

# PRODUCT PROFILE

## PowerFlex® DC DRIVE

POWERFUL PERFORMANCE. FLEXIBLE CONTROL.

The Allen-Bradley® PowerFlex DC digital drive has been designed for the most demanding stand-alone and coordinated drive control and drive system applications. The PowerFlex DC drive combines powerful performance with flexible control to produce a highly functional, cost-effective drive and control solution.

The DC drive offers many features that allow the user to easily configure the drive for most application needs. Basic drive modules are available from 1.2-112 kW (1.5-150 Hp) at 240V AC and 1.5-298 kW (2-400 Hp) at 480V AC in both regenerative and non-regenerative configurations. The standard hardware offering consists of an open type enclosure, armature converter, regulated field converter for field weakening or economy applications, an advanced regulator with integrated DPI functionality, DC tachometer and encoder capability.

### Easy to Use

- Full-featured LCD Human Interface Module (HIM) with multi-line and multi-lingual display simplifies programming.
- PC tools such as DriveTools™ SP or RSLogix™ 5000, assist with programming, configuration, monitoring and troubleshooting
- DPI capability fully integrated into the regulator allows the DC drive to be fully compatible with all PowerFlex architecture class AC drive communication cards, HIM's, and software tools
- PowerFlex drives offer internal communication options helping the user to cost-effectively assemble highly integrated applications
- Status indicators for all internal communications options are visible on the cover for easy set-up and monitoring of drive communications
- Flash upgradeable – firmware can be updated anytime via DPI



### Integrated Installation

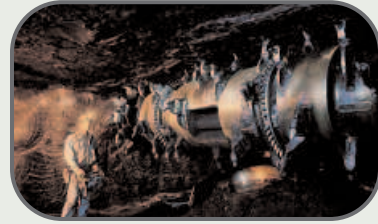
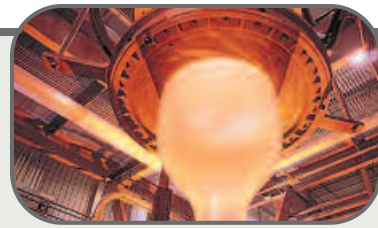
- Drive design incorporates proven noise and voltage suppression characteristics, reducing installation concerns for noise-sensitive environments
- Pull-apart control terminal blocks allow for easy wiring and quick disconnect
- The flexible feedback and communication options with in the PowerFlex DC drive assure an effective integration solution
- DC Tachometer and encoder feedback capabilities are embedded into the control circuitry as a standard feature, saving space and providing additional functionality
- The extensive I/O provides installation flexibility including up to 12 digital inputs and outputs as well as 3 analog inputs and 4 outputs
- Optimized global voltage settings designed to worldwide standards allow quick set-up anywhere in the world

### Premier Integration with PowerFlex Drives

For simplified drive start-up and reduced development time, the DC family of Allen-Bradley PowerFlex drives can be configured with RSLogix 5000 software. This single software approach simplifies parameter and tag programming while still allowing stand-alone drive software tool use on the factory floor.

The PowerFlex DC drive is ideal for applications and industries requiring rugged reliable drives capable of high overload torque, high shock loads, rapid accel/decel or continuous regeneration. The PowerFlex DC is also well suited for upgrading the power conversion and control of existing machinery already powered by DC motors.

- Craines and Hoists
- Extruders
- Metals and Wire
- Mining
- Petroleum
- Pulp & Paper
- Machinery Upgrades



