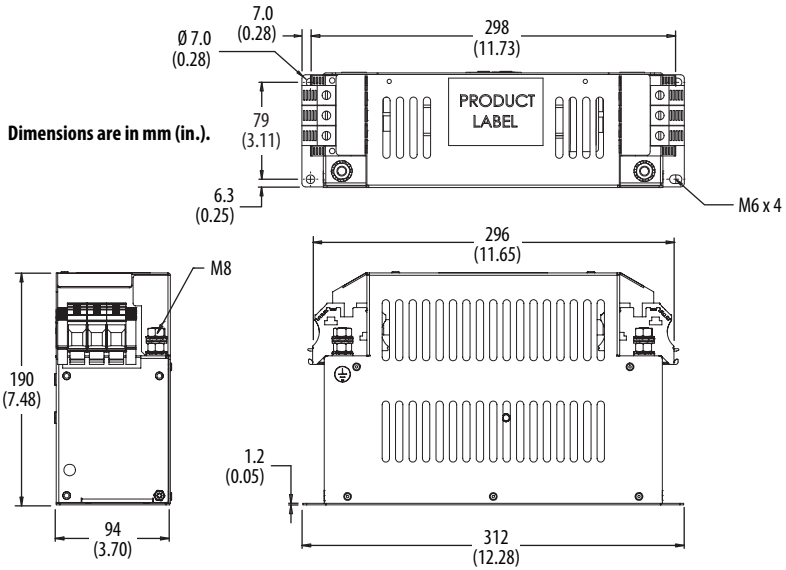
**AC Line Filter Dimensions (catalog number 2198-DBR20-F)**



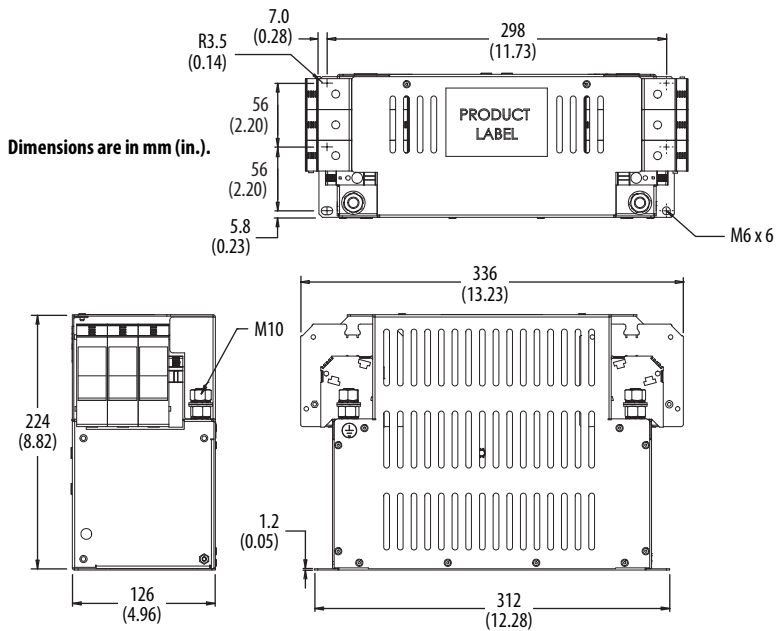
**AC Line Filter Dimensions (catalog number 2198-DBR40-F)**



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



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





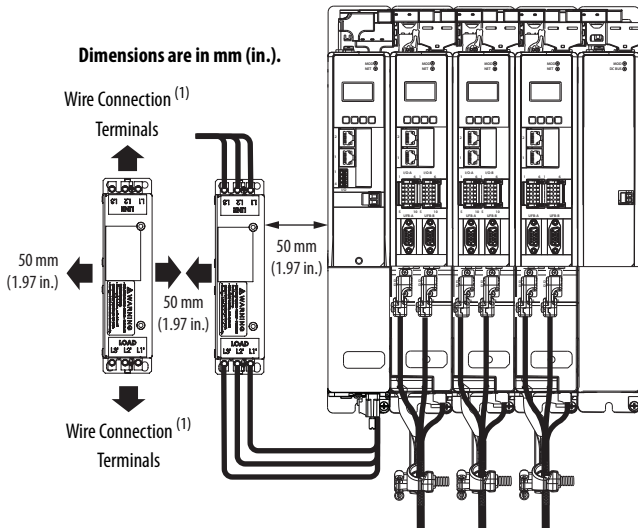
## AC Line Filter Specifications

AC Line Filter Cat. No.	Voltage <sup>(1)</sup> 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		40	9.6		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.

## 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.) is required between them.



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

## Additional Resources

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

Resource	Description
Kinetix 5700 Servo Drives User Manual, publication <a href="#">2198-UM002</a>	Provides detailed information on installing, configuring, starting, troubleshooting and integration with Logix 5000 controllers.
Kinetix 5500 Servo Drives User Manual, publication <a href="#">2198-UM001</a>	
iTRAK System User Manual, publication <a href="#">2198T-UM001</a>	
System Design for Control of Electrical Noise Reference Manual, publication <a href="#">GMC-RM001</a>	Information, examples, and techniques designed to minimize system failures caused by electrical noise.
Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a>	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, <a href="http://rok.auto/certifications">rok.auto/certifications</a>	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/global/literature-library/overview.page>.

**Notes:**

# Rockwell Automation Support

Use the following resources to access support information.

<b>Technical Support Center</b>	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	<a href="https://rockwellautomation.custhelp.com/">https://rockwellautomation.custhelp.com/</a>
<b>Local Technical Support Phone Numbers</b>	Locate the phone number for your country.	<a href="http://www.rockwellautomation.com/global/support/get-support-now.page">http://www.rockwellautomation.com/global/support/get-support-now.page</a>
<b>Direct Dial Codes</b>	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	<a href="http://www.rockwellautomation.com/global/support/direct-dial.page">http://www.rockwellautomation.com/global/support/direct-dial.page</a>
<b>Literature Library</b>	Installation Instructions, Manuals, Brochures, and Technical Data.	<a href="http://www.rockwellautomation.com/global/literature-library/overview.page">http://www.rockwellautomation.com/global/literature-library/overview.page</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Get help determining how products interact, check features and capabilities, and find associated firmware.	<a href="http://www.rockwellautomation.com/global/support/pcdc.page">http://www.rockwellautomation.com/global/support/pcdc.page</a>

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At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

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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