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PowerFlex[®] 4M



TECHNICAL DATA

ADJUSTABLE FREQUENCY AC DRIVES

Product Overview

Providing users with powerful motor speed control in a compact, space saving design, the Allen-Bradley® PowerFlex® 4M AC drive is the smallest and most cost effective member of the PowerFlex® family of drives. Ideal for machine level speed control, the PowerFlex 4M drive provides the application versatility to meet the demands of global OEMs and end users who require space savings and easy-to-use AC drives that provide application flexibility, feed-through wiring and ease-of-programming. The PowerFlex 4M AC drive is available in three frame sizes (A, B and C) and power ratings from 0.2 to 11 kW (0.25 to 15 Hp) and in voltage classes of 120, 240 and 480 volts.



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Reference Materials

For additional PowerFlex 4M data and general drive information, refer to the following publications:

Title	Publication	Available Online at . . .
PowerFlex 4M User Manual	22F-UM001...	www.rockwellautomation.com/literature
Wiring and Grounding Guidelines for PWM AC Drives	DRIVES-IN001...	
Preventive Maintenance of Industrial Control and Drive System Equipment	DRIVES-TD001...	
Safety Guidelines for the Application, Installation and Maintenance of Solid State Control	SGI-1.1	

For other information, contact Allen-Bradley Drives Technical Support:

Title	Online at . . .
Allen-Bradley Drives Technical Support	www.ab.com/support/abdrives

Start Up, Programming and Operation

- An **integral keypad** provides out of the box operation using the local potentiometer and control keys.
- The 12 most common application parameters are contained in the **Basic Program Group**, making programming fast and easy.
- The **programming keys** have the same function as all other PowerFlex drives, so if you can program one PowerFlex drive, you can program them all.
- **4 digit display** with 10 additional LED indicators provides an intuitive display of drive status and information.
- Integral **RS-485 communications** can be used for programming from a PC. It can also be used in a multi-drop network configuration. A serial converter module provides connectivity to any controller with a DF1 port.
- A **NEMA/UL Type 4X** remote and **NEMA/UL Type 1 hand-held LCD keypad** provide additional programming and control flexibility, both featuring the popular CopyCat function.



Packaging and Mounting

- Installation can be a virtual snap using the **DIN rail mounting** feature on A and B frame drives. Panel mounting is also available, providing added flexibility.
- **Zero Stacking™** is allowable for ambient temperatures up to 40°C, saving valuable panel space. 50°C ambient temperatures are permitted with minimal spacing between drives.
- Integral filtering is available on all 240V single phase and 480V three phase ratings, providing a cost-effective means of meeting EN61800-3. External filters for all PowerFlex 4M drive ratings are also available.



Optimized Performance

- **Removable MOV** to ground ensures reliable operation with ungrounded or resistive distribution systems.
- A **relay pre-charge** limits inrush current.
- **Integral brake transistor**, available on Frame C drives, provides dynamic braking capability with simple low cost brake resistors.
- DIP switch settable **24V DC sink or source control** for control wiring flexibility.
- 150% overload for 60 seconds or 200% overload for 3 seconds provides **robust overload protection**.
- Adjustable PWM frequency up to 10 kHz ensures quiet operation.
- Volts per Hertz Control Performance.
- Drive automatically provides auto boost (IR compensation) and slip compensation.
- Provides excellent speed regulation and high levels of torque across the entire speed range of the drive, and improved speed regulation even as loading increases.



Communications

- A **Serial Converter Module** provides connectivity to any controller that has the ability to initiate DFI messaging.
 - 22-SCM-232 – RS232/DF1 to RS 485/DSI
 - Bluetooth® - Wireless/DF1 to RS 485/DSI
- **Integral RS485/DSI communications** enable the drives to be used in a multi-drop network configuration.
- Integral communication cards such as **DeviceNet™**, **EtherNet/IP™**, **PROFIBUS™ DP**, **LonWorks®**, **BACnet®** and, **ControlNet™** can improve machine performance. These cards are optional and *can only be used with an external DSI communications kit*.
- The DSI Wireless Interface Module (WIM) provides a wireless communication interface between a Pocket PC, laptop computer or desktop computer equipped with Bluetooth® wireless technology, and any Allen-Bradley® product supporting the DSI™ protocol.
- RS485/DSI = Modbus RTU*
 - Directly compatible with PanelView products using RTU master capability
 - Direct compatibility with MicroLogix RTU master capability
 - Compatible with SLC-500 and ControlLogix, using 3rd-party scanners with RTU Master capability

Feed-through Wiring Design

- Feed through wiring for simple retrofitting into applications requiring variable speed motor control.
- Feed-through wiring design provides simple variable speed motor control with minimal installation and retrofitting time.

PC Programming Software

- Through the use of a Serial Converter Module and DriveExplorer™ or DriveTools™ SP software, programming can be greatly simplified.

DriveExplorer Software

- View and modify drive and adapter parameters in a method similar to the file management capability of Microsoft Windows Explorer.
- Operate the drive via an on-screen Control Bar, which is a tool that allows you to start, stop, and change the speed reference of the drive.
- Save, restore and print parameter information.
- Compare current parameters with factory defaults or previously saved parameter values.
- Edit, upload and download parameters.

DriveTools SP Software

- Online and offline programming capability
- In-grid and dialog-based parameter editing
- Immediate visual indication of drive and communication status when viewing online drive
- Integrated HTML Help architecture



