Powerdrive F300

Fan, Pump and Compressor drive

Optimum energy efficiency, flexible functionality and ease of use

EMERSON™
Industrial Automation

Emerson's market leading, energy efficient fan, pump and compressor control solutions

Emerson Industrial Automation has been involved with fan, pump and compressor applications for over 40 years. Our technological expertise and experience working with equipment manufacturers, system installers and end users allow us to provide a range of products and services to meet and exceed all your needs:

- Cutting edge drives and motors technology – providing reliable, high performance and energy efficient solutions for industrial flow applications.
- Scalable automation solutions – from simple drive and motor compressor or pump control up to a fully engineered process system. Our products and services are backed by global industrial expertise and full support at a local level. We can provide turn-key solutions or integrate with system designers or machine manufacturers, as required.
- Customized local services – ensuring all elements of your system are supported, ranging from consultation, energy audits, cabinet building, installation, commissioning and maintenance, to specific training on your application, ensuring maximum performance throughout the lifetime of your application.

5,500 employees

40+ Automation Centers

23 Manufacturing sites

8 Engineering and Design facilities

3 Regional despatch hubs

The Powerdrive F300:
optimum energy efficiency for fan, pump and compressor applications

The Emerson Industrial Automation Powerdrive F300 enables the most efficient performance and highest energy savings for fan, pump and compressor applications. Designed in conjunction with Emerson's LSRPM and PLSRPM permanent magnet (PM) motors, the Dyneo® solution provides the highest energy savings available in the market today.

Powerdrive F300 is also designed to control standard AC induction motors. The drive is matched with IEC induction motors from Emerson Industrial Automation's IMFinity range, providing the control, reliability and ease of installation and commissioning required for your pumping, ventilation or compression application.

Further advantages include:

- Reliability and high uptime enabled by robust product design, matched motor and drive compatibility and quality service support
- Fast and simple drive set-up and management plus efficient customer care from a complete drive and motor solution provider

Powerdrive F300

Optimum energy efficiency, flexible functionality and ease of use

Powerdrive F300: Cabinet-mount drive solution

End users, OEMs and integrators need to maximize energy efficiency and minimize build costs while providing the necessary programming and functionality. Powerdrive F300 has been designed to solve these needs with several innovative features.

Optimizing for energy efficiency

As part of a Dyneo® PM solution, Powerdrive F300 achieves the most energy efficient industrial drive and motor combination available, exceeding IE4 and NEMA Premium standards.

Lowering system costs with flexible intelligent drives

The Powerdrive F300 variable speed drive provides flexibility in mounting options and functionality including I/O and fieldbus communications. For those who want even more flexibility, Powerdrive F300 also provides the most comprehensive on-board drive programming available for fan, pump and compressor applications: an on-board PLC provides extensive IEC 61131-3 compliant programming functionality without the additional cost, footprint and resource required to procure, install and commission an external PLC.

Reducing design, build and commissioning time

Powerdrive F300 has been designed according to system integrator, OEM and end user needs, based on extensive hands-on customer research. The result is smaller drive dimensions to allow for easier, more economical installation; the programming software enables rapid, clear code development and the drive interface and PC tools also allow fast, simple drive commissioning, diagnostics and maintenance.

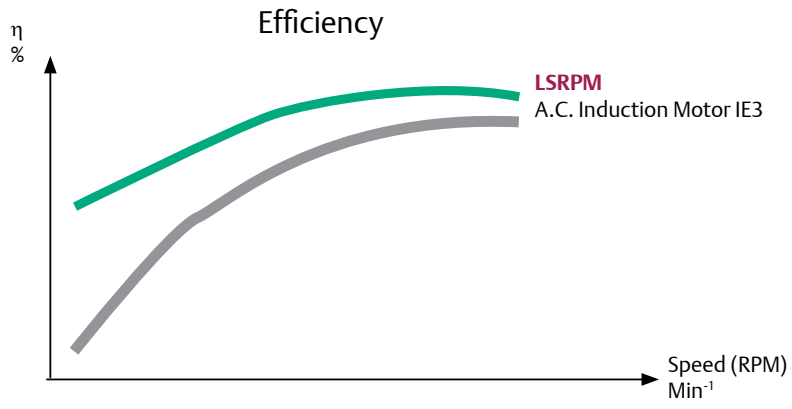
Dyneo® solutions that exceed IE4-equivalent and NEMA Premium ratings

Industry-leading energy efficiency

At the equivalent rated speed, the Dyneo® drive and motor solution has a significantly higher efficiency level than an AC induction motor. Below this rated speed, the energy efficiency advantage is even greater.

