

PowerFlex® 755 AC Drive

Designed for Ease of Use, Integration,
Application Flexibility and Performance



The PowerFlex 755 AC drive is aimed to maximize your investment and help improve productivity. Ideal for applications that require safety, high motor control performance, and application flexibility, the PowerFlex 755 is a highly functional and cost effective solution.

The first drive to be released from the Allen-Bradley® PowerFlex 750-Series, the PowerFlex 755 AC drive provides greater functionality across your manufacturing systems from 7.5...250 kW/10...350 Hp at 400/480V AC & 540/650V DC input.



The PowerFlex 755 AC drive offers more selection for control and supporting hardware options than any other drive in its class including:

- **DeviceLogix™ embedded control technology** to control outputs and manage status information onboard the drive
- **Standard embedded Ethernet** communication, allows you to easily configure, control and collect drive data over an Ethernet/IP network
- **Predictive diagnostics** allow the PowerFlex 755 to keep track of information that affects the life of its cooling fans and relay outputs. In addition to this, the drive can be programmed to monitor the run time hours for machine bearings or motor bearings, giving you the ability to configure the drive for advanced notification to help prevent unplanned downtime
- **Basic and Enhanced Safety options** help protect personnel and equipment, conserve space in panels, and minimize downtime

INTEGRATION

- Standard Ethernet communication capabilities support seamless integration into the Logix environment and EtherNet/IP networks
- Optimize integration with system controllers with a variety of network choices
- Reduce development time and costs with Premier Integration. Configure the PowerFlex 755 drive with RSLogix™ 5000, DriveExplorer™ and DriveTools™

FLEXIBILITY

- The PowerFlex 755 has five (5) option slots capable of accepting a combination of options for control, communications, I/O, feedback, safety and auxiliary control power
- Meet your specific application requirements with scalable control and hardware options
- Support multiple motor types for a variety of applications
- Multiple feedback options for a cost effective solution in a wide range of applications
- Process up to 90 instruction blocks and adapt to your specific applications requirements with DeviceLogix™ embedded control
- Flexible packaging options to support multiple environmental classes

As a global automation leader, Rockwell Automation is uniquely positioned to help you capitalize on the business benefits of convergence. We are heavily investing in convergence-ready products, services, partnerships and expertise necessary in Information, Communication, Control and Power disciplines to drive convergence quickly and effectively.

The PowerFlex 755 is a great example of converging technologies to address today's market concerns. This innovative drive combines the integration of: Communications; Control; Information; Global certifications; and Safety to help users be more productive, protect their assets, and receive more valuable data to help improve their production and ultimately their bottom line.



LISTEN.
THINK.
SOLVE.™

PERFORMANCE

- Meet application requirements for increased control bandwidth by using performance application features that compensate for system disturbances
- Facilitate tighter motor control with synchronized control loops
- Achieve higher Safety Integrity Levels (SILs) with the Rockwell Automation Safe-Speed Control technology to support applications requiring safe speed monitoring

PACKAGING

Factory and field installable enclosure options to meet most environmental requirements:

- Open Type Cabinet Mount
- Flange Mount for extra protection
- Extra Protection Wall Mount for harsh environments
- Supporting debris hood & conduit plate kits to meet IP21 (NEMA 1)

SAFETY

The PowerFlex 755 is available with two Safety options: 1. Safe Torque-Off option or 2. the Safe Speed Monitor option.

The Safe Torque-Off option is the entry level safety option certified at PLe/SIL3 that requires the use of an external safety relay to meet ISO/EN 13849-1, Category 3 which prevents drive restarts after the safety circuit is tripped.

