PowerFlex Low Voltage AC Drives

Powerful Performance. Flexible Control.

LISTEN.
THINK.
SOLVE.®

AB QUALITY **Allen-Bradley** • **Rockwell Software**

Rockwell Automation

PowerFlex Drives

Focus on the Benefits that Make a Difference for Your Bottom Line.
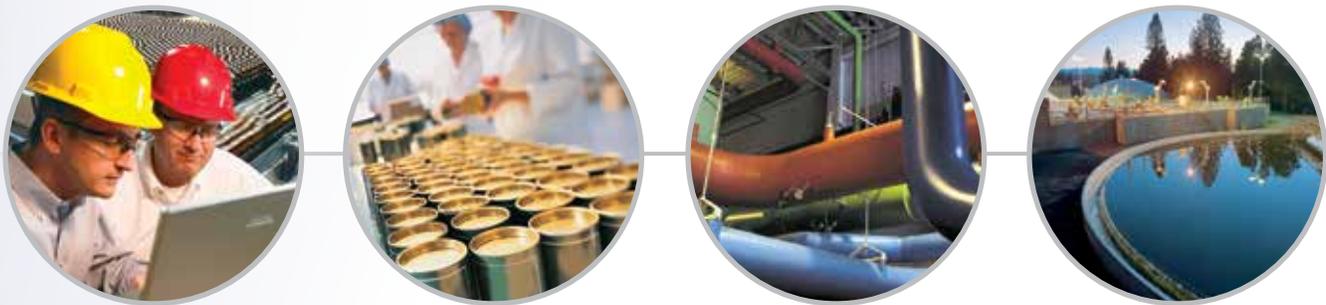
The Allen-Bradley® PowerFlex® family of AC drives has been developed to provide the benefits that matter most to you. Our focus is on delivering a flexible portfolio designed to keep you connected to your operations and ultimately improve productivity – because helping you succeed is what matters to us.

Flexibility allows PowerFlex drives to meet a wide variety of application requirements. By offering a broad range of motor control and power solutions, PowerFlex drives are able to handle the simplest to the most demanding applications. The family also features a wide selection of hardware, software, safety and packaging options to help fit your needs. Flexibility helps you:

- Reduce total cost of ownership by selecting a drive built for your application requirements, with as many or as few options as the application requires
- Boost productivity with specific application control such as TorqProve™ for lifting applications and Pump-Off for oil wells
- Use a drive that is well suited for your application conditions and environments. Choose from packaging options that range from highly flexible IP00 open styles to extra protection for harsh environments
- Select the safety features and method of implementation that work best for your application

Connectivity is a key to monitoring your application and taking the appropriate actions to maintain smooth operations. The seamless flow of real-time information within your application can help to enhance the agility and productivity of your machine. PowerFlex drives offer features that can help you easily manage data throughout your operations. As part of the Rockwell Automation Integrated Architecture®, the drives can do much more than just respond to interlocking commands. They provide the capability to help you:

- Gain visibility to system and machine level data
- Benefit from communication choices that include drives with built-in EtherNet/IP along with options that support a variety of other industrial networks
- Software tools help ease and enhance the configuration experience
- Faster troubleshooting with diagnostic information easily retrieved from the controller
- Ability to enable remote monitoring for visibility and communications between plant floor and control room

Productivity is one of your biggest concerns. You know how important it is but does selecting the right drive really make a difference? It does when you select a PowerFlex drive that offers:

- Safety features that help protect personnel and assets while enabling reduced downtime
- Premier Integration into the Logix environment for streamlined configuration and programming
- Faster time to market with reduced development and commissioning time
- Protection against unplanned downtime with advanced diagnostics and notification of irregular operating parameters
- Access to real time data, allowing information-enabled decisions which help reduce downtime and keep production running smoothly

64%
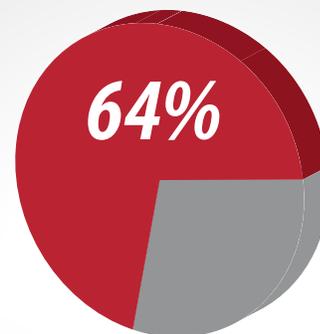
In a 2015 survey of Rockwell Automation customers, 64% of the respondents using PowerFlex drives indicated that Premier Integration allowed them to reduce engineering time – by as much as 75%!