Permanent magnet motor control exceeding IE4 and NEMA Premium ratings

LSRPM and PLSRPM motors are market leaders in producing high torque at high speeds, and at equivalent torque they rotate faster than an induction motor. This allows their motor speed to be adapted to that of the driven application, eliminating transmission devices such as gearboxes and enhances performance of the driven machine by increasing its speed. A permanent magnet motor demands variable speed drive control and Powerdrive F300 has been developed specifically for this role, with optimum motor control capabilities.



Further benefits of using a Dyneo® solution

- Potential return on investment in less than 12 months - energy meter automatically calculates energy usage
- Significant experience on permanent magnet motor solutions installation demonstrated by the Emerson Industrial Automation installed base - currently the largest industrial permanent magnet motor installed base in the world
- Matched drive and motor ensures optimum performance with minimal set-up

Increased energy saving with induction motors

Induction motors: meet the new energy efficiency legislation and future proof your investment

Energy efficiency legislation is changing globally. By 2015 all motors in Europe from 7.5 kW to 375 kW must achieve IE3 standard or IE2 standard providing the motor is controlled by a variable speed drive; by 2017 all motors from 0.75 kW upwards must comply to these same regulations.

- Powerdrive F300 will make IE2 motors legislation compliant
- Future proof against further legislation by harnessing the efficiency of Powerdrive F300

Powerdrive F300: efficiency on-board

Powerdrive F300 also increases application efficiency as a result of its own energy saving features:

- Up to 98 % efficient with very low losses
- Low Power Standby Mode and Sleep/Wake using programmable real-time clock (with KI-HOA Keypad RTC) ensure minimal wasted energy
- Advanced Rotor Flux Control (RFC) for optimum energy and performance
- Lower losses at part load for open loop induction motor control as a result of Dynamic V-F

Specific features for exact control of fans, pumps and compressors

Powerdrive F300 is equipped with wide motor control functionality flexible for ventilation, pumping and compression application needs, which can be rapidly accessed to exacting levels of flow control. A comprehensive I/O offering boosts component connectivity and multiple fieldbus protocols are supported, combined with a wide power range to suit your fan, pump and compressor rating.

Flexible control capability

Powerdrive F300 has been designed with specific fan, pump and compressor control features including:

- Fan and pump macros embedded within Powerdrive F300's PC Tools provide fast, simple access to flow performance
- Two PID controllers with anti-windup and user scaling provide flow-specific functionality, enhancing application productivity
- Logic functions including 'AND' , 'OR', 'invert', 'binary sum' and 'timer' achieved through easy menu setup
- Realtime Clock available on the KI-HOA Keypad RTC enables precision in application productivity according to demand, improving control accuracy and saving energy
- Water hammer control with S-ramp deceleration
- Catch a spinning motor – improved starting sequences for fan and pump control
- On-board Fire Mode allowing run to failure in the event of a fire for the extraction of smoke
- Low load condition monitoring and hysteresis for broken belt and dry pump detection

Motor control options available include:

- Open loop permanent magnet motor control (RFC-S)
  - ➔ Control Type - Speed

    Utilizing closed loop current control, this mode offers good dynamic performance and enables more compact and higher efficiency motor technologies to be used.
- Open loop Rotor Flux Control for induction motors (RFC-A)
  - ➔ Control Type - Speed

    Open loop motor control for induction motors utilizing closed loop current control to enhance performance.
- Open loop vector or V/Hz induction motor control
  - ➔ Control Type - Frequency

    Open loop motor control for induction motors and easiest configuration. V/Hz can be used in multi-motor systems.

Flexible control of fans, pumps and compressors

Flexible I/O range

I/O specific to pumping, ventilation and compression application requirements boosts component connectivity and flexibility. I/O connectivity includes:

- 2 x analog input, 2 x analog output, 3 x digital input, 3 x configurable digital output; 2 x form C relay output, 1 x Safe Torque Off input
- SI-I/O option provides additional 4 x Digital I/O, 3 x Analog inputs (default)/Digital inputs, 1 x Analog output (default)/Digital input, 2 x Relays.

