

# PowerFlex 700 Adjustable Frequency AC Drive



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## Additional Resources

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

| Resource                                                                                                                        | Description                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PowerFlex 700 Adjustable Frequency AC Drive Installation Instructions – Frames 0...6, publication <a href="#">20B-IN0019</a>    | Provides detailed information about installation and start-up.                                              |
| PowerFlex 700 Adjustable Frequency AC Drive Installation Instructions – Frames 7...10, publication <a href="#">20B-IN0014</a>   |                                                                                                             |
| PowerFlex 700 Standard Control User Manual, publication <a href="#">20B-UM001</a>                                               | Provides detailed information on:<br>• Parameters and programming<br>• Faults, alarms, and troubleshooting  |
| PowerFlex 700 Vector Control User Manual (v4.001 & up), publication <a href="#">20B-UM002</a>                                   |                                                                                                             |
| PowerFlex 70 and PowerFlex 700 Reference Manual, publication <a href="#">PFLEX-RM001</a>                                        | Provides detailed application specific information for programming and configuring the PowerFlex 700 drive. |
| PowerFlex 70 Enhanced Control and PowerFlex 700 Vector Control Reference Manual, publication <a href="#">PFLEX-RM004</a>        |                                                                                                             |
| Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication <a href="#">DRIVES-IN001</a>             | Provides 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> | Provides general guidelines for the application, installation, and maintenance of solid-state control.      |
| Preventive Maintenance of Industrial Control and Drive System Equipment, publication <a href="#">DRIVES-TD001</a>               | Provides a guide to performing preventive maintenance.                                                      |
| Guarding Against Electrostatic Damage, publication <a href="#">8000-4.5.2</a>                                                   | Provides practices for guarding against electrostatic damage (ESD).                                         |
| Product Certifications website, <a href="http://ab.com">http://ab.com</a>                                                       | Provides declarations of conformity, certificates, and other certification details.                         |

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.

## Product Overview

The PowerFlex 700 AC drive offers outstanding performance in an easy-to-use drive that you have come to expect from Rockwell Automation. This world-class performance comes in a small and competitively priced package. The PowerFlex 700 AC drive is designed to control three-phase induction motors in applications with requirements ranging from the simplest speed control to the most demanding torque control. The drive has volts per hertz, sensorless vector and vector control. Vector control includes Allen-Bradley's patented Force™ Technology which provides world class motor control.



## Flexible Packaging and Mounting

- **IP20, NEMA / UL Type 1** – For conventional mounting inside or outside a control cabinet. Conduit plate is removable for easy installation and replacement without disturbing conduit.
- **IP54, NEMA / UL Type 12** – Stand-alone, wall mount drives are available for dust tight applications with power ratings from 75 to 200 Hp (Frames 5 & 6).
- **IP54, NEMA / UL Type 12** – Flange mount drives with an IP00, NEMA / UL Type Open front. These can be installed in a user supplied cabinet to meet IP54, NEMA / UL Type 12. This allows the majority of heat to be exhausted out the back of the cabinet while keeping the cabinet protected. Power ratings range from 75 to 700 Hp (Frames 5...10).
- **Zero Stacking™** – Frame 0...6 drives can be mounted next to each other with no reduction of surrounding air temperature rating (50°C). This unique bookshelf design also allows access to one drive without disturbing another.

## Space Saving Hardware Features

- **Integral EMC Filtering** plus built-in DC bus choke common mode cores and common mode capacitors provides a compact, all-in-one package solution for meeting EMC requirements, including CE in Europe. Frames 0...6 only (Frames 7...10 meet CE when installed per recommendations).
- **Internal Communications** allow the user to integrate the drive into the manufacturing process. Status indicators for all internal communication options are visible on the cover for easy setup and monitoring of drive communications. Users can easily manage information from shop floor to top floor and seamlessly integrate their complete system as they control, configure and collect data.
- **Integral Dynamic Brake Transistor** delivers a cost effective means of switching regenerative energy without costly external chopper circuits. These internal transistors are available in power ratings from 0.5 to 200 Hp.
- **Internal Dynamic Brake Resistor** (up to 25 Hp) requires no extra panel space, and supplies a large amount of braking torque for short periods.

## Easy to Use Human Interface Tools

The PowerFlex 7-Class AC drives provide common Human Interface tools that are familiar and easy to use. These include the LCD Human Interface modules and PC-based configuration tools.

- LCD Human Interface modules provide:
  - Large and easy to read 7 line x 21 character backlit display
  - Variety of languages (English, French, German, Italian, Spanish, Portuguese, Dutch)
  - Alternate function keys for shortcuts to common tasks
  - “Calculator-like” number pad for fast and easy data entry (Full Numeric version only)
  - Control keys for local start, stop, speed, and direction
  - Remote versions for panel mount application

## Outstanding Control and Performance

**Multiple motor control** algorithms allow performance matched to the application need:

- **Volts/Hertz** for simple Fan and Pump applications.
- **Sensorless Vector** for high torque production over a wide speed range.
- **Vector** for outstanding torque regulation and excellent low speed/zero speed performance (w/Vector Control cassette).

The PowerFlex 700 drive's Vector Control uses Allen-Bradley's patented Force™ Technology which provides excellent low-speed performance - whether it is operated with or without feedback. While this industry-leading control provides the highest level of drive performance, it is as easy to use as any general purpose drive available.