Premier Integration

Streamline Design, Operation and Maintenance

The integration of Allen-Bradley motor control devices into the Logix control platform helps reduce your programming time, ease startup and commissioning, and streamline diagnostics. By providing consolidated controller programming and device system configuration, operation and maintenance in a single software environment – Studio 5000 Logix Designer® – Premier Integration helps reduce complication and errors.

- A single software solution providing intuitive programming for discrete, process, batch, motion, safety and drive-based applications
- Configuration is centralized in the Studio 5000 environment for both the controllers and the drives
- Drive configuration is saved as part of the Studio 5000 Logix Designer project file and also stored in the Logix controller, so there's no need to store and maintain multiple files. You only need one file for both the controller and all drive configurations
- Diagnostic, fault, alarm and event information are integral to the Studio 5000 environment
- Advanced graphical wizards walk you through drive configuration

Studio 5000 software can help reduce programming time by automatically populating drive parameters in the controller memory as controller tags.

- Descriptive tag names are automatically generated
- Address mismatch errors can be reduced
- Copy and paste function makes duplicating drives fast and easy

Automatic Device Configuration

Automatic Device Configuration (ADC) allows Logix controllers to detect a replaced PowerFlex drive and download all configuration parameters automatically, minimizing the need for manual reconfiguration. This feature helps to enhance productivity by facilitating reduced downtime.
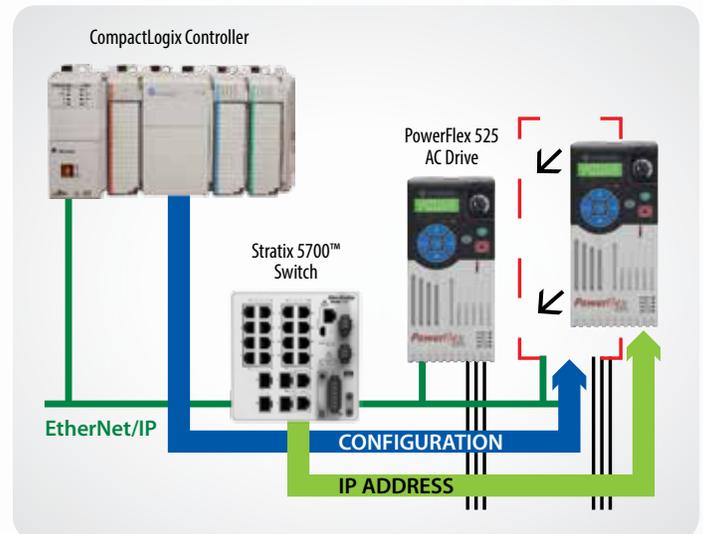
ADC is available with PowerFlex 520-Series and 750-Series drives.*

- PowerFlex 525 and 755 drives feature a built-in EtherNet/IP port to achieve ADC
- PowerFlex 527 drives require a Logix controller for operation so that all drive information is stored in the controller, supporting fast, automatic device replacement
- Stratix 5700™, Stratix 6000™ and Stratix 8000™ switches provide automatic IP address assignment

* PowerFlex 523 and 753 drives require a dual-port EtherNet/IP communication card for ADC.

Drive Programming with Studio 5000 Logix Designer Integrated Motion Instructions

PowerFlex 755 and PowerFlex 527 drives can be programmed using integrated motion instructions in the Studio 5000 environment. A variable frequency drive that is configured and programmed like a servo drive can reduce complexity and save valuable engineering time by using a single software package with common instructions for both types of drives.

This level of integration provides exclusive application resources that offer additional time-saving features and performance enhancements.

- Streamline your machine design with AC drives that are configured and programmed the same way as Kinetix servo drives

- Using integrated motion instructions allows code reuse which helps make machine design more efficient
- Powerful diagnostics, including time-stamped events, provide precise drive information to help you more quickly identify and resolve problems
- Synchronization – from very simple electronic gearing to electronic camming – can be accomplished using just a few instructions. Synchronization can be done over the network without the need for any additional hardware devices
- The Logix controller maintains every aspect of the drive's parameters and resets them each time it connects to the drive. This creates inherent device replacement to help minimize machine downtime

3

PowerFlex 520-Series AC Drives

The Next Generation of Powerful Performance. Flexible Control.

