

Product Line: Bulletin 7000, 7000A, 7000L
Product Name: PowerFlex 7000 with “Direct-to-Drive” Technology
Launch Category: Product Line Extension **7000-FA001A-EN-E** **Date:** May 2004



PowerFlex
7000

with Direct-to-Drive technology

The Allen-Bradley PowerFlex 7000 family of medium voltage drives with Direct-to-Drive technology allow customers to connect utility power directly to the drive without an isolation transformer. It also allows customers to connect both new and existing motors directly to the drive, eliminating unnecessary motor filtering.

Direct-to-Drive technology is designed to meet customer demands for increased reliability, lower total cost of ownership and reduced size and weight, while eliminating common mode voltage and remaining compliant to the world's most accepted harmonic standards.

Frequently Asked Questions

Your reference guide of answers to the most frequently asked questions about the PowerFlex 7000 with Direct-to-Drive technology

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PowerFlex 7000™ Direct-to-Drive Technology Frequently Asked Questions:

When should a drive with isolation transformer be quoted rather than Direct-to-Drive technology?

When the utility voltage does not match the motor voltage.

If the winding ratio in an isolation transformer must be used to increase or reduce the utility voltage to suit the drive.

When the motor power is greater than the maximum power rating offered with Direct-to-Drive. PowerFlex 7000 18-Pulse rectifier configurations are available at higher power ratings than Direct-to-Drive configurations.

When there is a strategic advantage to offering a drive with isolation transformer.

Offering outdoor or remote transformers can give us an advantage over competitors with integral isolation transformers - it offers the smallest drive footprint and produces the least amount of heat in the control room.

Does the size of my drive change when I select Direct-to-Drive technology?

Relative to a drive and isolation transformer, the PowerFlex 7000 drive with Direct-to-Drive technology will typically be smaller and lighter.

Relative to a PowerFlex 7000 drive with integral line reactor, there is no change in size on most configurations. Some high power configurations may increase in width.

As with all PowerFlex 7000 drives, there are no shipping splits - the drive is shipped as one unit to simplify installation and reduce cost.

Is the Direct-to-Drive common mode voltage protection feature available as a field retrofit for existing customers?

A common mode voltage protection retrofit is available, but should be reviewed on a case-by-case basis. Contact the factory or your local sales representative for retrofit inquiries.

Is Direct-to-Drive technology suitable for applications in explosive environments (Class 1 Div 2)?

Although Direct-to-Drive has a favorable effect on reducing energy at the motor shaft, each application should be reviewed on a case-by-case basis to determine if Direct-to-Drive complies with the site's requirements. Variables that need to be reviewed include:

- The minimum amount of shaft energy permitted on site.
- How the motor is coupled to the load.
- The number of paths to ground through the motor and load.
- Grounding procedures.

Is specially insulated line or motor cable required on applications with Direct-to-Drive technology?

No. Direct-to-Drive technology works with standard 5kv cable up to 4160V and standard 8kv cable up to 6600V on both the drive input and drive output.

In addition, no extra motor insulation is required to protect against common mode voltage stress.

Does Direct-to-Drive work with Synchronous Motors?

All PowerFlex 7000 drives including Direct-to-Drive work with Synchronous, Induction and Wound Rotor Motors.

Can an isolation transformer be substituted by Direct-to-Drive for the purpose of protecting against common mode voltage?

Customer's medium voltage drive specifications sometimes state that common mode voltage protection be provided by isolation transformer.

Direct-to-Drive technology complies with this requirement by not producing levels of common mode voltage that will affect the motor or utility power.

When will Direct-to-Drive technology be available for all standard drive configurations (6-Pulse, 18-Pulse, Heavy Duty or Liquid Cooled drives)?

Direct-to-Drive technology for Active Front End is currently available.

Direct-to-Drive for 6-Pulse, Heavy Duty and Liquid Cooled configurations will be available for sale in Fall 2004. Consult the factory if you have a requirement for this configuration.

Direct-to-Drive technology will not be offered on 18-pulse rectifiers. It is necessary to use an isolation transformer for the 18-pulse phase shifting, therefore the Direct-to-Drive feature would be redundant.

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