

PowerFlex® 750-Series AC Drives



Cost-effective Solution Designed for Ease of Use, Integration & Application Flexibility.

The Allen-Bradley® PowerFlex 750-Series of AC Drives is aimed at maximizing your investment and improving productivity. Whether your need is for a general purpose or high performance application, the PowerFlex 750-Series offers more selection for control, communications, safety and supporting hardware options than any other drives in their class.

Leading the Class

- Simplified integration into the Logix environment reduces development time and related costs
- Cost effective solutions with standard features including DeviceLogix control, predictive diagnostics, embedded Ethernet port, embedded I/O, and safety options
- Reduce unnecessary add-ons with the slot based architecture that allows PowerFlex 750-Series drives to be built to suit application requirements
- Prevent unplanned downtime with predictive diagnostics and built-in protection features to help protect your investment
- Gain additional flexibility with packaging options to meet environmental protection requirements, high power cabinet and commonly used power options required for high power applications
- Help protect personnel and equipment with safety solutions up to and including PLe/SIL CL3, Cat 3 and Cat 4



The PowerFlex 750-Series is a robust family of AC drives that provide ease of use, flexibility, and performance for a variety of industrial applications. The PowerFlex 753 provides general purpose control for applications ranging up to 350 Hp and 250 kW. The PowerFlex 755 provides maximum flexibility and performance ranging up to 1350 Hp and 900 kW.

Maximize your productivity by taking advantage of the following key features offered in the PowerFlex 750-Series:

Integration with Logix – The PowerFlex 753 and 755 offer seamless integration into the Logix environment for simplified and enhanced configuration, programming, commissioning, diagnostics and maintenance. Using either Add-On Profiles or embedded instructions, you'll be able to reduce engineering time - and related costs - while improving the configuration, control and collection of data. The option to program the drive using motor control instructions embedded in Logix controllers is exclusive to the PowerFlex 755 AC drive on EtherNet/IP. Automatic Device Configuration is another productivity-enhancing feature and is available with RSLogix 5000 V20. Now, the Logix controller can automatically detect a replaced PowerFlex 755 drive and download all configuration parameters. This eliminates the need for manual reconfiguration.

Communications – The PowerFlex 750-Series supports a comprehensive range of network protocols to ease integration into your architecture. The PowerFlex 755 features standard embedded Ethernet communication, allowing you to easily manage drive data over EtherNet/IP networks.

Safe Torque-Off and Safe Speed Monitor – These safety options provide a choice for safety levels depending on your application requirements.

DeviceLogix™ – Controls outputs and manages status information locally within the drive allowing you to operate the drive independently or complimentary to supervisory control.

Configure for your Application – Each drive has a slot-based architecture giving you the flexibility to select option cards to suit your application and expand your drive for future needs. Supported hardware control options are common for the series to help reduce your inventory and spare parts requirements.

Predictive Diagnostics – Allows the PowerFlex 750-Series to keep track of information that affects the life of drive components. PowerFlex 755 drives 315 kW/400 Hp and larger have additional standard protection features including built-in protection devices.

LISTEN.
THINK.
SOLVE.™

PowerFlex 750-Series AC Drive



- A** High-definition LCD display allows for six lines of text for more meaningful explanations of parameters and events
- B** Standard I/O on the PowerFlex 753 provides a cost-effective solution
- C** Real-time clock provides time stamped events vs. run-time data
- D** Additional DPI for expanded programming capability
- E** Increase safety performance levels with the Safe Speed Monitor option card which includes an embedded safety relay
- F** Packaging options to meet application requirements
- G** DeviceLogix embedded control technology provides function block programming for stand-alone control of basic applications
- H** Easily configure, control and collect drive data with standard embedded Ethernet port on the PowerFlex 755
- I** Slot-based mechanical architecture to support additional options for I/O, feedback, safety, communications and auxiliary power supply
- J** Optional Auxiliary Power Supply maintains control and communications in event that main power is not present
- K** Easily assessable heat sink and internal fans

e-Tools

RSLogix™ 5000 — Add-on Profiles

For simplified AC drive start-up and reduced development time, we've integrated Allen-Bradley PowerFlex drive configuration 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.

