PowerFlex® Drives Overview

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Allen-Bradley® PowerFlex Drives Portfolio

Built on a legacy of motor control excellence

- A complete drives portfolio including Low Voltage, Medium Voltage and DC drives, scalable to meet your application needs

- Premier Integration offers optimized connectivity to Logix 5000™ controllers within the Studio 5000® design environment

- Energy-efficient designs and broad power ratings - plus industry-leading power density

Compact Drives Portfolio

PowerFlex 4M

0.25 to 15 Hp/ 0.25 to 10 kW

- Cost-effective solution
- Feed-through wiring design
- Ideal for Bulletin 160 drive migrations

PowerFlex 523

0.25 to 30 HP/ 0.2 to 22 kW

- Modular design eases installation
- Compact footprint
- Clearances allow for zero-stacking
- 50°C operation with no de-rate, 70°C operation with optional fan kit and de-rate

PowerFlex 525

0.5 to 30 HP/ 0.33 to 22 kW

- Premier Integration via built-in EtherNet/IP port
- Flexible motor control and installation options
- Built-in hardwired safety
- 50°C operation with no de-rate, 70°C operation with optional fan kit and de-rate

PowerFlex 527

0.5 to 30 HP/ 0.33 to 22 kW

- Works exclusively with Logix controllers that support motion
- Premier Integration with Integrated Motion instructions
- Built-in dual ports for EtherNet/IP
- Built-in safety – hardwired or networked

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PowerFlex 4M AC Drive

Ideal for machine-level speed control for applications that require space-savings and easy-to-use AC drives

The PowerFlex 4M AC drive features a space-saving design and is the most cost-effective member of the PowerFlex family

- Control for standalone machines

- Feed-through wiring design facilitates replacement of existing starters combined with energy savings

- Onboard Modbus and DSI port

- Proven applications: Fans, Pumps, Conveyors

- Ideal for Bulletin 160 drive migrations

Power ratings:
- 100...120V: 0.2...1.1 kW / 0.25...1.5 Hp / 1.6...6 A
- 200...240V: 0.2...7.5 kW / 0.25...10 Hp / 1.6...33 A
- 380...480V: 0.4...11 kW / 0.5...15 Hp / 1.5...24 A

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PowerFlex 523 AC Drive

Features innovative modular design while providing the right amount of control for basic applications

The PowerFlex 523 AC drive is designed for rapid installation and configuration

- Premier Integration into Logix environment, using an EtherNet/IP option card

- Standard USB for upload/download drive configuration

- Configurable by HIM or Connected Components Workbench™ software

- The control section can be separated from the power structure for fast field replacements and fewer spare parts on the shelf

Power ratings:
- 100...120V: 0.2…1.1 kW / 0.25…1.5 Hp
- 200...240V: 0.2…15 kW / 0.25…20 Hp
- 400V/480V/525V/600V: 0.4…22 kW / 0.5…30 Hp

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PowerFlex 525 AC Drive

The PowerFlex 525 AC drive is ideal for networked machines requiring more motor control options, standard safety and EtherNet/IP communication

- Premier Integration into Logix environment via EtherNet/IP

- Safe Torque Off standard

- Built-in single port for EtherNet/IP connectivity

- Supports a wide variety of motor control types including permanent magnet motors

Power ratings:
- 100...120V: 0.2…1.1 kW / 0.25…1.5 Hp
- 200...240V: 0.2…15 kW / 0.25…20 Hp
- 400V/480V/525V/600V: 0.4…22 kW / 0.5…30 Hp

PowerFlex 527 AC Drive

Designed to work exclusively with a Logix controller

The PowerFlex 527 AC drive is ideal for machines where both servo and induction motor control is required, and/or where networked safety would be beneficial

- Premier Integration configuration and programming with motion instructions in Studio 5000 Logix Designer

- Choice of hardwired or networked safety

- Built-in dual ports for EtherNet/IP

- Shares common configuration and programming with Allen-Bradley Kinetix servo drives for simplified user experience