Communication connectivity choice

Powerdrive F300 provides flexible communication integration with a wide variety of fieldbus networks. Modbus RTU is supported on-board the drive and additional networks are accessed by Powerdrive F300's option modules.

Networks supported include:

- Ethernet (including Modbus TCP/IP, Ethernet/IP and PROFINET)
- Modbus RTU, DeviceNet and PROFIBUS

Wide power range - 1.1 kW to 2.8 MW (1.5 hp to 4,200 hp)

Powerdrive F300 extends from a rating of 1.1 kW through to 2.8 MW, making it suited to a wide variety of applications. The high power drives from Powerdrive F300's power range are also highly robust and high availability of STO product enables rapid replacement when required.

- Easier, faster installation as a result of modular approach to building high power drives
- Proven drive reliability through high volume production
- Rapid replacement thanks to high stock availability of standard production drive modules

Safe Torque Off

When used as part of a correctly designed safety control system, Powerdrive F300's Safe Torque Off functionality can remove the need for a contactor and can avoid a complete power-down for safe access to machinery.

Harmonics and drive conformance

Sensitive to its environment, Powerdrive F300 has been designed for low harmonic emissions and achieves high conformance levels.

- Total Harmonic Distortion reduced as a result of:
  - DC bus inductor power from 5.5 kW to 55 kW (7.5 hp to 75 hp)
  - AC line reactor power from 75 kW (100 hp) and higher
  - Solutions for 6, 12, 18 and 24 pulse rectifier
  - Active Front End (optional)
- Electromagnetic immunity complies with EN 61800-3 and EN 61000-6-2
- Electromagnetic emission complies with EN 61800-3:
  - With on-board EMC filter, category C3
  - With optional external EMC filter, category C1 or C2 depending on power rating
  - Also complies with EN 61000-3-12 with optional line reactor

On-board PLC
Reduce system build cost, increase programming flexibility

Flexible programming

As a result of its on-board PLC, Powerdrive F300 provides the most flexible drive programming functionality in the fan, pump and compressor market. The on-board PLC gives you the power to create and run programs and enhance automated system control of your applications.

Ease and speed of programming

Programming Powerdrive F300 is rapid and simple, achieved using the drive's accompanying software which is based on an open IEC 61131-3 compliant programming environment. Developed in conjunction with significant user input and testing, the software is clear and intuitive to use resulting in reduced programming time.

The Powerdrive F300 programming software provides:

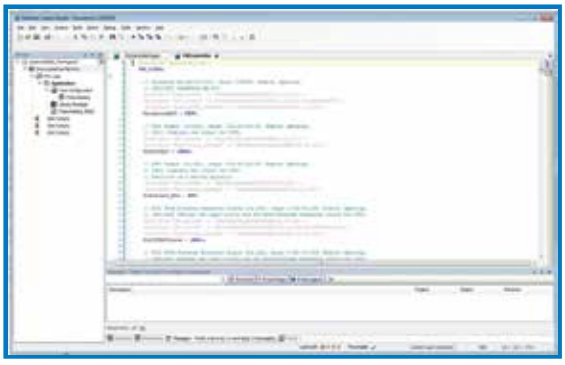
- Simplicity and speed in application programming plus IntelliSense predictive code writing functionality which helps develop consistent code – fast
- Fully IEC 61131-3 compliant open programming software - an industry standard for millions of developers worldwide
- Access to a wide range of open-source function blocks
- Support for the following IEC 61131-3 programming languages:
    - Ladder Diagram (LD)
    - Structured Text (ST)
    - Function Block Diagram (FBD)
    - Sequential Function Chart (SFC)
    - Instruction List (IL)

Reducing system build cost with on-board drive programming

Powerdrive F300's on-board programming capabilities also result in reduced overall cost, physical space and resources required in drive system build by:

- Removing the need for an external controller or additional components required to achieve the equivalent level of logic control
- Reducing the requirements for wiring
- Lowering the time required for system design and installation
- Diminishing the time and cost required in system installation

F300's programming software is included at no additional charge.



Ease of system build, commissioning and maintenance

Powerdrive F300 has been designed for ease and speed of cabinet system build and integration, from physical installation through to drive commissioning. This means reduced physical drive sizes and flexible mounting options, together with clear, easy-to-use drive keypads and PC tools which have been developed through extensive end user collaboration. To assist in a rapid, efficient system build, clear user documentation is supplied and is reinforced by a comprehensive Technical Support Service provided by your local Automation Center.