RSLogix 5000 – Embedded Instructions

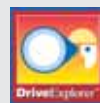
The PowerFlex 755 AC drive can be configured with drive instructions embedded in Allen-Bradley ControlLogix and CompactLogix™* Programmable Automation Controllers (PAC). These are the same configuration parameters and programming instructions as those used by Allen-Bradley Kinetix® servo drives, providing a common, enhanced user experience.



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.

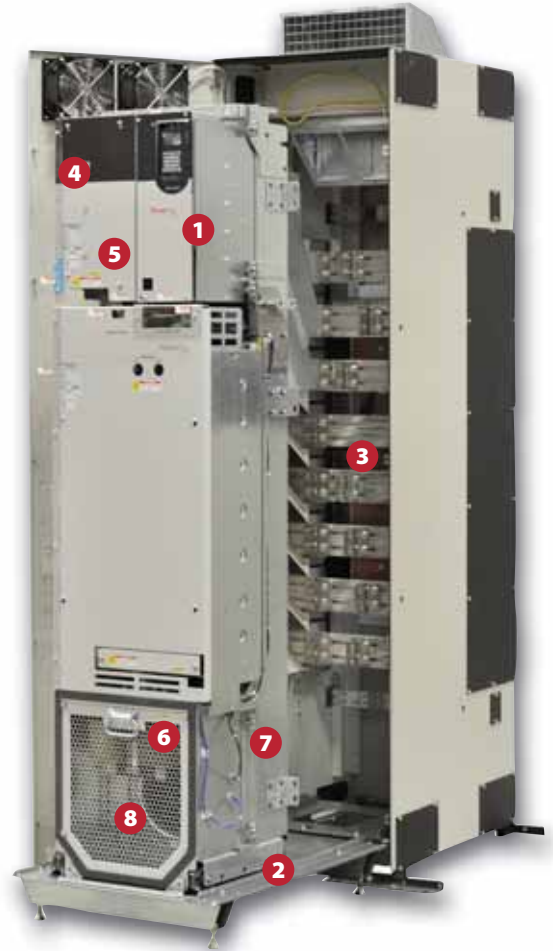
* CompactLogix integration available with RSLogix 5000 V20

PowerFlex 755 AC Drive

315...900 kW / 400...1350 Hp at 400/480V
250...1100 Hp / 200...1000 kW at 600/690V

In addition to all the options and benefits available in the PowerFlex 750-Series, the PowerFlex 755 drives 315 kW/400 Hp and larger offer added benefits for maintenance and installation flexibility.

- 1 Control pod is common with smaller ratings providing embedded Ethernet port and 5 slots for option modules, and can be remote mounted (up to 23 m) for hassle-free access to low voltage control
- 2 Roll in/out design makes the drive easy to install and service by allowing complete removal from cabinet, providing generous room for wiring behind the drive. Power wiring stays connected while unit is rolled out
- 3 Adjustable terminals provide flexibility for wiring preferences such as top or bottom entry
- 4 Integrated fusing eliminates need for separately mounted drive short circuit protection. Status is reported from the drive to ease troubleshooting
- 5 Replaceable surge protector reduces downtime after incoming transient voltage events. Status is reported from the drive to ease troubleshooting
- 6 Integrated DC link inductor enhances protection from power system events, and reduces input harmonics
- 7 Sealed cooling channel uses external air for main cooling, reducing contamination exposure for electronics
- 8 Modular construction allows fast and easy replacement of parts (e.g., main blower, capacitor assembly, circuit boards), minimizing production downtime