Power ratings:
- 100...120V: 0.2…1.1 kW / 0.25…1.5 Hp
- 200...240V: 0.2…15 kW / 0.25…20 Hp
- 400V/480V/525V/600V: 0.4…22 kW / 0.5…30 Hp

Architecture-class AC Drives Portfolio

PowerFlex 753
1…400 Hp / 0.75…270 kW

- Speed & Torque Control

- 6-pulse Drive

PowerFlex 755
1…1800 Hp / 0.75…1400 kW

- Speed, Torque & Position Control

- 6-pulse Drive

PowerFlex 755TL
10…1800 Hp / 7.5…1400 kW

- Speed, Torque & Position Control

- Low Harmonic

PowerFlex 755TR
10…6000 Hp / 7.5…4500 kW

- Speed, Torque & Position Control

- Regeneration
  & Low Harmonic

PowerFlex 755TM
250…6000 Hp / 160…4500 kW (AC)
70…4800 kW (DC)

- Speed, Torque & Position Control

- Common Bus
  Drive System

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PowerFlex 753 AC Drive

Designed for general purpose applications benefiting from a variety of options and features

The PowerFlex 753 AC drive is a feature-rich, wall-mounted option for networked machines

- Premier Integration into Logix environment via optional EtherNet/IP
- Includes safety options and embedded I/O
- Built-in DeviceLogix™ for standalone applications
- Permanent magnet motor control
- Most configurations operate at 50°C with no de-rate

Power range:
240V: 0.5 to 200 Hp
400V: 0.75 to 250 kW
480V: 1.0 to 350 Hp
600V: 0.5 to 300 Hp
690V: 5.5 to 250 kW

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PowerFlex 755 AC Drive

Packaging options to meet varying environmental conditions

Designed for flexibility, connectivity and productivity, these drives provide ease of use and high performance

- Premier Integration into Logix and Studio 5000 over EtherNet/IP
- Integrated Safety — controller-based safety delivered via EtherNet/IP SIL 3/Ple
- Synchronized drive control, ideal for coordinated drive systems (TorqProve™)
- Five option card slots for application flexibility
- Integrated motion on EtherNet/IP

Power range:
- 240V: 0.5 to 200 HP
- 400V: 0.75 to 1400 kW
- 480V: 1.0 to 2000 Hp
- 600V: 0.5 to 1500 Hp
- 690V: 5.5 to 1500 kW

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PowerFlex 755T AC Drives

Step up to the high performance of PowerFlex 755TL, 755TR and 755TM drives

- Premier Integration into Logix environment via EtherNet/IP

- Adaptive Control – Load Observer - Adaptive Tuning

- TotalFORCE® Technology provides world-class speed and torque control

- True Predictive Maintenance

- Design for simplified maintenance

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PowerFlex 70 AC Drive

- Premier Integration into Logix and Studio 5000 over optional EtherNet/IP

- Compact low horsepower form factor

- NEMA 1 / IP20 (50C rated)

- NEMA 4X / IP66 against water and corrosion, NSF certification (National Sanitation Foundation) (40C rated)

- Remains a robust member of the architecture drives portfolio

Power range:

- 0.37 to 37 kW / 0.5 to 50 Hp
- 240, 480, 600V

Medium Voltage Drives Portfolio

PowerFlex 6000 – General Purpose Drive
2.3kV - 11kV (up to 680A)

- Two quadrant operation (non-regen)

- Air-cooled

- Motor cable length <600 m

- Induction motors

- On-line UPS with 15 minute control power back-up standard

- Standard low-harmonic, high-pulse count

PowerFlex 7000 – Special Purpose Drive
2.3 kV - 6.6 kV (up to 720A)

- Four quadrant operation (regenerative)

- Air-cooled or liquid cooled

- Long motor cable length (up to 30 km)

- Induction and Synchronous motors

- Regenerative braking

- Premier Integration into Logix and Studio 5000 over EtherNet/IP

- Certified 50 kA arc flash rating option

On-Machine motor control portfolio

Pre-engineered solutions including motor controller, embedded I/O, scalable safety and network over EtherNet/IP