Allen-Bradley PowerFlex 520-Series AC drives combine innovation and ease of use to provide motor control solutions designed to maximize your system performance and reduce your time to design and deliver better machines. Each of the three drives in this family offers a unique set of features to distinctively match the needs of your application.

PowerFlex 523 AC drives are ideal for machines that require cost-effective motor control. They are designed to help reduce installation and configuration time while providing the control your application needs.

- Standard USB for upload/download drive configuration
- Simplified configuration with human interface module (HIM) and Connected Components Workbench™ software tools
- Optional communication modules make it easy to add drive to a network

PowerFlex 525 AC drives are ideal for machines with simple system integration and offer standard features including safety and a built-in port for EtherNet/IP.

- Seamless integration into Logix control architectures along with Automatic Device Configuration
- Flexible motor control and installation options
- Optional communication modules make it easy to add drive to a network

PowerFlex 527 AC drives are designed to be used with an Allen-Bradley Logix Programmable Automation Controller (PAC). Ideal for machines that can benefit from the same drive configuration experience for both servo and AC drives , this new approach to motor control helps to reduce engineering time and enhance motor coordination for improved machine performance.

- Safe Torque Off is a standard feature that can be applied through either hardwired safety or Integrated Safety which is controller based and delivered via an EtherNet/IP network
- Built-in dual-port EtherNet/IP supports multiple network topologies and Device Level Ring functionality
- For applications that require both simple speed control as well as precise motor functionality, a combination of AC and servo drives is the logical solution. The PowerFlex 527 AC drive can manage the simple speed control while a Kinetix® servo drive handles the more precise motor control operations involving speed, torque and position control

Simplified Programming – MainsFree™ programming allows configuration files to be uploaded and downloaded to the PowerFlex 525 and PowerFlex 523 drive control module via a USB connection.

Innovative Design – A modular design allows you to install a PowerFlex 525 or PowerFlex 523 drive power module and configure a control module at the same time.

High Operating Temperature – A control module fan kit allows PowerFlex 520-Series AC drives to run in temperatures up to 70°C (158°F) with current derating.

Flexibility – All PowerFlex 520-Series drives can be installed vertically or horizontally as well as side by side in either orientation. A control module fan kit is required for horizontal mounting.

PowerFlex 750-Series AC Drives

Bringing flexibility, connectivity and productivity to your application.

The PowerFlex 753 and 755 AC drives were designed with your needs in mind. Your need for flexibility, connectivity and productivity has been considered in every detail of these drives. The result is a family of AC drives that provides an exceptional user experience, from initial programming through operation and maintenance. Offering more selection for control, communications, safety and supporting hardware options than any other drives in their class, PowerFlex 750-Series AC drives provide the features you need to help maximize your productivity.

PowerFlex 753 AC drives are cost-effective and easy to use for more general purpose applications. They come standard with built-in I/O, and offer three options slots for communications, safety and additional I/O. Designed to meet your application requirements for speed or torque control up to 250 kW/350 Hp.

- Embedded I/O along with three option slots for safety, feedback, communications, 24V power or additional I/O make the drive a flexible, cost-effective solution
- Safe Torque Off and Safe Speed Monitor options help to protect personnel and assets while reducing downtime

PowerFlex 755 AC drives provide ease of use, application flexibility and high performance. They include multiple control, hardware, and safety options. These drives are well-suited for a wide variety of applications with multiple motor control selections. Built-in EtherNet/IP delivers real time operating data and easily integrates into the Logix control system. Ideal for applications requiring position, speed or torque control up to 1500 kW/2000 Hp.

- Seamless integration into Logix control architectures along with Automatic Device Configuration
- Built-in single port EtherNet/IP plus five option slots to support additional options for feedback, I/O, safety, communications and auxiliary 24V DC control power
- Safety options include Safe Torque Off and Safe Speed Monitor
- Ideal for coordinated drive systems applications, positioning applications and lifting applications (TorqProve)
- DeviceLogix™ to complement system capabilities for machine programming
- Option to use integrated motion instructions within Studio 5000® to help reduce engineering time for applications using both AC and servo drives

Communications – The PowerFlex 750-Series AC drives support a comprehensive range of network protocols to ease integration into your architecture. The PowerFlex 755 features a built-in EtherNet/IP port, allowing you to easily manage drive data over EtherNet/IP networks. In addition, an optional dual-port EtherNet/IP option module supports multiple network topologies and Device Level Ring functionality for both the PowerFlex 753 and 755 drives.