PowerFlex 755 Frame 8

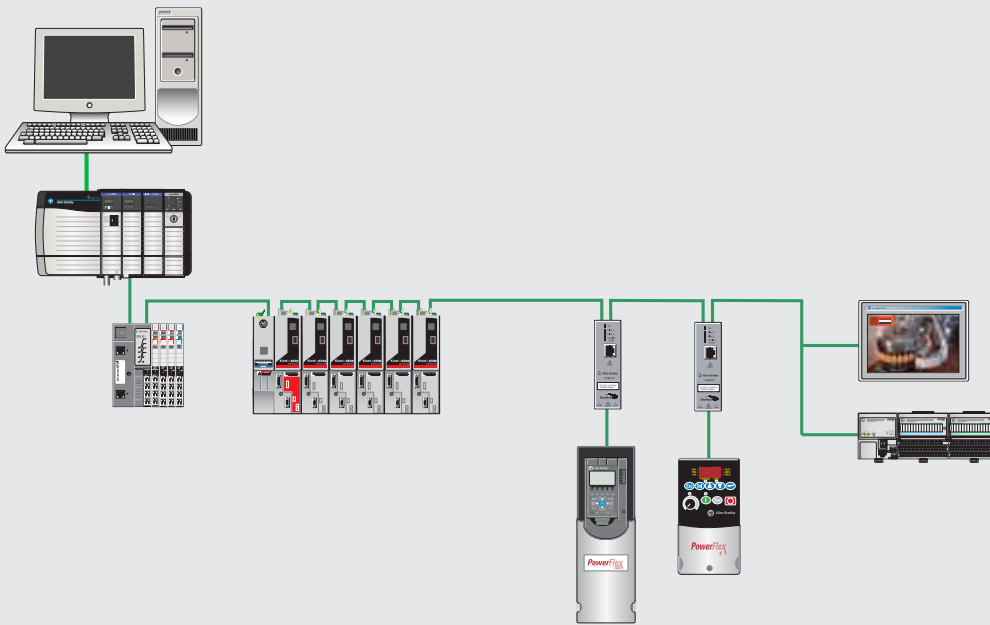
Enclosure & Ambient Operating Temperatures

Enclosure Rating	Temperature Range	Drive
Open Type Cabinet Mount IP00/IP20 & NEMA/UL Open Type	0-50° C (32-122° F)	Frames 2-7
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)	Frames 2-7
Extra Protection Wall Mount IP54 & NEMA/UL Type 12	0-40° C (32-104° F)	Frames 2-7
NEMA 1 Kit converts Open Type to NEMA/UL Type	0-40° C (32-104° F)	Frames 2-7
IP20 & NEMA/UL Type 1 MCC Style	0-40° C (32-104° F)	Frames 8-9

The Powerflex 750-Series drives are available with a variety of enclosure options including IP54 (left) and an extra protection flange mount (right).



EtherNet/IP—A Single Network for Complete Machine Control



Connect Your Entire Enterprise

Benefit from the EtherNet/IP network for complete machine control that simplifies and enhances machine design.

- Low cost, high performance and easy to use as compared to a multi-network architecture
- Easily integrate any PowerFlex drive, I/O, smart actuators and any other EtherNet/IP connected device
- EtherNet/IP is an established, broadly-adopted network
- The PowerFlex 755 AC drive and Kinetix 6500 servo drive can be programmed with a common set of motor control instructions available in ControlLogix and CompactLogix Programmable Automation Controllers