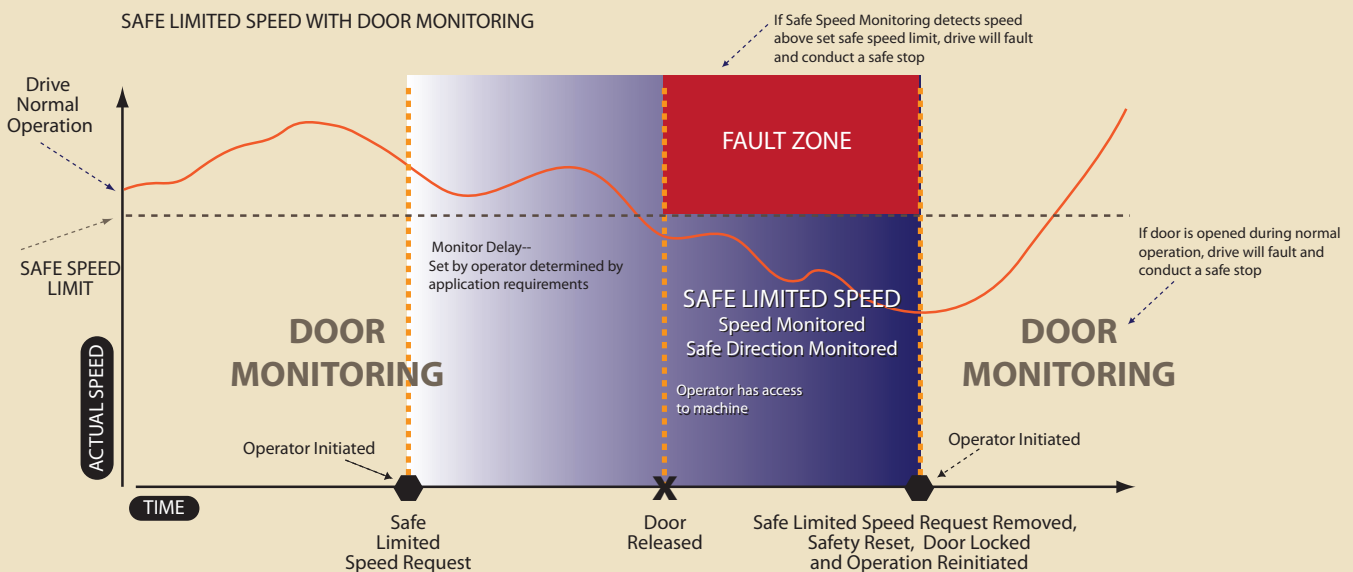
The Safe Speed Monitor option combines the Safe Torque-Off capability and embedded safety relay functionality with the Rockwell Automation Safe-Speed Control technology available in one hardware option. This option helps save space, reduces system wiring and complexity by allowing input devices to be connected directly to the PowerFlex 755, and is certified PLe/SIL3.

With the Safe Speed Monitor option you'll gain the added productivity that results from advanced safety control and also reduce your overall system cost while improving flexibility. By reducing and monitoring the speed of an application helps operators safely inspect and perform

some process maintenance work without stopping the machine. The safety options available with the PowerFlex 755 can help provide reduced downtime paired with an increase in productivity.

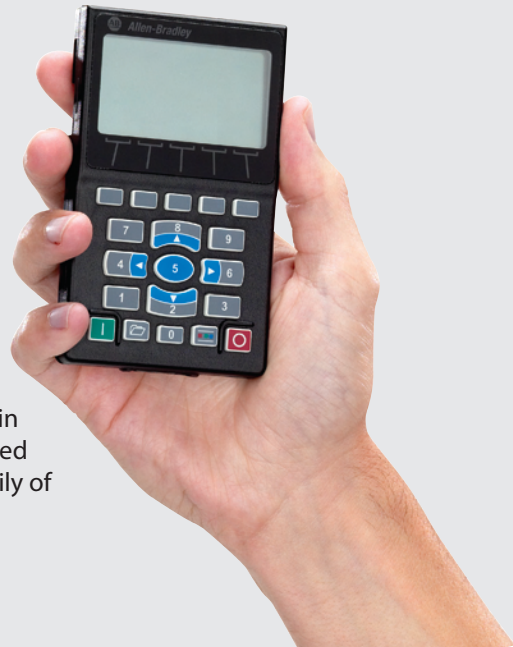
The Safe Speed Monitor option provides the following functionality:

- Safe Torque-Off
- Stop Categories 0, 1 and 2
- Safe Stop
- Safe Limited Speed
- Safe Maximum Speed
- Safe Maximum Acceleration
- Safe Direction
- Zero Speed Monitoring
- Door Control and Monitoring
- Enabling switch input