Safe Torque Off and Safe Speed Monitor – Help protect personnel and equipment while reducing machine downtime with safety solutions up to and including PLe/SIL3, Cat 3 and Cat 4.

Power and Packaging – Complete power range of 0.75 to 1500 kW (1 to 2000 Hp) plus 400/480 and 600/690 volt availability for global applications. Packaging options range from highly flexible IP00 open styles to MCC-Style cabinets and other features that help provide additional protection.

Predictive Diagnostics – Help reduce unplanned downtime with predictive diagnostics and built-in protection features designed to guard your investment. Advanced notification of required maintenance helps you schedule downtime to be as productive as possible, and reduce costs due to unscheduled downtime.

Configure for Your Application – The drives have a slot-based hardware architecture that gives you the flexibility to select up to five option cards to suit your application and expand your drive for future needs. Option cards for safety, feedback, communications, I/O and auxiliary 24V DC control power can be easily added to the drives if and when you want them – without the need to make any other hardware changes.

POWERFLEX AC DRIVES

	PowerFlex 4M AC Drive	PowerFlex 523 AC Drive	PowerFlex 525 AC Drive	PowerFlex 527 AC Drive
Motor Control	• Volts per Hertz	• Volts per Hertz • Sensorless Vector Control	• Volts per Hertz • Sensorless Vector Control • Closed Loop Velocity Vector Control • Permanent Magnet Motor Control**	• Volts per Hertz • Sensorless Vector Control • Closed Loop Velocity Vector Control
Application	• Open Loop Speed Regulation	• Open Loop Speed Regulation	• Open Loop Speed Regulation • Closed Loop Speed Regulation	• Open Loop Speed Regulation • Closed Loop Speed Regulation
Ratings 100-115V 1 Phase In/3 Phase 230V Out	• 0.2...1.1 kW • 0.25...1.5 Hp • 1.6...6 A	• 0.2...1.1 kW • 0.25...1.5 Hp • 1.6...6 A	• 0.4...1.1 kW • 0.5...1.5 Hp • 2.5...6 A	• 0.4...1.1 kW • 0.5...1.5 Hp • 2.5...6 A
Ratings 200-240V	• 0.2...7.5 kW • 0.25...10 Hp • 1.6...33 A	• 0.2...15 kW • 0.25...20 Hp • 1.6...62.1 A	• 0.4...15 kW • 0.5...20 Hp • 2.5...62.1 A	• 0.4...15 kW • 0.5...20 Hp • 2.5...62.1 A
Ratings 400-480V	• 0.4...11 kW • 0.5...15 Hp • 1.5... 24 A	• 0.4...22 kW • 0.5...30 Hp • 1.4...43 A	• 0.4...22 kW • 0.5...30 Hp • 1.4...43 A	• 0.4...22 kW • 0.5...30 Hp • 1.4...43 A
Ratings 500-600V	• N/A	• 0.4...22 kW • 0.5...30 Hp • 0.9...32 A	• 0.4...22 kW • 0.5...30 Hp • 0.9...32 A	• 0.4...22 kW • 0.5...30 Hp • 0.9...32 A
Ratings 690V	• N/A	• N/A	• N/A	• N/A
Ambient Temperature * Limit for Enclosure Types	• IP20: –10 to 50 °C (14 to 122 °F) • IP20 zero stacking: –10 to 40 °C (14 to 104 °F)	• IP20: –20 to 50 °C (-4 to 122 °F) • IP20 Zero Stacking: –20* to 45 °C (-4 to 113 °F) • IP20: –20 to 60 °C (140 °F), with current derating • IP20: –20 to 70 °C: (158 °F) with current derating and optional control module fan kit	• IP20: –20 to 50 °C (-4 to 122 °F) • IP20 Zero Stacking: –20* to 45 °C (-4 to 113 °F) • IP20: –20 to 60 °C (140 °F), with current derating • IP20: –20 to 70 °C: (158 °F) with current derating and optional control module fan kit	• IP20: –20 to 50 °C (-4 to 122 °F) • IP20 Zero Stacking: –20* to 45 °C (-4 to 113 °F) • IP20: –20 to 70 °C: (158 °F) with current derating and optional control module fan kit
