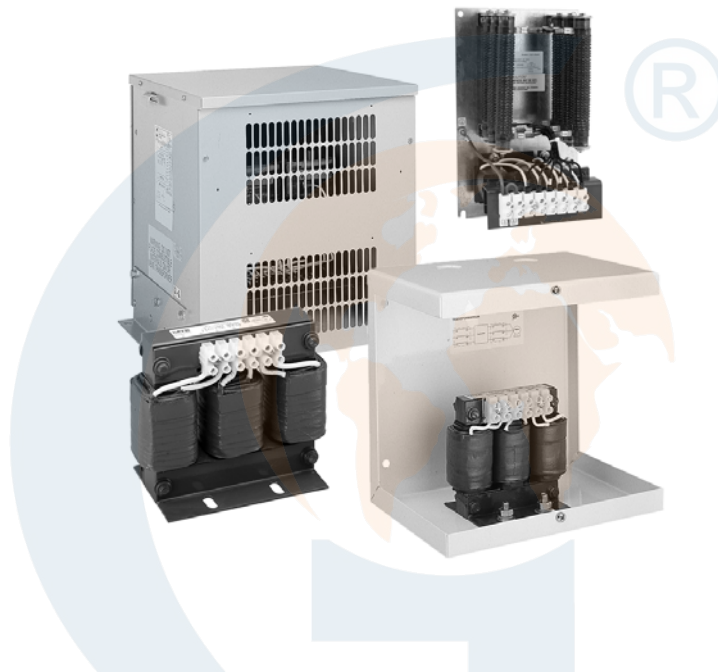


# 1321 Power Conditioning Products

Don't Ignore the Cost of Power Line Disturbance



Topic	Page
Product Overview	<a href="#">2</a>
1321-3R, 1321-3RA, and 1321-3RB Series Line Reactors	<a href="#">3</a>
1321 Reflective Wave Reduction (RWR) Devices	<a href="#">12</a>
1321-3TH/3TW Series Three-Phase Isolation Transformers	<a href="#">16</a>
1321-Mxxx Common Mode Chokes	<a href="#">21</a>
1321-DC DC Link Chokes	<a href="#">25</a>

LISTEN.  
THINK.  
SOLVE.®

## Additional Resources

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

Resource	Description
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication <a href="#">DRIVES-IN001</a>	Basic information needed to properly wire and ground PWM AC drives.
Safety Guidelines for the Application, Installation and Maintenance of Solid State Control, publication <a href="#">SGI-1.1</a>	General guidelines for the application, installation, and maintenance of solid-state control.

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.

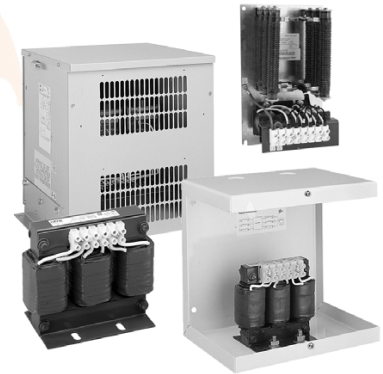
For Allen-Bradley Drives Technical Support:

Title	Online at...
Allen-Bradley Drives Technical Support	<a href="http://www.ab.com/support/abdrives">www.ab.com/support/abdrives</a> or call (1) 262.512.8176



## Product Overview

Allen-Bradley reactors help keep equipment running longer by absorbing many of the power line disturbances which can shut down your drive. Allen-Bradley isolation transformers can provide both voltage change and isolation for your variable speed drive. These designs are harmonic compensated and IGBT protected to assure optimum performance in the presence of harmonics.



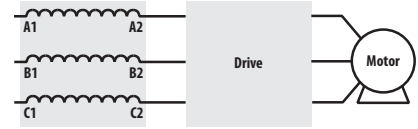
## 1321-3R, 1321-3RA, and 1321-3RB Series Line Reactors

### Applying Allen-Bradley Line Reactors

#### At the Input of the Drive

At the input of a drive, line reactors help protect against surges or spikes on the incoming power lines and help reduce harmonic distortion.

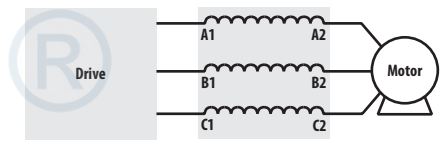
- Eliminate Nuisance Tripping
- Improve True Power Factor
- Extend Semiconductor Life
- Reduce Voltage Notching
- Reduce Harmonic Distortion
- Meet IEEE-519 or EN-61800



#### At the Output of the Drive

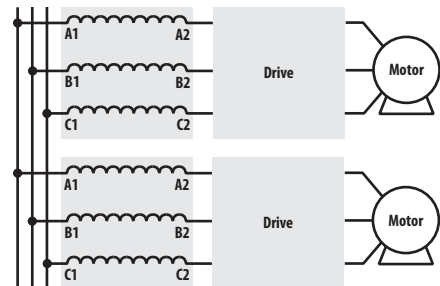
In long motor lead applications, Allen-Bradley load reactors located between the drive and motor help reduce  $dv/dt$  and motor terminal peak voltages. The use of a load reactor also helps protect the drive from surge currents caused by rapid changes in the load.

- Protect Motors from Long Lead Effects
- Reduce Surge Currents
- Reduce Output Voltage  $dv/dt$
- Reduce Motor Temperature
- Extend Semiconductor Life
- Reduce Audible Motor Noise



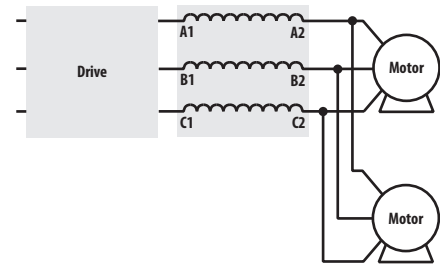
#### With Multiple Drives

Multiple drives on a common power line should each have their own line reactor. Individual line reactors provide filtering between each drive to help reduce any crosstalk while providing optimum surge protection for each drive.



#### With Multiple Motors

When more than one motor is controlled by a single drive, a single line reactor can typically be used between the drive and all the motors. Size the line reactor based on the total motor/load horsepower.



#### With Single-Phase Input

A three-phase reactor can be used for single-phase applications by routing each of the two input power conductors to the outside two coils, and leaving the center coil disconnected. The sum of the inductance of the two coils is the total inductance applied to the circuit. Contact Rockwell Automation Technical Support for assistance in specifying the proper reactor.