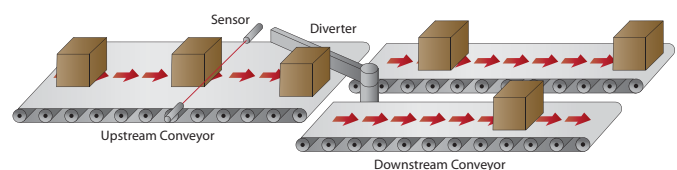
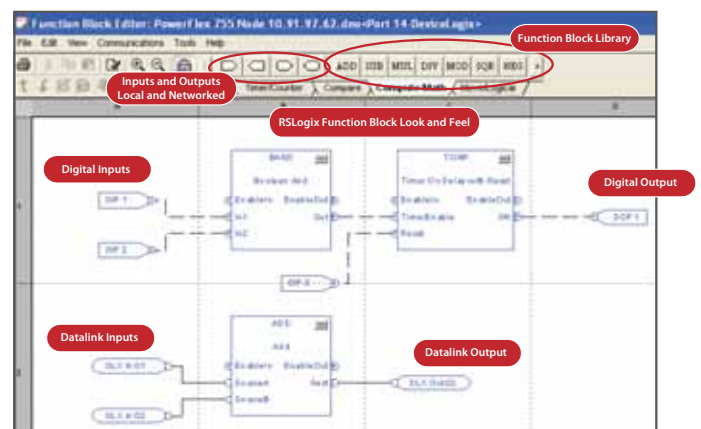
DeviceLogix™ Control Technology

DeviceLogix control technology provides you with the flexibility to customize a drive to more closely match your application needs. DeviceLogix controls outputs and manages status information locally within the drive allowing you to operate the drive independently or complimentary to supervisory control helping to improve system performance and productivity.

You can use the PowerFlex 750-Series DeviceLogix to:

- Speed reaction time by processing in the drive—which reduces dependency on network throughput
- Provide scaling, selector switches, or other data manipulations not already built into the drive
- Read inputs/write outputs and exclusively control the drive
- Provide an option for decision making if communication is lost with main controller
- Control other PowerFlex drives via a Peer-to-Peer EtherNet/IP network

DeviceLogix is easily programmed via: RSLogix 5000, DriveExplorer v 6.01, and DriveTools SP v 5.01



Safety

The PowerFlex 750 - Series is available with two Safety options:

1. Safe Torque - Off option or
2. Safe Speed Monitor option.

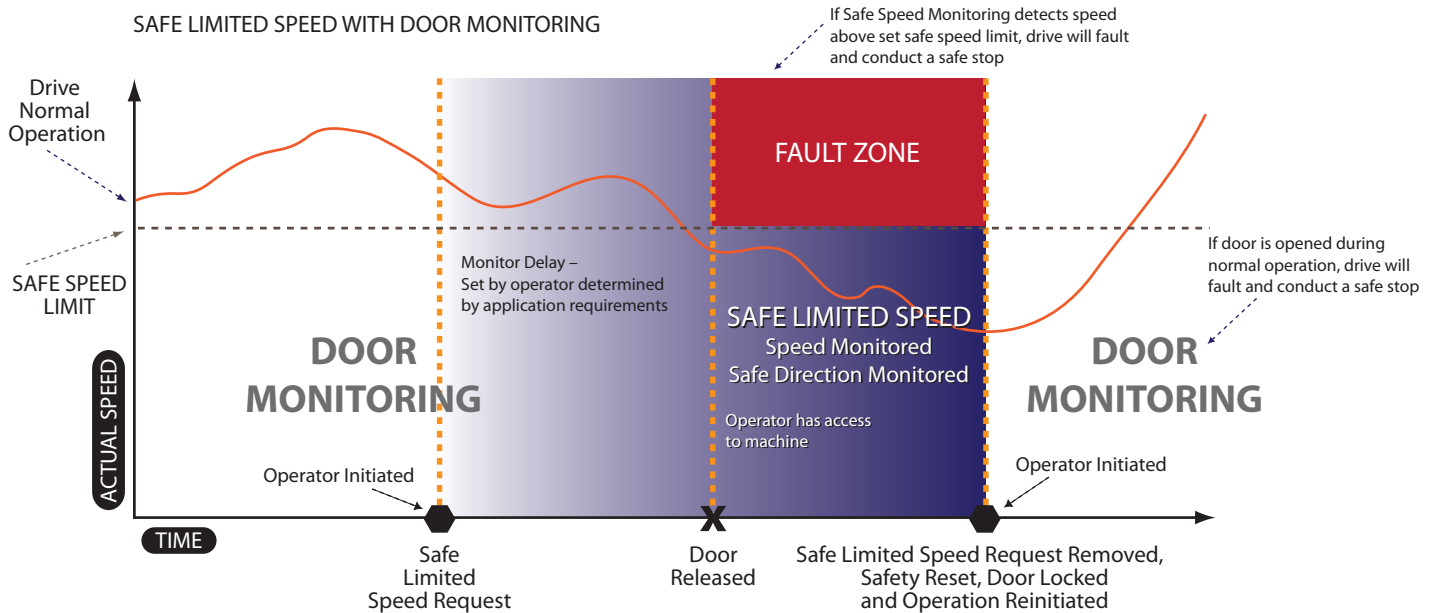
Safe Torque - Off is ideal for safety-related applications requiring removal of rotational power to the motor without removing power from the drive. Safe Torque - Off functionality offers the benefit of quick start-up after a demand on the safety system, helps reduce wear from repetitive start-up, and provides safety ratings up to and including SIL CL3, PLe, and CAT 3.