EMC Filters	• Internal (1 phase 240V and 3 phase 480V) • External (1 & 3 phase)	• Internal (1 phase 240V and 3 phase 480V) • External (1 & 3 phase)	• Internal (1 phase 240V and 3 phase 480V) • External (1 & 3 phase)	• Internal (1 phase 240V and 3 phase 480V) • External (1 & 3 phase)
Standards and Certifications	• c-UL, UL, CE, RCM, RoHS	• ACS 156, c-UL, UL, CE, EAC, KCC, RCM, REACH, RoHS, SEMI F47	• ACS 156, ATEX, c-UL, UL, CE, EAC, EPRI/SEMI F47, KCC, Lloyd's Register, RCM, RoHS, TÜV FS ISO/EN13849-1	• ACS 156, ATEX, c-UL, UL, CE, EAC, EPRI/SEMI F47, KCC, Lloyd's Register, RCM, RoHS, TÜV FS ISO/EN13849-1
Overload Capability	• 150% for 60 s • 200% for 3 s	• Normal Duty Application: 110% – 60 s, 150% – 3 s (For 20 Hp & above) • Heavy Duty Application: 150% – 60 s, 180% – 3 s (200% – 3 s programmable)	• Normal Duty Application: 110% – 60 s, 150% – 3 s (For 20 Hp & above) • Heavy Duty Application: 150% – 60 s, 180% – 3 s (200% – 3 s programmable)	• Normal Duty Application: 110% – 60 s, 150% – 3 s (For 20 Hp & above) • Heavy Duty Application: 150% – 60 s, 180% – 3 s (200% – 3 s programmable)
Output Frequency Range	• 0...400 Hz	• 0... 500 Hz	• 0... 500 Hz	• 0... 590 Hz
User Interface	• Local Keypad • Remote Keypad • Studio 5000 • Connected Components Workbench (CCW)	• 5 Digits, 16 segments QuickView™ LCD display with multiple languages and local keypad • Remote Keypad • MainsFree™ Programming via USB • Application specific parameter group AppView® and CustomView™ • Studio 5000 • Connected Components Workbench (CCW)	• 5 Digits, 16 segments QuickView™ LCD display with multiple languages and local keypad • Remote Keypad • MainsFree™ Programming via USB • Application specific parameter group AppView™ and CustomView™ • Studio 5000 • Connected Components Workbench (CCW)	• Studio 5000 Logix Designer V24 or higher
Communications Options	• Integral RS485 (Modbus RTU) • Optional: *DeviceNet, *EtherNet/IP, *PROFIBUS DP, *ControlNet, *LonWorks®, *Bluetooth® *Optional network for use only with DSI External Communications Kit	• Integral RS485 (Modbus RTU) • Optional: Dual-port EtherNet/IP, DeviceNet, PROFIBUS DP	• Embedded EtherNet/IP Port • Integral RS485 (Modbus RTU) • Optional: Dual-port EtherNet/IP, DeviceNet, PROFIBUS DP	• Embedded Dual-port EtherNet/IP
Analog Inputs	• Qty. 1 (unipolar voltage)	• Qty. 1 (unipolar voltage or current)	• Qty. 2 (1 bipolar voltage, 1 current)	• Qty. 2 (1 bipolar voltage, 1 current)
Analog Outputs	• None	• None	• Qty: 1 (unipolar voltage or current)	• Qty: 1 (unipolar voltage or current)
PTC Inputs	• Qty. 1 (uses an Analog Input)	• Qty. 1 (uses an Analog Input)	• Qty. 1 (uses an Analog Input)	• Qty. 1 (uses an Analog Input)
Digital Inputs	• Qty. 5 (24V DC, 2 programmable)	• Qty: 5 (24V DC, 4 programmable)	• Qty: 7 (24V DC, 6 programmable)	• Qty: 4 (24V DC, 3 programmable)
Relay Outputs	• Qty. 1 (form C)	• Qty. 1 (form C)	• Qty: 2 (1 form A Relay, 1 form B Relay)	• Qty: 2 (1 form A Relay, 1 form B Relay)
Transistor Outputs	• None	• None	• Qty. 2	• Qty. 2
Dynamic Braking	• Internal IGBT except catalog numbers ending in "3"	• Internal IGBT	• Internal IGBT	• Internal IGBT
Safety	• No	• No	• Built-in Safe Torque Off, SIL2, PLd, Cat 3	• Built-in Safe Torque Off, SIL 3 / PLe Cat 3 • Built-in Integrated Safety SIL 3 / PLe Cat 3