ArmorStart® LT

- Volts per Hertz VFD up to 2 Hp (1.5 Kw)
- Full-voltage starters to 5 Hp (3.3 Kw)
- Automatic Device Configuration
- 6 configurable field I/O point
- MainsFree™ programming

ArmorStart® ST

- Sensorless Vector Control up to 5 Hp (3.3 Kw)
- Full-voltage starters up to 10 Hp (7.5 Kw)
- Embedded Field I/O
- Modular construction

PowerFlex 755 On-Machine AC Drive

- 400V AC: 8.7 A, 4 kW to 22 A, 11 kW
- 480V AC: 8 A, 5 Hp to 22 A, 15 Hp
- Multiple-encoder and integrated safety options
- Built-in dual ports for EtherNet/IP connectivity

All On-Machine products:
- Premier Integration into Logix and Studio 5000 over EtherNet/IP • Wash-down rated
- Quick-connect cable receptacles reduce installation and commissioning time

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PowerFlex® DC Drive Family

PowerFlex DC Drives and Field Controllers

- Designed for standalone as well as drive system applications
- Premier Integration into Logix environment via optional EtherNet/IP
- Onboard I/O and encoder feedback
- Integrated power solution up to 1400 Hp and engineered solutions up to 6000 Hp

PowerFlex DC

1.5 to 6000 Hp / 1.2 to 4000 kW

Speed & Torque Control

Regeneration & Non-Regeneration
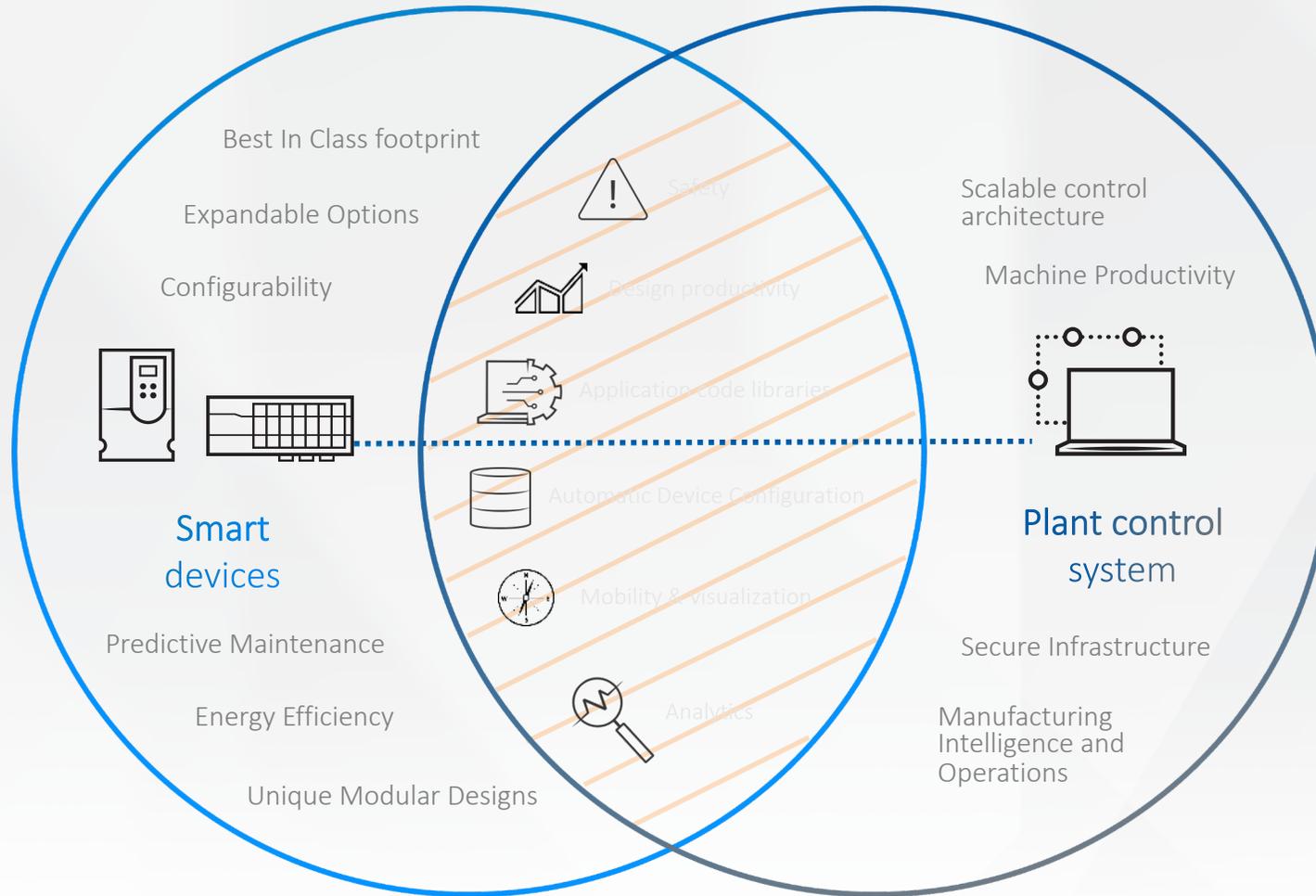

PowerFlex DC FC

17 – 570 Amp

Current & Voltage Control

Motor/Generator Reversing Field & Non-motor Loads

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Rockwell Automation

Premier Integration

The experience you have when using smart devices along with Integrated Architecture® across the product lifecycle

Best In Class footprint

Expandable Options

Configurability

Safety

Design productivity

Application code libraries

Automatic Device Configuration

Smart devices

Predictive Maintenance

Energy Efficiency

Unique Modular Designs

Mobility & visualization

Analytics

Scalable control architecture

Machine Productivity

Plant control system

Secure Infrastructure

Manufacturing Intelligence and Operations

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Integrated Safety

Controller-based safety on EtherNet/IP helps reduce hardware and installation costs