Fast, flexible system build

Flexible drive mounting options

Powerdrive F300 can be mounted directly into a panel or cabinet for efficiency of design in a variety of flexible positions:

- Through-panel mounting: the drive's heat sink can be mounted through the panel, enabling greater heat dissipation and reducing temperature rise inside the control panel or cabinet.
    - This also enables a reduction in the size of the cabinet, removing the need to accommodate design for heat dissipation from the power stage.
- Panel mounting: fitting directly into the cabinet or panel.
- Tile mounting: utilizing an optional bracket, the drive can be mounted side-on with the option of changing the position of the drive keypad interface to suit, ideal for installations where depth is limited (Available on frame sizes 3, 4 and 5).

Pluggable connectors also enable easy access for wiring and cabinet installation.

High power density through reduced physical dimensions

Powerdrive F300 drives have reduced dimensions and weight at every drive frame size (see figures on pages 26 – 27). Reduced size and weight enable greater efficiency of system design, easier installation and improved maintenance efficiency.

Rapid, easy to use commissioning tools

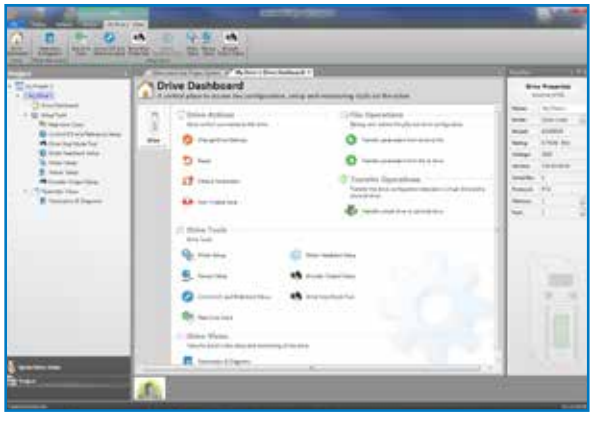
In addition to the drive's user-friendly programming software, Powerdrive F300 enables fast, simple drive commissioning via keypad interfaces, PC tools, SD cards and Smartcards, and manuals.

Powedrive F300 Connect PC Tool benefits

With design focussed on ease of use, the Connect PC Tool configures, optimizes and monitors drive/system control and performance. Developed in a familiar Windows interface, the PC Tool has been created with extensive user input to ensure a highly efficient configuration experience.

- Fan and pump macros ensure fast, easy access to pre-programmed functionality.
- Task-based commissioning enables fast, optimized drive set-up with minimal drive knowledge required.
- Full drive cloning feature provides rapid commissioning of drives with duplicate settings.
- Multiple simultaneous communications channels provide a complete system view.
- Drive discovery tool increases speed of commissioning by automatically locating network drives.
- Scope functionality enables parameter logging.
- Includes a comprehensive database of Leroy-Somer motors to simplify setup through the tool

The Connect PC tool is also included at no additional charge.



High uptime guaranteed

Drive reliability and rapid support service

Ensuring uptime of your critical applications is vital with system downtime potentially resulting in significant cost or business penalties. Powerdrive F300 has been designed to operate in demanding environments and uses highly robust, reliable drive modules. As a result of a comprehensive standard drive module stocking system, in the event of a replacement being required, drives can be rapidly despatched and installed.

Robust drive construction

Powerdrive F300 drive modules incorporate the following resilience features:

- Conformally coated PCBs ensure increased resilience to conditions and greater reliability
- System protection features include: over current, over temperature, under voltage and low speed
- Wide supply voltage tolerance
- Intelligent 10 speed user-replaceable cooling fan

Rapid availability replacement program

In the event of drive failure, you are supported by a comprehensive and rapid replacement service.

- Standard replacements: Our range – including high power – is based on mass produced standard product, enabling rapid accessibility to replacements whatever your specification.
- Comprehensive stock: regional distribution centers carry a broad and deep stock of drive modules, ensuring rapid availability across the range.
- Rapid delivery from international distribution hubs: with distribution centers based across the globe, replacement drive modules are always located within rapid delivery distance.