* Environmental considerations may apply

**Permanent magnet motor control is scheduled for a future firmware release

	PowerFlex 70 AC Drive	PowerFlex 753 AC Drive	PowerFlex 755 AC Drive
POWERFLEX AC DRIVES			
Motor Control	• Vector Control w/FORCE Technology with or without an encoder • Sensorless Vector Control • Volts per Hertz	• Vector Control w/FORCE Technology with or without an encoder • Sensorless Vector Control • Volts per Hertz • Permanent Magnet Motor Control (Interior)	• Vector Control w/FORCE Technology with or without an encoder • Sensorless Vector Control • Volts per Hertz • Surface Mount and Interior Permanent Magnet Motor Control (with and without encoder) Frames 2 - 7; (with encoder) Frames 8 - 10
Application	• Open Loop Speed Regulation • Closed Loop Speed Regulation • Precise Torque and Speed Regulation	• Open Loop Speed Regulation • Closed Loop Speed Regulation • Precise Torque and Speed Regulation • Indexer Positioning	• Open Loop Speed Regulation • Closed Loop Speed Regulation • Precise Torque and Speed Regulation • Accurate Positioning with PCAM, Indexer and Gearing
Single-phase Input w/Derate	• Yes	• Yes	• Yes (frames 1-7)
Ratings 200-240V	• 0.37...18.5 kW • 0.5...25 Hp • 2.2...70 A	• N/A	• N/A
Ratings 400-480V	• 0.37...37 kW • 0.5...50 Hp • 1.1...72 A	• 0.75...270 kW • 1...400 Hp • 2.1...477 A	• 0.75...1400 kW • 1...2000 Hp • 2.1...2330 A
Ratings 500-600V	• 0.37...37 kW • 0.5...50 Hp • 0.9...52 A	• 1...300 Hp • 1.7... 289 A	• 1...1500 Hp • 1.7...1530 A
Ratings 690V	• N/A	• 7.5...250 kW • 12...263 A	• 7.5...1500 kW • 12...1485 A
Ambient Temperature Limit for Enclosure Types	• IP20, NEMA/UL Type 1: 0 to 50 ˚C (32 to 122 ˚F) • Flange Mount: 0 to 50 ˚C (32 to 122 ˚F) • IP66, NEMA/UL Type 4X/12 indoor: 0 to 40 ˚C (32 to 104 ˚F)	• IP00/IP20, NEMA/UL Open Type = 0-50 ˚C (32-122˚F)** • NEMA/UL Type 1 Kit = 0-40 ˚C (32-104 ˚F) • Flange Mount Front: IP00/IP20, NEMA/UL Open Type = 0-50 ˚C (32-122 ˚F)** • Flange Mount Back: IP66, NEMA/UL Type 4X = 0-40 ˚C (32-104 ˚F) • IP54, NEMA/UL Type 12 = 0-40 ˚C (32-104 ˚F)	• IP00/IP20, NEMA/UL Open Type = 0-50 ˚C (32-122 ˚F)** • Flange Mount Front: IP00/IP20,NEMA/UL Open Type = 0-50˚C (32-122˚F)** • Flange Mount Back: IP66, NEMA/UL Type 4X = 0-40 ˚C (32 -104 ˚F) • IP54, NEMA/UL Type 12 = 0-40 ˚C (32-104 ˚F) • Frames 8-10: 50˚C with derating
EMC Filters	• Internal	• Internally mounted option	• Internally mounted option
Standards and Certifications	• ABS, c-UL-us, CE*, EAC, IEC (Designed to Meet), KCC, Lloyd's Register, NSF Certified (IP66, NEMA/UL Type 4X/12 only), RCM (excluding 600V), RoHS, SEMI F47, Trentec, TÜV FS ISO/EN13849-1 with Safe Torque Off option	• ABS, ATEX***, c-UL-us, CE, EAC, EPRI/SEMI F47, TÜV FS ISO/EN13849-1 for Safe Torque Off and Safe Speed Monitor options, Lloyd's Register, KCC, RCM, RINA, RoHS compliant materials	• ABS, ATEX***, c-UL-us, CE, EAC, EPRI/SEMI F47, TÜV FS ISO/EN13849-1 for Safe Torque Off and Safe Speed Monitor options, Lloyd's Register, KCC, RCM, RINA, RoHS compliant materials