The Safe Speed Monitor provides a solution for applications that can benefit from access to a safety zone while there is limited motion. In addition, the Safe Speed Monitor has an integrated monitoring relay to save additional panel space installation labor. This option carries a safety rating up to and including SIL CL3, PLe, and Cat 4. With the Safe Speed Monitor option you can safely monitor and control the speed of your application which allows operators to perform process or maintenance work without stopping the machine.

These safety options can help provide reduced downtime paired with an increase in productivity while protecting your personnel and equipment.

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 753 AC Drive

The PowerFlex 753 is ideal for general purpose applications. Embedded I/O along with three option slots for safety, feedback, communications and additional I/O makes the drive a flexible, cost-effective solution.



PowerFlex 755 AC Drive

PowerFlex 755 is ideal for applications requiring advanced positioning, higher performance, or a higher power range. The PowerFlex 755 is easily integrated with the embedded Ethernet port and has five option slots to support additional options for feedback, I/O, safety, communications, and auxiliary 24V DC control power.

The PowerFlex 755 AC drive can be integrated with a ControlLogix or CompactLogix* Programmable Automation Controller (PAC) via drive parameters that are actually embedded in the PAC. This level of integration is specific to PowerFlex 755 drives on EtherNet/IP and allows the precise synchronization of multiple motors.

* CompactLogix integration available with RSLogix 5000 V20

	PowerFlex 753	PowerFlex 755
400/480V 600/690V	0.75...250 kW/1...350 Hp -	0.75...900 kW/1...1350 Hp 250...1100Hp / 200...1000kW
Logix Integration	• Add-on Profiles	• Embedded instructions in RSLogix 5000 • Automatic Device Configuration (RSLogix 5000 V20) • Add-on Profiles
DeviceLogix Control Technology	✓	✓
Safety Options: Safe Torque-Off, Safe Speed Monitor	✓	✓
Predictive Diagnostics	✓	✓
Option Slots	3	5
Communications	Option modules available for: • EtherNet/IP™ • ControlNet™ • DeviceNet™ • And a variety of industrial networks	Embedded Ethernet port standard Option modules available for: • ControlNet • DeviceNet • Additional modules to support variety of industrial networks
I/O	Embedded I/O standard • 3 Digital Inputs, 1 Relay Output, 1 Transistor Output, 1 Analog Input, 1 Analog Output, 1 PTC Input • Option cards for additional I/O	1 Digital Input standard • Option cards for additional I/O
Motor Types	• Induction Motors	• Induction Motors • Permanent Magnet Motors (Surface and Interior)
Positioning	• Indexing	• Indexing • PCaming • Electronic Gearing • Position/Speed Profiling
Feedback	• Incremental	• Incremental • EnDat, Hiperface, SSI and BiSS
Application Sets	Oil Well • Pump Jack & Pump Off Fibers • PJump & Traverse	Lifting • Torqprove Oil Well • Pump Jack & Pump Off Fibers • PJump & Traverse
Conformal Coating	✓	✓
ROHS Compliant Materials	✓	✓