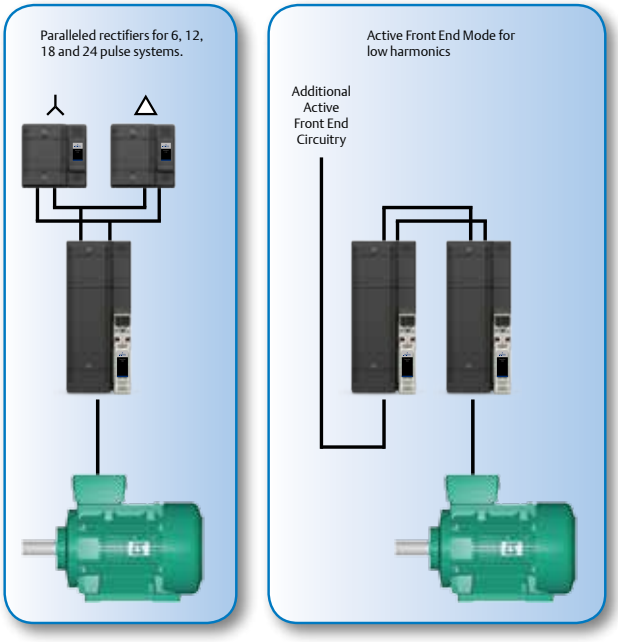
Rapid cabinet system build service

For end users who require the benefits of a complete fan, pump and compressor automation solution rated up to IP65, Powerdrive F300 is also available readily supplied by Emerson Industrial Automation in a cabinet drive system. Available globally as standard, a Powerdrive F300 cabinet drive system can be supplied directly from your local Automation Center.

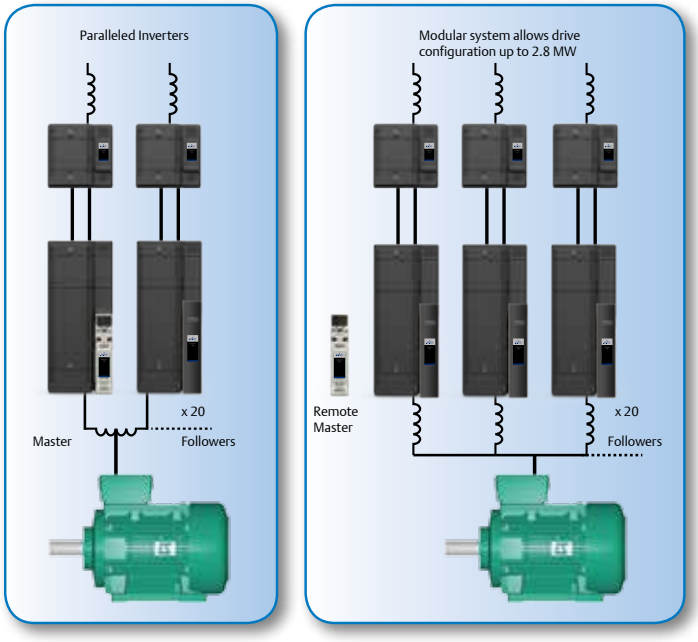
- Flexibility maximized by build-to-order service.
- Powerdrive F300 can achieve IP65 and NEMA4, UL Type 12 when through panel mounted in a suitably rated cabinet.
- Powerdrive F300 cabinet drive systems are built to your specification and designed by your local Automation Center engineers, providing you with control and flexibility in system build.
- Optimizes floor space where multiple Powerdrive F300 drives can be incorporated into a cabinet system.
- Automation Centers are distributed globally and equipped with experienced cabinet build engineers with rapid access to standard drive modules, resulting in fast build and delivery.
- Quality and reliability guaranteed: Emerson Industrial Automation has a proven track record of designing, building and supplying cabinet drive systems.