Overload Capability	• Normal Duty Application • 110% – 60 s, 150% – 3 s • Heavy Duty Application • 150% – 60 s, 200% – 3 s	• Normal Duty Application • 110% – 60 s, 150% – 3 s • Heavy Duty Application • 150% – 60 s, 180% – 3 s	• Normal Duty Application • 110% – 60 s, 150% – 3 s • Heavy Duty Application • 150% – 60 s, 180% – 3 s • Light Duty Application (frames 8-10) • 110% – 60 s
Output Frequency Range	• 0 – 500 Hz	• 0...325 Hz @ 2 kHz PWM • 0...590 Hz @ 4 kHz PWM****	• 0...325 Hz @ 2 kHz PWM • 0...590 Hz @ 4 kHz PWM****
User Interface	• Local PowerFlex HIMs • Remote PowerFlex HIMs • Studio 5000 • Connected Components Workbench (CCW)	• Local PowerFlex HIMs • Remote PowerFlex HIMs • Studio 5000 • Connected Components Workbench (CCW)	• Local PowerFlex HIMs • Remote PowerFlex HIMs • Studio 5000 • Connected Components Workbench (CCW)
Communications Options	• Internal DPI • DeviceNet • ControlNet (Coax or Fiber) • EtherNet/IP • Remote I/O • RS485 DF1 • BACnet • RS485 HVAC (Modbus RTU, Metasys N2, Siemens P1) • PROFIBUS DP • Interbus • External SCANport • Modbus/TCP • CANopen • LonWorks	• Single or Dual-port Ethernet/IP options • ControlNet (Coax or Fiber) • DeviceNet • Remote I/O • RS485 DFI • PROFIBUS DP • BACnet/IP • Modbus/TCP • HVAC (Modbus RTU, FLN P1, Metasys N2) • ProfiNet IO • LonWorks • CANopen	• Built-in EtherNet/IP port or Dual-port EtherNet/IP option module • ControlNet (Coax or Fiber) • DeviceNet • Remote I/O • BACnet/IP • RS-485 DFI • PROFIBUS DP • Modbus/TCP • HVAC (Modbus RTU, FLN P1, Metasys N2) • ProfiNet IO • LonWorks • CANopen
Conformal Coating	• Standard	• Standard	• Standard
Analog Inputs	• Qty. 2 (1 bipolar voltage or current, 1 unipolar voltage or current)	• Up to 7 total (bipolar voltage or current)	• Up to 10 total (bipolar voltage or current)
Analog Outputs	• Qty. 1 (unipolar voltage or current)	• Up to 7 total (bipolar voltage or current)	• Up to 10 total (bipolar voltage or current)\
PTC Inputs	• Qty. 1 (uses an Analog Input)	• Up to 3 total	• Up to 5 total
Digital Inputs	• Qty. 6 (24V DC or 115V AC, option card required for 115V)	• Up to 21 total (Qty. 21 – 24V DC or Qty. 19 – 115V AC)	• Up to 31 total (24V DC or 115V AC)
Relay Outputs	• Qty. 2 (form C)	• Up to 7 total (form C)	• Up to 10 total (form C)
Transistor Outputs	• None	• Up to 7 total	• Up to 10 total
Internal Brake Transistor	• Standard	• Standard (frames 1-5) Optional (frame 6-7)	• Standard (frames 1-5) Optional (frame 6-7); frames 8-10 require external brake module
AC Input Choke	• No	• No	• No
DC Link Choke	• FR C-E Yes	• Yes	• Yes
Common Mode Choke	• External option	• External option	• External option
Safety	• Safe Torque Off SIL2, PLd, Cat 3 - option	• Safe Torque Off SIL3, PLe, Cat 3 with option card • Safe Speed Monitor SIL3, PLe, Cat 4 with option card	• Safe Torque Off SIL3, PLe, Cat 3 with option card • Safe Speed Monitor SIL3, PLe, Cat 4 with option card
	* CE certification testing has not been performed on 600V drives	**Frame 7, 477A Output, All Enclosures = 0-40 ˚C (32-104 ˚F) *** Requires 11-Series I/O and ATEX daughter card options **** Derating @4 kHz; see tech specs	**Frame 7, 477A Output, All Enclosures = 0-40 ˚C (32-104 ˚F) *** Requires 11-Series I/O and ATEX daughter card options **** Derating @4 kHz; see tech specs