The integration of the safety and standard control systems provides operators and maintenance personnel with visibility to all machine events – including safety events.

- Simplify your machine design and minimize equipment redundancies

- Reduce hardware, wiring and potential for failures

- Fewer components mean smaller panel enclosures

- A single GuardLogix® controller manages both safety and standard control

- Safety on EtherNet/IP reduces wiring

- Safety and standard control share the same EtherNet/IP network

- Drives offering the benefits of integrated safety with a SIL3, PLe rating include:
    - PowerFlex 527(Cat 3) and PowerFlex 753/755 Drive (Cat 4)
    - PowerFlex 755TL, 755TR and 755TM drives (Cat 4)

Networked Safety

NO CONTROL WIRES

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NO SAFETY I/O REQUIRED

68%
Cost Reduction

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Drive Specifications

PowerFlex 4M: PowerFlex 4M AC Drive Technical Data   22F-TD001

PowerFlex 520(523, 525):   PowerFlex 520-Series AC Drive Specifications Technical Data   520-TD001

PowerFlex 527:   PowerFlex 527 AC Drive Specifications, Technical Data   520-TD002

PowerFlex 750(753/755):   PowerFlex 750-Series AC Drives Technical Data   750-TD001

PowerFlex 755TL, TR, TM: PowerFlex 750-Series Products with TotalFORCE Control   750-TD100

PowerFlex 70:   PowerFlex 70 Adjustable Frequency AC Drive   20A-TD001

ArmorStart: Bulletin 280E/281E, 284E ArmorStart with EtherNet/IP   280E-SG001
                                        ArmorStart ST Distributed Motor Controller Specifications Technical Data   280ES-TD001
                                        ArmorStart LT – Selection Guide – Bulletin 290, 291, 294   290-SG001
                                        PowerFlex 755 On-Machine Specifications   750-TD003

PowerFlex DC: PowerFlex DC Drive and Field Controller   20P-TD001

PowerFlex 6000:   PowerFlex 6000 Medium Voltage Drive Product Profile   6000-PP003

PowerFlex 7000:   PowerFlex 7000 Medium Voltage Drive User Manual   7000-UM202

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Thank you!

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