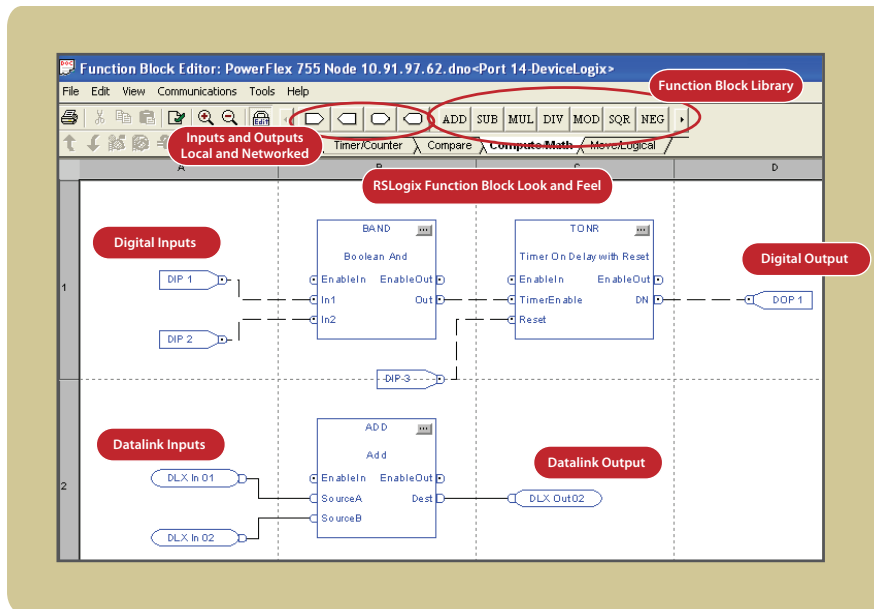


PowerFlex Enhanced Human Interface Module (HIM)

The enhanced HIM module for the PowerFlex family of drives offers added functionality and improved ease of use making drive programming easier than before. Take advantage of the simplified operation and reduced keystrokes from the redesigned keypad and more structured navigation. The high-definition LCD display allows for six lines of text providing you with more meaningful explanations of parameters and events. The backlight on this display also flashes to help signal an event that requires attention. The HIM is currently available in nine languages and language is defined within the HIM firmware, so symbols and abbreviations appear in the selected language. This new HIM is compatible with the entire PowerFlex family of drives and is available in NEMA 1 and NEMA 4 versions.



DeviceLogix™ Control



DeviceLogix is an embedded control technology in some Allen-Bradley products that can control outputs and manage status information onboard a device. A DeviceLogix enabled device combines inputs and/or outputs and local logic functions to determine the device's behavior. Inputs and outputs can be physical or networked. Physical inputs and outputs are realized by physical connections to the device.

DeviceLogix control within the PowerFlex 755 can help:

Improve System Performance and Productivity

- Control outputs and manage status and information within the drive
- Speed reaction time by processing in the drive which reduces dependency on network throughput
- Provide an option for decision making if communication is lost with main controller

Simplify Programming

- Easily programmed via: RSLogix 5000, DriveExplorer v 6.01, and DriveTools SP v 5.01
- Embedded control engine can process up to 90 function blocks with integrated instruction types to help configuration

Maximize Your Investment and Help Improve Productivity

Control

- Drive control modes include speed, torque, and position in one product to support multiple application types
- Selectable high-performance motor control algorithms with Force Technology includes Flux vector, Permanent magnet motor, sensorless, and V/hz to support multiple motor types

MOTOR TYPES: Permanent magnet motor, induction motor, Allen-Bradley MPL motor

- DeviceLogix embedded control
- TorqProv for lifting applications
- AC or DC common bus configurations for stand alone or multiple drive solutions
- Multiple preset speeds with programmable control through digital inputs, communications, or DeviceLogix

Positioning

- Integrated Position loop for position homing, indexing, electronic gearing, position and velocity profiling, and position CAMing for stand alone positioning applications

Feedback

- Multiple feedback interfaces to choose from to support a wide range of applications includes Incremental, EnDat and Hiperface for Stegmann and Heidenhain high resolution feedback, SSI for Stahltronis and Tempsonics and BiSS for linear feedback
- Multiple options to support these interfaces include Universal feedback, Encoder, and Dual Encoder options
- Automatic feedback loss switchover to encoder and encoderless in speed mode