Tools and software designed to help improve productivity

Rockwell Automation helps make configuration and programming fast and uncomplicated with a choice of easy-to-use software packages and tools. Each tool has been designed to be powerful and intuitive to help enhance your user experience and reduce your development time so you can deliver faster and more efficiently.

Connected Components Workbench Software

Connected Components Workbench™ programming and configuration software leverages proven Rockwell Automation and Microsoft® Visual Studio® technologies for fast and easy drive configuration, controller programming, and integration with the HMI editor.

Studio 5000 Logix Designer Software

The Rockwell Automation Integrated Architecture™ system provides a convergence of control and information to help you achieve plant-wide optimization. At the heart of an Integrated Architecture system, the Studio 5000 environment serves as a single programming tool for the design and configuration of your application.

Drives and Motion Accelerator Toolkit

Design tools to help you reduce the time and cost of developing a new application using PowerFlex AC drives and Kinetix servo drives. The free toolkit includes the powerful System Development Wizard which takes system data entered by the designer and automatically generates the files you need to jumpstart your design.

To learn more about the toolkit or to download a free copy, please visit: *www.ab.com/go/iatools*

Connectivity Throughout Your Enterprise

The use of an EtherNet/IP network allows your PowerFlex drives to connect to Integrated Architecture applications and function as an integral device within the system. This established, broadly adopted network helps simplify and enhance machine design and operation while keeping data seamlessly flowing throughout your enterprise.

- Low cost, high performance and easy to use compared to a multi-network architecture
- Easily integrate any PowerFlex drive, I/O, smart actuators and any other EtherNet/IP connected device
- Dual-port EtherNet/IP connectivity supports linear and ring topologies as well as Device Level Ring (DLR) functionality to help optimize drive availability

PanelView™ Plus 7 Performance Graphic Terminal with built-in dual EtherNet/IP ports

CompactLogix™ Controller

PowerFlex 527 AC drive with standard built-in dual-port EtherNet/IP

POINT I/O™

PowerFlex 525 AC drive with optional dual-port EtherNet/IP card

ArmorBlock® I/O

PowerFlex 755 AC drive with dual-port EtherNet/IP option module
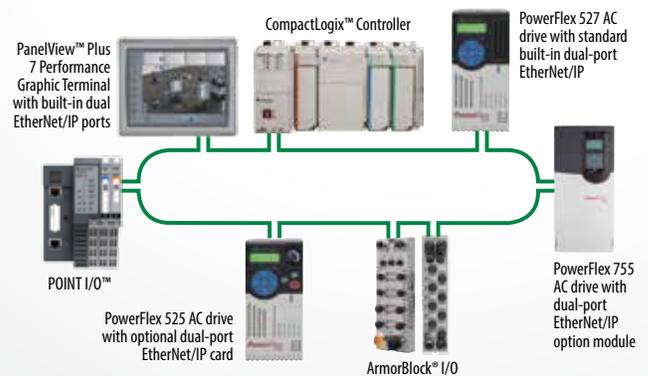
Rockwell Automation, Inc. (NYSE:ROK), the world's largest company dedicated to industrial automation, makes its customers more productive and the world more sustainable. Throughout the world, our flagship Allen-Bradley® and Rockwell Software® product brands are recognized for innovation and excellence.

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