## Easy-To-Use Human Interface Tools

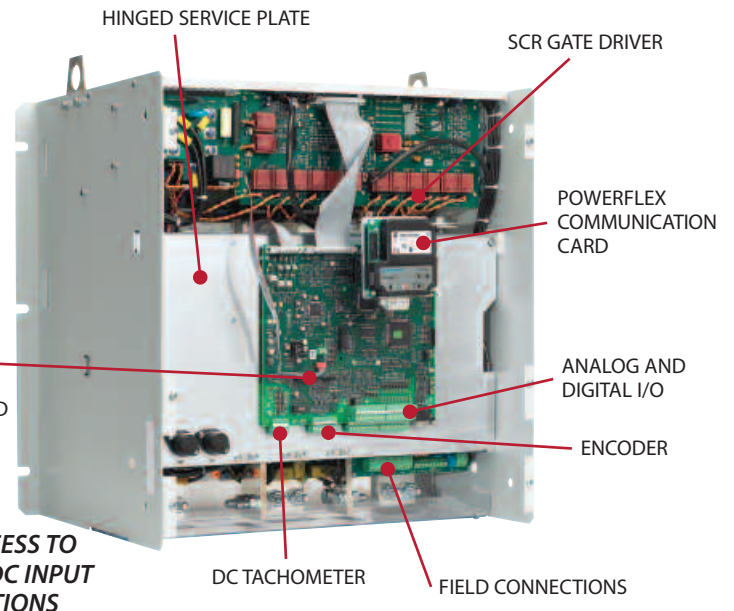
Easy PowerFlex LCD Human Interface Modules provide:

- Large and easy to read seven (7) line backlit display
- 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
- The Wireless Interface Module (WIM) provides a wireless communication interface between the drive and a laptop or desktop computer equipped with Bluetooth® wireless technology
- Remote versions for panel mount applications

### POWERFLEX DC FRAME A



### POWERFLEX DC FRAME C



# PowerFlex DC Configured Drives

To meet specific industry and application needs, Rockwell Automation offers a Configured PowerFlex DC Package. The configured DC drive program provides you with the ability to order a complete DC drive package, specified to meet your application's demands – one catalog number for a complete packaged drive solution.

The configured drives program offers pre-designed drives with options not available in the standard product catalog. Available in standard designs for applications requiring DC drives mounted in MCC enclosures or on rigid panels to be mounted in existing cabinets. Panel mount option allows users flexibility for application specific solutions.

A wide range of power, control, communication and operator devices ensure specific application requirements can be addressed. Drive enclosures can be sized and designed to meet most IP/NEMA/UL Type requirements. Additional engineered to order options allow for installation in any type of environment. Detailed product wiring documentation and consistent panel/ component layouts allow for faster start-up resulting in decreased installation costs.



## Standard Configured Drive Package Offers

- Pre-designed drive in MCC Cabinet
- Choice of cabinet or open panel
- Door mounted controls option
- HIM options
- I/O Expansion
- Communication cards
- Line Reactors
- Output Contactors
- Incoming Disconnects
- Fully compatible with PowerFlex DPI communications
- Short lead time
- Can be ordered through Passport

## Engineered To Order

If your application requires options not listed in the standard catalog, please contact your local drives solution center or local distributor specialist to inquire about our PowerFlex DC drives Engineered To Order (ETO) program where we engineer a customized solution to best fit your application needs.

## Expertise & Support - From Local Drive Solution Centers

### 11 Regional Local Drive Solution Centers

#### WEST

Los Angeles  
Denver  
Houston

#### WEST CENTRAL

Chicago  
Minneapolis  
St. Louis

#### EAST CENTRAL

Cincinnati  
Atlanta

#### EAST

Cleveland  
Edison  
Charlotte

## Packaged DC Drive Solutions to Meet Your Application Demands

For applications where horsepower requirements approach or exceed 3000 HP, Rockwell Automation offers the 2361 DC drive and the SD3000 PLUS DC drive control. These drives deliver proven performance to 3000 HP with parallel SD3000 PLUS configurations up to 6000 HP.

The SD3000 PLUS is ideal for applications from 240 to 750V DC and offers S6 and S12 capability for low harmonics. Suitable for regenerative or non-regenerative applications along with motor-generator set compatibility. Motor-generator sets can also be retrofit candidates for the SD 3000 PLUS package. The SD3000 PLUS also offers the ability to interface to an installed DC SCR Power Bridge.

For more information, please contact your Local Drive Solution Center for more design and application details on this family of products and solutions.