Communications

- Standard embedded EtherNet/IP port
- 16 configurable datalinks to pass data to a controller with the standard embedded EtherNet/IP and DeviceNet option
- Supports existing PowerFlex communication modules (20-Comm-xx) with the communication adapter option
- Supported communication adapter interfaces include: EtherNet/IP, ControlNet, DeviceNet, Remote I/O, RS485 DFI, PROFIBUS DP, Interbus, Modbus/TCP, Bluetooth, CANopen, HVAC. *Some limitations may apply*

Hardware

- Slot based structure for control and selectable I/O, feedback, communication, auxiliary control power, and safety options
- Pull-apart terminal blocks for easy wiring
- Zero Stacking or side-by-side mounting of drives in panels
- Noise and voltage suppression characteristics, reduces installation concerns for noise-sensitive environments
- Standard conformal coating hardware

Control I/O

- Includes one (1) programmable 24V DC or 115V AC input
- Additional analog and discrete I/O options available
- Control I/O features include analog loss detection, timed outputs, and a PTC input

Real-Time Clock

- Real time data is available versus run time data
- Locally programmable and can be set by a remote controller
- Programmable month, day, year, and local time zone in MM:SS

Programming and Commissioning

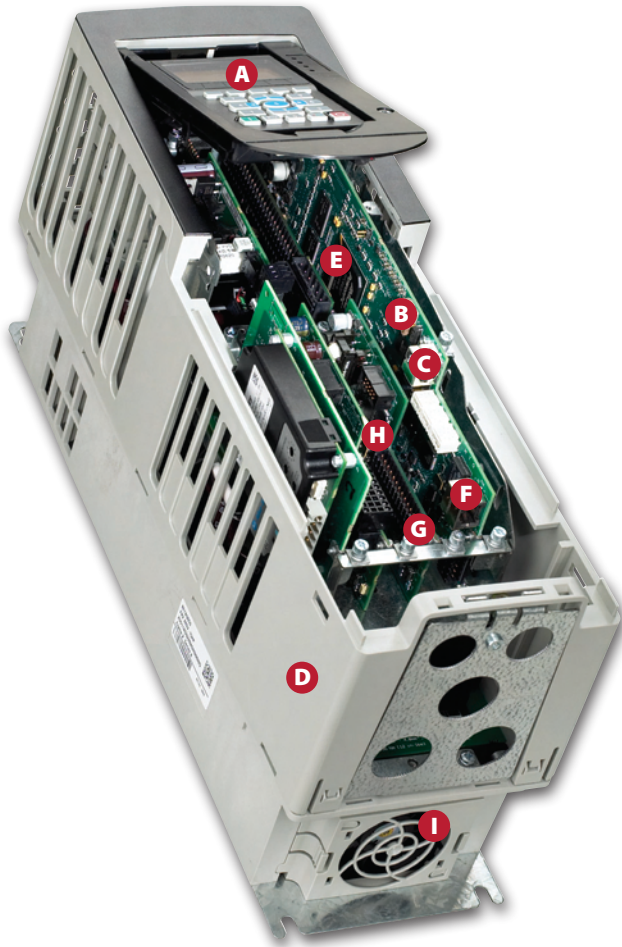
- LCD Human Interface Module (HIM) features an assisted start-up utility to reduce start-up time and allows easy configuring and tuning of the drive
- PC tools to assist with programming, configuration, monitoring, and troubleshooting: RSLogix 5000, DriveTools, and DriveExplorer
- Flash upgradeable to equip the designer with the ability to upgrade to the latest control features available

Standards

- To meet the needs of customers worldwide, the PowerFlex 755 is ROHS compliant



PowerFlex 755 AC Drive



- A** High definition LCD display allows for six lines of text for more meaningful explanations of parameters and events
- B** Real time clock provides time stamped events vs. run time data
- C** Additional DPI for expanded programming capability
- D** Packaging options to meet application requirements
- E** DeviceLogix embedded control technology provides function block programming for stand-alone control of basic applications
- F** Easily configure, control, and collect drive data with standard embedded Ethernet port
- G** Slot based mechanical architecture to support available options for I/O, feedback, control power supply, safety, and communications
- H** Safety performance levels can be increased using the Safe Speed Monitor option to support applications requiring safe speed monitoring
- I** Easily assessable heat sink and internal fans

e-Tools

RSLogix™ 5000

For simplified AC drive start-up and reduced development time, we've integrated Allen-Bradley PowerFlex drive configuration with RSLogix5000® software. This single-software approach simplifies parameter and tag programming while still allowing stand-alone drive software tool use on the factory floor.

