

Allen-Bradley® PowerFlex® 525 AC Drive

The Next Generation of Powerful Performance. Flexible Control.

Allen-Bradley PowerFlex 525 AC drives are ideal for networked applications that require a range of motor control options, embedded EtherNet/IP™, energy savings and standard safety features.

- Power ratings of 0.4...22 kW / 0.5...30 Hp in global voltage classes from 100-600V to meet a wide range of applications
- The modular design eases installation and configuration
- A standard USB connection helps you upload and download configuration files quickly
- An embedded port for EtherNet/IP supports seamless integration into the Logix environment and EtherNet/IP networks
- An optional dual port EtherNet/IP card supports ring topologies and device level ring (DLR) functionality
- Help protect personnel with standard embedded Safe Torque-Off
- An integral LCD human interface module (HIM) supports multiple languages and features scrolling text to explain parameters and codes, easing configuration
- AppView™ parameter groups help speed configuration for applications like conveyors, mixers, pumps and fans
- CustomView™ configuration helps speed machine commissioning with user-defined groups of parameters
- Economizer control mode and permanent magnet motor control* can help reduce energy costs
- Drives operate in low and high ambient temperatures from -20°C (-4°F) up to 70°C (158°F) with current derating and a control module fan kit
- A compact footprint helps save space inside a panel
- A wide range of motor control options, including volts per hertz, sensorless vector control, closed loop velocity vector control and control for permanent magnet motors support many applications

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



Innovative Modular Design

PowerFlex 525 AC drives are made up of two modules that can be detached for simultaneous and independent wiring installation and software configuration. This innovative design allows you to begin mounting the power modules while configuration of the control modules is performed elsewhere, helping speed up installation. The same control module accommodates the entire power range of PowerFlex 525 AC drives, offering installation flexibility and helping reduce spare part inventory.

Ease of Configuration

There are several ways to quickly and easily configure PowerFlex 525 AC drives. From the integral HIM that features QuickView™ scrolling text, to Connected Components Workbench™ software or the Studio 5000 Logix Designer™ application, these tools are designed to help you reduce development time so you can deliver machines faster and more efficiently.

The Studio 5000 Logix Designer application provides complete support for PowerFlex 525 AC drives. One software tool to configure your Logix system can help reduce programming time and allow you to configure, control and monitor your system from one platform.

Automatic Device Configuration (ADC) is another productivity enhancing feature available with the Studio 5000 Logix Designer application and PowerFlex 525 AC drives. This feature allows a Logix controller to automatically detect a replaced PowerFlex 525 drive and download firmware and all configuration parameters, minimizing the need for manual reconfiguration.

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Specifications

| | | |
|---|--|---|
| Power Ratings | 100 - 120V: 0.4...1.1 kW / 0.5...1.5 Hp 200 - 240V: 0.4...15 kW / 0.5...20 Hp | 380 - 480V: 0.4...22 kW / 0.5...30 Hp 525 - 600V: 0.4...22 kW / 0.5...30 Hp |
| Motor Control | Volts per hertz Sensorless vector control | Closed loop velocity vector control Permanent magnet motor control* |
| Application | Open loop speed regulation | Closed loop speed regulation |
| Overload Capability | Normal duty application: 110% for 60 seconds, 150% for 3 sec Heavy duty application: 150% for 60 seconds, 180% for 3 sec (200% programmable) | |
| Input Specification | 1 phase Voltage: 100 ... 120V/200 ... 240V 3 phase Voltage: 200 ... 240V/380 ... 480V/525 ... 600V Frequency: 50 to 60 Hz 1/2 DC bus operation (selectable) | Voltage: Adjustable 0V to rated motor voltage; -15% / +10% voltage tolerance Logic control ride through: >0.5 seconds, 2 seconds typical Maximum short circuit rating: 100,000 amps symmetrical |
| Output Voltage Range | Adjustable 0V to rated motor voltage | Intermittent current: 150% for 60 seconds |
| Frequency Range | Max output frequency 500 Hz | Input frequency variation 47 to 63 Hz |
| Ambient Operating Temperatures** | -20°C to 50°C (-4°F to 122°F) -20°C to 60°C (-4°F to 140°F) with current derating -20°C to 70°C (-4°F to 158°F) with current derating (with optional control module fan kit) | |
| Altitude | 1000 m (3280 ft) with derating guideline for up to max 4000 m (13,123 ft), with the exception of 600V at max 2000 m (6,561ft) | |
| Enclosures | IP20 NEMA/Open | IP30 NEMA/UL Type 1 (with conduit kit) |
| Mounting | 50mm (1.96 in) air-flow gap at the top and bottom*** DIN rail (frames A,B and C) | Zero Stacking (side-by-side mounting) Horizontal Mounting (with control module fan kit) |
| Configuration | Integral HIM, LCD, 5 digits, 16 segments, multi-language | Connected Components Workbench software Studio 5000 Logix Designer™ application |
| Integral Human Interface Module (HIM) Languages | English, French, Spanish, Italian, German, Portuguese, Polish, Turkish, Czech | |
| Control I/O | 7 digital inputs (24V DC, 6 programmable) 2 analog inputs (1 bipolar voltage, 1 current) | 2 digital outputs 2 relays (1 form A relay & 1 form B relay; 24V DC, 120V AC, 240V AC) |
| Dynamic Braking | 7th IGBT braking, DC braking | |
| Carrier Frequency | 2 to 16 kHz. 4 kHz default | |
| EMC Filtering | Embedded 1 ph 240V and 3 ph 480V. Available as an external option for all voltages | |
| Safety | Embedded ISO 13849-1 SIL2/PLd Cat 3 Safe Torque-Off | |
| Communications | Embedded EtherNet/IP port Integral RS485 with Modbus RTU/DSI | Dual port EtherNet/IP option card PROFIBUS® DP option card DeviceNet option card |
| Feedback Types | Line driver type encoder quadrature (dual channel) or single channel - single ended or differential (A, B channel); Duty cycle of 50%, +10% Pulse-train input (1 to 100kHz) - configurable input voltage: 5VDC (±10%); 10-12VDC (±10%), or 24V DC (±15%) Allowance pulse frequency - DC to 250 kHz Frequency controlled PWM allowable pulse frequency | |
| Protection | Fault history log, password-lock security | |
| Standards | UL TUV C-Tick Semi F47 ATEX CE Marine (Lloyds) RoHS ACS 156 CE cUL GOST-R KCC | |
| Control Features | Flying start V/F ratio Bus regulator Process PID PTC input compatible | Fiber application specific features Common DC bus 1/2 DC bus operation Regulation with encoder feedback or analog input Mutli-drive connectivity (requires communication option card) |
| Accessories | NEMA/UL Type 1 kits Line reactors 70°C (158°F) control module fan kit (may require external power) | EMC line filters EMC plates Incremental encoder Dynamic brake resistors |
| Dimensions mm (in) | Frame A: 152 (5.98) H x 72 (2.83) W x 172 (6.77) D Frame D: 260 (10.23) H x 130 (5.11) W x 212 (8.34) D | Frame B: 180 (7.08) H x 87 (3.42) W x 172 (6.77) D Frame C: 220 (8.66) H x 109 (4.29) W x 184 (7.24) D Frame E: 300 (11.81) H x 185 (7.28) W x 279 (10.98) D |

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** These temperatures are for typical vertical drive mounting. For other mounting options and temperatures, please refer to the user manual (520-UM001). Environmental considerations may apply.

*** Frame E at 60°C to 70°C requires 95mm (3.74 in) airflow gap at the top of the drive and a control module fan kit

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