PowerFlex 753 and PowerFlex 755 AC Drive Specifications

Frame ¹	Frame/Rating Cross-Reference					
	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	2.1	0.75	0.75	2.1	1	1
	3.5	1.5	1.5	3.4	2	2
	5	2.2	2.2	5	3	3
	8.7	4	4	8	5	5
	11.5	5.5	5.5	11	7.5	7.5
	15.4	7.5	7.5	14	10	10
3	22	11	11	22	15	15
	30	15	15	27	20	20
	37	18.5	18.5	34	25	25
4	43	22	22	40	30	30
	60	30	30	52	40	40
5	72	37	37	65	50	50
	85	45	45	77	60	60
6	104	55	55	96	75	75
	140	75	75	125	100	100
	170	90	90	156	125	125
	205	110	110	186	150	150
7	260	132	132	248	200	200
	302	160	160	302	250	250
	367	200	200	361	300	300
	456	250	250	415	350	350

¹ Frame ratings based on Open Type Cabinet mount enclosures.

PowerFlex 755 AC Drive Specifications 315 kW/400 Hp and Above

Frame	380...400V AC, Three-Phase and 540V DC Input Drives											
	Light Duty				Normal Duty				Heavy Duty			
	Output Amps			kW / Hp	Output Amps			kW / Hp	Output Amps			kW / Hp
8	Cont.	1 Min.	3 Sec.	kW	Cont.	1 Min.	3 Sec.	kW	Cont.	1 Min.	3 Sec.	kW
	540	594	—	315	460	506	693	250	385	578	693	200
	585	644	—	315	540	594	821	315	456	684	821	250
	612	673	—	355	567	624	851	315	472	708	851	250
	750	825	—	400	650	715	975	355	540	810	975	315
	796	876	—	450	750	825	1125	400	585	878	1125	315
9	832	915	—	450	770	847	1155	400	642	963	1155	355
	1040	1144	—	560	910	1001	1365	500	750	1125	1365	400
	1090	1199	—	630	1040	1144	1584	560	880	1320	1584	500
	1175	1293	—	710	1090	1199	1638	630	910	1365	1638	500
	1465	1612	—	800	1175	1293	1872	710	1040	1560	1962	560
	1480	1628	—	850	1465	1612	2198	800	1090	1635	2198	630
	1600	1760	—	900	1480	1628	2220	850	1175	1763	2220	710
480V AC, Three-Phase and 650V DC Input Drives												
8	Cont.	1 Min.	3 Sec.	Hp	Cont.	1 Min.	3 Sec.	Hp	Cont.	1 Min.	3 Sec.	Hp
	485	534	—	400	430	473	666	350	370	555	666	300
	545	600	—	450	485	534	745	400	414	621	745	350
	590	649	—	500	545	600	818	450	454	681	818	350
	710	781	—	600	617	679	926	500	485	728	926	400
	765	842	—	650	710	781	1065	600	545	818	1065	450
9	800	880	—	700	740	817	1110	650	617	926	1110	500
	960	1056	—	800	800	880	1278	700	710	1065	1278	600
	1045	1150	—	900	960	1056	1440	800	795	1193	1440	700
	1135	1249	—	1000	1045	1150	1568	900	800	1200	1568	750
	1365	1502	—	1100	1135	1249	1728	1000	960	1440	1728	800
	1420	1562	—	1250	1365	1502	2048	1100	1045	1568	2043	900
	1540	1694	—	1350	1420	1562	2130	1250	1135	1703	2130	1000
600V AC, Three-Phase Drives												
8	Cont.	1 Min.	3 Sec.	Hp	Cont.	1 Min.	3 Sec.	Hp	Cont.	1 Min.	3 Sec.	Hp
	355	391	—	350	295	325	490	300	272	408	490	250
	395	435	—	400	355	391	533	350	295	443	533	300
	435	479	—	450	395	435	593	400	329	494	593	350
	460	506	—	500	435	479	639	450	355	533	639	350
	510	561	—	500	460	506	711	500	395	593	711	400
9	545	600	—	550	510	561	765	500	425	638	765	450
	630	693	—	700	595	655	918	600	510	765	918	500
	760	836	—	800	630	693	1071	700	595	893	1071	600
	835	919	—	900	760	836	1140	800	630	945	1140	700
	900	990	—	950	825	908	1260	900	700	1050	1260	750
	980	1078	—	1000	900	990	1368	950	760	1140	1368	800
	1045	1150	—	1100	980	1078	1470	1000	815	1223	1470	900
690V AC, Three-Phase Drives												
8	Cont.	1 Min.	3 Sec.	kW	Cont.	1 Min.	3 Sec.	kW	Cont.	1 Min.	3 Sec.	kW
	330	363	—	315	265	292	375	250	215	323	375	200
	370	407	—	355	330	363	473	315	265	398	473	250
	410	451	—	400	370	407	555	355	308	462	555	300
	460	506	—	450	415	457	639	400	370	555	639	355
	500	550	—	500	460	506	675	450	375	563	675	375
9	530	583	—	530	500	550	750	500	413	620	750	400
	650	715	—	630	590	649	885	560	460	690	885	450
	710	781	—	710	650	715	975	630	500	750	975	500
	790	869	—	800	710	781	1065	710	590	885	1065	560
	860	946	—	850	765	842	1170	750	650	975	1170	630
	960	1056	—	900	795	875	1350	800	750	1125	1350	710
	1020	1122	—	1000	960	1056	1440	900	795	1193	1440	800