Power configurations

Standard solutions for harmonic conformance



High power parallel inverter system



Comprehensive options for flexibility

Keypad type*		Description
KI-HOA Keypad RTC: Removable plain text LCD with Realtime clock		The KI-HOA Keypad RTC provides Hand-Off-Auto control. The display presents up to four lines of real text with multi-language translation, enhancing clarity and increasing ease of use. A battery operated Realtime clock allows accurate time stamping of diagnostics and aids quick fault resolution.
Remote Keypad		Remote mountable, plain text, multi-language LCD keypad allows flexible mounting on the outside of a panel and meets IP66 (NEMA 4).
System Integration Modules - Communications		
SI-PROFIBUS		PROFIBUS interface module PROFIBUS-DP (Decentralized Peripheral) interface module enables follower connectivity. It is possible to use more than one SI-PROFIBUS or a combination of SI-PROFIBUS and other option modules to add additional functionality such as extended I/O, gateway functionality, or additional PLC features
SI-DeviceNet		DeviceNet networking system interface module enables follower connectivity. It is possible to use more than one SI-DeviceNet or a combination of SI-DeviceNet and other option modules to provide additional functionality such as extended I/O, gateway functionality, or additional PLC features
SI-CANopen		CANopen interface module supporting various profiles, including several drive profiles
SI-Ethernet		External Ethernet module that supports PROFINET RT, EtherNet/IP and Modbus TCP/ IP and has an integrated web server that can generate emails. The module can be used to provide high speed drive access, global connectivity and integration with IT network technologies, such as wireless networking
SI-PROFINET RT		PROFINET RT interface module provides fast, high-precision communications for maximum plant productivity. Dual port cable connection ensures rapid and easy installation.
System Integration Modules - Additional I/O		
SI-I/O		Extended I/O interface module to increase the number of I/O points on a drive. Provides additional: 4 x Digital I/O, 3 x Analog inputs (default)/Digital inputs, 1 x Analog output (default)/Digital input, 2 x Relays
Smartcard		The optional Smartcard memory device can be used to back-up parameter sets and basic PLC programs, as well as copying them from one drive to another
SD Card Adaptor		Conversion device that allows an SD card to be inserted into the Smartcard slot, for parameter cloning and application programs
Drive interface units - Communications		
CT USB Comms Cable		The CT USB Comms cable allows the drive to connect to a PC for use with Powerdrive F300 Connect - the latest drive configuration tool for commissioning, optimizing and monitoring drive/ system performance

* To reduce your cost, Powerdrive F300 can be supplied without a keypad. Please specify your preference when ordering.

Manuals

Powerdrive F300 is supplied with a Getting Started Guide to assist with fast, efficient commissioning. A detailed user guide is also available to download online, or can be requested from Automation Centres

Powerdrive F300 features

* Features and their locations vary on some drive sizes

Drives and motors technology

Drives and Controllers

AC drives for Process Control

Powerdrive F300

Flexible drive, easily adaptable to your particular application requirements

1.1 kW to 2.8 MW (1.5 – 4,200 hp)

6, 12 and 18 pulse and AFE

Powerdrive MD2

Ready to use wall mount or free-standing drive

45 kW to 2.8 MW (60 – 4,200 hp)

6, 12 and 18 pulse and AFE

Motors

General purpose permanent magnet motors

Dyneo® range

Premium efficiency PM synchronous motors with drive.

IP55 & IP23. IE3 & IE4

0.75 - 550 kW (1 - 750 hp)

375 - 5,500 rpm

General purpose asynchronous motors

IMfinity® and LS motor range

High and premium efficiency motors for fixed and variable speed

0.06 - 1,800 kW
(0.8 - 2,500 hp)

Non IE, IE2, IE3 derivative ranges (Atex, Nuclear, High temp, liquid cooled and customized versions)

Asynchronous motor with integrated drive

Varmeca

For variable speed applications

Fit to standard gears

0.25 - 11 kW (0.33 - 15 hp)

IP65

Powerdrive F300 ratings and specifications

200/240 Vac ±10%			
Drive	Normal Duty		
	Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
F300-03200066A10	6.6	1.1	1.5
F300-03200080A10	8	1.5	2
F300-03200110A10	11	2.2	3
F300-03200127A10	12.7	3	3
F300-04200180A10	18	4	5
F300-04200250A10	25	5.5	7.5
F300-05200300A10	30	7.5	10
F300-06200500A10	50	11	15
F300-06200580A10	58	15	20
F300-07200750A10	75	18.5	25
F300-07200940A10	94	22	30
F300-07201170A10	117	30	40
F300-08201490A10	149	37	50
F300-08201800A10	180	45	60
F300-09202160A10	216	55	75
F300-09202660A10	266	75	100
F300-09202160E10	216	55	75
F300-09202660E10	266	75	100
F300-10203250E10	325	90	125
F300-10203600E10	360	110	150