DriveTools™ SP Software Suite

A powerful PC based software suite, for programming, configuring, and troubleshooting.

- DriveExecutive™ — for online/offline configuration and management of drives and drive peripherals.
- DriveObserver™ — for real-time trending of drive information.

DriveExplorer™ Software

Allen-Bradley DriveExplorer software is an easy-to-use, cost effective online programming tool designed for Microsoft® Windows™ 2000/XP/VISTA operating systems. It provides the user with the means to monitor and configure PowerFlex drive and communication adapter parameters.

PowerFlex Accelerator Toolkit

The PowerFlex Accelerator Toolkit contains a variety of tools to help you easily design, install, operate and maintain a drive system. Download the tool at: www.ab.com/go/iatools

Motion Analyzer

For applications requiring more than a constant load and steady speed, Motion Analyzer software can help by handling the necessary complex calculations. Motion Analyzer features an easy-to-use format which can reduce design risk for speed and positioning applications that include PowerFlex® Drives or Kinetix® servo drives. Download the tool at www.rockwellautomation.com/go/imcmotion

PowerFlex 755 AC Drive Specifications

Frame/Rating Cross-Reference						
Frame*	400V AC (540V DC) Input			480V AC (650V DC) Input		
	Amps	Normal Duty kW	Heavy Duty kW	Amps	Normal Duty HP	Heavy Duty HP
2	15.4	7.5	5.5	14	10	7.5
	22	11	7.5	22	15	10
3	30	15	11	27	20	15
	37	18.5	15	34	25	20
	43	22	18.5	40	30	25
4	60	30	22	52	40	30
	72	37	30	65	50	40
5	85	45	37	77	60	50
	104	55	45	96	75	60
6	140	75	55	125	100	75
	170	90	75	156	125	100
	205	110	90	186	150	125
	260	132	110	248	200	150
7	302	160	132	302	250	200
	367	200	160	361	300	250
	456	250	200	415	350	300

* Frame ratings based on Open Type Cabinet mount enclosures. See catalog for more specifics on Flange Mount and NEMA 12 ratings.

Standards

- CE
 - EMC EN61800-3
 - Low Voltage EN61800-5-1
- UL
- cUL
- C-Tick
- TUV FS
- SEMI F47
- ROHS
- GOST-R

Input Specifications

- 3-Phase Voltage: 380-480V +/- 10%
- Frequency: 47 – 63 Hz
- Logic Control Ride Through: 0.5 seconds

Output Specifications

- Voltage: Adjustable from 0V to rated motor
- Frequency Range: 0 – 650 Hz
- Instantaneous Over Current Trip: 220 – 300% based on drive rating

Dimensions

Approximate Dimensions Millimeters (Inches)			
Frame	Height	Width	Depth
2	424.20 (16.7)	134.50 (5.30)	212.00 (8.35)
3	454.00 (17.87)	190.00 (7.48)	212.00 (8.35)
4	474.00 (18.66)	222.00 (8.74)	212.00 (8.35)
5	550.00 (21.65)	270.00 (10.63)	212.00 (8.35)
6	665.50 (26.20)	308.00 (12.13)	346.40 (13.64)
7	881.50 (34.70)	430.00 (16.93)	350.00 (13.78)

Enclosure & Ambient Operating Temperatures

Enclosure Rating	Temperature Range	Drive
Open Type Cabinet Mount IP00/IP20 & NEMA/UL Open Type	0-50° C (32-122° F)	All Frames, All Ratings
Extra Protection Flange Mount Front: IP00/IP20 & NEMA/UL Open Type Back: IP66 & NEMA/UL Type 4X	0-50° C (32-122° F) 0-40° C (32-104° F)	All Frames, All Ratings All Frames, All Ratings
Extra Protection Wall Mount IP54 & NEMA/UL Type 12	0-40° C (32-104° F)	Frames 2-5
NEMA 1 Kit converts Open Type to NEMA/UL Type	0-40° C (32-104° F)	All Frames, All Ratings

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