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

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)
8	2453.0 (88.36)	600 (23.62)	600 (23.62)*
8	2453.0 (96.60)	600 (23.62)	800 (31.49)*
9	2453.0 (96.60)	1200.0 (47.20)	600.0 (23.6)*
9	2453.0 (96.60)	1200.0 (47.20)	800.0 (31.50)*

* Available in 600mm and 800mm depths to provide options based on cable entry and exit requirements. See publication PFLEX-SG002 or 750-TD001 for selection information.

Energy Savings Calculators

New energy savings calculators show you how installing a PowerFlex drive for your fan or pump applications can reduce energy costs when compared with a traditional control method.



Download the tools at:

www.rockwellautomation.com/solutions/intelligentcontrol

Drives and Motion Accelerator Toolkit

This collection of design tools can help you significantly reduce the time and cost of developing a new application using PowerFlex AC Drives and Kinetix Servo Drives. Toolkit provides sets of modules that are combined to produce:

- an initial Bill of Material
- a beginning set of CAD drawings for wiring diagrams and panel layouts
- an initial logic program written around the specific products used by the application
- initial HMI screens designed around the specific products used by the application

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:

<http://ab.rockwellautomation.com/motion-control/motion-analyzer-software>

Allen-Bradley, ControlLogix, CompactLogix, DeviceLogix, DriveExecutive, DriveExplorer, DriveObserver, DriveTools, Kinetix, PowerFlex and RSLogix, are trademarks of Rockwell Automation, Inc. Trademarks not belonging to Rockwell Automation are property of their respective companies. ControlNet, DeviceNet and EtherNet/IP are trademarks of the Open DeviceNet Vendor Association.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication 750-PP001C-EN-P – October 2011
Supersedes Publication 750-PP001B-EN-P – August 2010

Copyright © 2011 Rockwell Automation, Inc. All Rights Reserved. Printed in USA.