380/480 Vac ±10%			
Drive	Normal Duty		
	Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
F300-03400034A10	3.4	1.1	1.5
F300-03400045A10	4.5	1.5	2
F300-03400062A10	6.2	2.2	3
F300-03400077A10	7.7	3	5
F300-03400104A10	10.4	4	5
F300-03400123A10	12.3	5.5	7.5
F300-04400185A10	18.5	7.5	10
F300-04400240A10	24	11	15
F300-05400300A10	30	15	20
F300-06400380A10	38	18.5	25
F300-06400480A10	48	22	30
F300-06400630A10	63	30	40
F300-07400790A10	79	37	50
F300-07400940A10	94	45	60
F300-07401120A10	112	55	75
F300-08401550A10	155	75	100
F300-08401840A10	184	90	125
F300-09402210A10	221	110	150
F300-09402660A10	266	132	200
F300-09402210E10	221	110	150
F300-09402660E10	266	132	200
F300-10403200E10	320	160	250
F300-10403610E10	361	200	300

Information on higher powers will appear in subsequent issues of this brochure.

500/575 Vac ±10%			
Drive	Normal Duty		
	Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
F300-05500039A10	3.9	2.2	3
F300-05500061A10	6.1	4	5
F300-05500100A10	10	5.5	7.5
F300-06500120A10	12	7.5	10
F300-06500170A10	17	11	15
F300-06500220A10	22	15	20
F300-06500270A10	27	18.5	25
F300-06500340A10	34	22	30
F300-06500430A10	43	30	40
F300-07500530A10	53	37	50
F300-07500730A10	73	45	60
F300-08500860A10	86	55	75
F300-08501080A10	108	75	100
F300-09501250A10	125	90	125
F300-09501550A10	155	110	150
F300-09501250E10	125	90	125
F300-09501500E10	150	110	150
F300-10502000E10	200	130	200

500/690 Vac ±10%			
Drive	Normal Duty		
	Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
F300-07600230A10	23	18.5	25
F300-07600300A10	30	22	30
F300-07600360A10	36	30	40
F300-07600460A10	46	37	50
F300-07600520A10	52	45	60
F300-07600730A10	73	55	75
F300-08600860A10	86	75	100
F300-08601080A10	108	90	125
F300-09601250A10	125	110	150
F300-09601500A10	150	132	175
F300-09601250E10	125	110	150
F300-09601550E10	155	132	175
F300-10601720E10	172	160	200
F300-10601970E10	197	185	250

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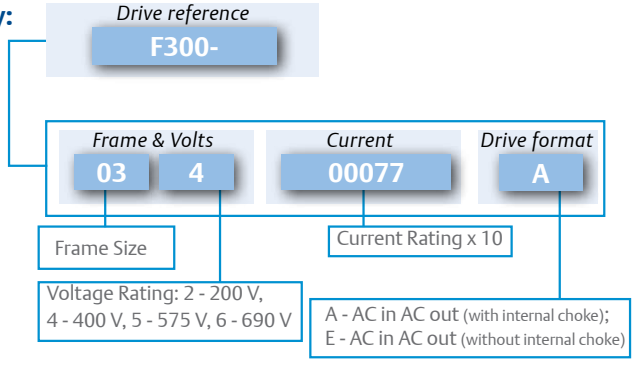

Powerdrive F300 ratings and specifications

Normal Duty operation only

Suitable for fan, pump and compressor applications, with a current overload requirement of 110%.

Conformance

- IP20 / NEMA1 / UL TYPE 1
  *UL open class as standard, additional kit needed to achieve Type 1
- IP65 / NEMA4 / UL TYPE 12 rating is achieved on the rear of the drive when through panel mounted
  * Frame size 9D, 9E, 10D and 10E achieve IP55 / NEMA 4 / UL Type 12
- Ambient temperature -20 °C to 40 °C as standard. Up to 55 °C with derating
- Humidity 95 % maximum (non-condensing) at 40 °C
- Altitude: 0 to 3000m, derate 1 % per 100 m between 1000 m and 3000 m
- Random Vibration Tested in accordance with IEC 60068-2-64
- Bump Tested in accordance with IEC 60068-2-29
- Sinusoidal Vibration Tested in accordance with IEC 600068-2-6
- Mechanical Shock Tested in accordance with IEC 60068-2-29
- Storage temperature -40 °C to 55 °C or up to 70 °C for short-term storage
- Electromagnetic Immunity complies with EN 61800-3 and EN 61000-6-2
- With onboard EMC filter, emissions comply with EN 61800-3 (category C3)
- EN 61000-6-3 and EN 61000-6-4 with optional footprint EMC filter
- IEC 60146-1-1 Supply conditions (category C1 or C2 depending on rating)
- IEC 61800-5-1 (Electrical Safety)
- IEC 61131-2 I/O
- EN 61000-3-12 with optional line reactor
- UL 508C (Electrical Safety)