## Configured Drive Cabinet Designs

MCC Style Enclosure

NEMA 1 with Fans and Filters

External Mounting Channel and Lifting Angle

Top Entry and Bottom Exit for Standard Enclosures

Enclosure Sizes:

20"W x 90"H x 25"D

25"W x 90"H x 25"D

30"W x 90"H x 25"D

35"W x 90"H x 25"D

Two Panel Sizes:

20"W x 78"H – For 24"W x 90"H Enclosure

32"W x 78"H – For 36"W x 90"H Enclosure

# Unsurpassed Capability In Network Communication

The Allen-Bradley PowerFlex family of drives uses Rockwell Automation's NetLinx Open Network Architecture. This provides the common set of features and services for DeviceNet™, ControlNet™, and EtherNet/IP™ networks resulting in lower total cost of ownership. Users can easily manage information from shop floor to top floor and seamlessly integrate their complete system as they control, configure, and collect data.

PowerFlex DC drives are fully compatible with Allen-Bradley drive's wide variety of DPI communication adapters, offering the following benefits:



BACnet®	DeviceNet	ControlNet	EtherNet/IP	Remote I/O	RS-485 DFI	Profibus DP	Interbus	LonWorks	Modbus RTU	Metasys N2	Siemens PT FLN	Bluetooth®	
	✓	✓	✓										<b>Unconnected Messaging</b> permits other network devices (e.g. PanelView) to communicate directly to a drive without routing the communication through the network scanner.
✓	✓	✓	✓		✓							✓	<b>Adapter Routing</b> -- Plug PC into one drive and talk to other Allen-Bradley drives on same network, without being routed through the network scanner.
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<b>Access to 100% of all parameters</b> over the network.
✓	✓		✓			✓						✓	<b>AutoBaud</b> capability makes initial connections less problematic.
	✓												<b>Change Of State</b> significantly reduces network traffic by configuring control messages to be sent only upon customer defined states. Very flexible configuration for each node (Example: "reference must change by more than 5%").
	✓		✓										<b>Peer Control</b> provides master slave type control between drives, where one or more slave drives (consumers) can run based on the status of a master drive (producer), which can also significantly reduce network traffic.
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<b>Flexible Fault Configuration</b> – Adapters can be programmed to take fault based actions such as ramp to stop, coast to stop, and hold last state, as well as send user configurable logic control and speed reference values. In addition, different actions can be taken based on whether the network experienced a serious problem (broken cable etc.) versus a network idle condition (PLC set to "Program").

## PowerFlex DC Drive Specifications

### Control I/O

- Up to 12 digital outputs
- 12 programmable digital inputs
  - 24V DC sink/source (115V AC adapter available)
- 4 analog output 0-10V
- 3 analog inputs
  - 1 unipolar 0-10V or 4-20mA
  - 1 bipolar -10 to +10V or 4-20mA

### Standards

- UL and cUL (CSA) Listed
- C-Tick
- EMC EN61800-3
- Low Voltage EN60204-1/EN50178
- RINA Certified

### Input Specifications

3-Phase Voltage: 460/230V  
 Frequency: 50 and 60 Hz +/- 5%

### Output Specifications

Voltage: Adjustable from 0V to rated motor voltage  
 0-500VDC  
 Overload Current: 150% for 60 seconds, 200% for 3 Seconds

### Enclosure and Ambient Operating Temperatures

Drive – IP20, NEMA/UL Type 0 0° - 50° C without derating  
 Enclosure – NEMA/UL Type 1 0° - 45° C  
 Panel Mount – IP00, NEMA UL Type 0 0° - 45° C

### Dimensions

Frame A	Frame B	Frame C
1.5 – 30 HP @ 230VAC	40 – 125 HP @ 230 VAC	150 HP @ 230 VAC
2 – 75 HP @ 460VAC	100 – 250 HP @ 460 VAC	300 – 400 HP @ 460 VAC
10.5"W x 14"H x 11"D	12"W x 15"H x 14"D	20.5"W x 20" H x 16" D

[www.rockwellautomation.com](http://www.rockwellautomation.com)

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