Optional media and accessories

Description	Order code
SD-Smartcard Adaptor	3470-0047
Smartcard (64 KB)	2214-0010
CT Comms Cable	4500-0096*

*The USB Comms Cable provides PC connectivity to the drive, enabling drive configuration with the Connect PC Tool. Use of the Connect PC Tool is recommended for setup of LSRPM motors.

Through hole kits

Frame size	Order code
3	3470-0053
4	3470-0056
5	3470-0067
6	3470-0055
7	3470-0079
8	3470-0083
9A	3470- 0119
9E/10E	3470-0105

Conduit kits

Frame size	Order code
3 & 4	6521-0071
5	3470-0069
6	3470-0059
7	3470-0080
8	6500-0106
9E & 10E	3470-0115

Line reactors

Frame size	Order code
9E/D 200 V/400 V	4401-0181
9E/D 575 V/690 V	4401-0183
10E/D 200 V/400 V	4401-0182
10E/D 575 V/690 V	4401-0184

Dimensions and Weight

Frame Size		3	4	5	6	7	
Dimensions (H x W x D)	mm	382 x 83 x 200	391 x 124 x 200	391 x 143 x 200	391 x 210 x 227	557 x 270 x 280	
	in	15.0 x 3.3 x 7.9	15.4 x 4.9 x 7.9	15.4 x 5.6 x 7.6	15.4 x 8.3 x 8.9	21.9 x 10.6 x 11.0	
Weight	kg (lb)	4.5 (9.9)	6.5 (14.3)	7.4 (16.3)	14 (30.9)	28 (61.7)	

Panel mount retrofit kits

Flush fit multiple drives via through hole mounting

Frame size	Order code
4	3470-0062
5	3470-0066
6	3470-0074
7	3470-0078
8-10	3470-0118

Option Modules

Option Module	Order code
SI-PROFIBUS	82400000017500
SI- Ethernet	82400000017900
SI-DeviceNet	82400000017700
SI-CANopen	82400000017600
SI-PROFINET RT	82400000018200
SI-I/O	82400000017800

Tile mount kits

Frame size	Order code
3	3470-0049
4	3470-0060
5	3470-0073

General kit items

Item	Order code
Keypad blanking cover (10 pieces in pack)	3470-0058
Frame size 3 & 4 power connector split kit	3470-0064

Optional external EMC filters

Unidrive M built-in EMC filter complies with EN 61800-3. External EMC filters are required for compliance with EN 61000-6-4.

Frame size	Voltage	Order code
3	200 V	4200-3230
	400 V	4200-3480
4	200 V	4200-0272
	400 V	4200-0252
5	200 V	4200-0312
	400 V	4200-0402
	575 V	4200-0122
6	200 V	4200-2300
	400 V	4200-4800
	575 V	4200-3690
7	200 V	4200-1132
	400 V	4200-1132
	575 V	4200-0672
	690 V	4200-0672
8	200 V	4200-1972
	400 V	4200-1972
	575 V	4200-1662
	690 V	4200-1662
9A	200 V	4200-3021
	400 V	4200-3021
	575 V	4200-1660
	690 V	4200-1660
9E &10E	200 V	4200-4460
	400 V	4200-4460
	575 V	4200-2210
	690 V	4200-2210

	8	9A	9E/10E	9D/10D
	803 x 310 x 290	1108 x 310 x 290	1069 x 310 x 290	Rectifier 355 x 310 x 290 Inverter 773 x 310 x 290
	31.6 x 12.2 x 11.4	43.6 x 12.2 x 11.4	42.1 x 12.2 x 11.4	Rectifier 15.8 x 12.2 x 11.4 Inverter 30.4 x 12.2 x 11.4
	50 (110.2)	66.5 (146.6)	46 (101.4)	

For a full list of patents and patent applications, visit www.controltechniques.com/patents.

Dimensions include mounting brackets.

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