

PowerFlex[®] 700S



Optimized Integration.

PowerFlex[®] 700S AC Drive

Function Modules

The Allen-Bradley PowerFlex 700S AC drive, a version of PowerFlex 700 power platform, offers optimized integration for the most demanding drive control and drive system applications. Harness the power of Logix by including the Embedded Logix option, "DriveLogix", on the PowerFlex 700S. The PowerFlex 700S with DriveLogix combines the powerful performance and flexible control of PowerFlex AC drives with the high-performance Logix engine to produce a highly functional, cost-effective drive and control solution.

Integrated Installation

- Innovative bookshelf design optimizes panel space, allowing Zero Stacking™ or side-by-side mounting of the drives
- Drive design incorporates proven noise and voltage suppression characteristics, reducing installation concerns for noise-sensitive environments
- Pull-apart control terminal blocks allow for easy wiring and quick disconnect
- Embedded Logix for space saving drive and control

Integrated Drive Commissioning

- LCD Human Interface Module features an assisted start-up utility that allows users to easily configure and tune the drive
- Optimized global voltage settings designed to worldwide standards allow quick set-up anywhere in the world
- PC tools such as DriveTools™ SP or RSLogix 5000™, assist with programming, configuration, monitoring and troubleshooting
- Flash upgrade for both the Drive Control and programmable DriveLogix capabilities equip the designer with the latest control features available

Integrated Application Solutions

- Multiple high performance motor control algorithms for maximum application flexibility within one drive
- Standard transistor and available drive-mounted (or separately mounted) braking resistor provide cost-effective dynamic brake options
- Multiple feedback options optimize the accuracy of speed and position regulators
- High speed 24 V DC I/O and high resolution analog I/O
- Integrated position loop for applications from simple indexing to electronic line shaft configurations
- SynchLink fiber optic link for the highest level of drive coordination
- AC or DC common bus configurations for stand alone or multiple drive solutions



PowerFlex 700S AC Drive
0.37 to 250 kW; 0.5 to 450 hp

Communications

PowerFlex drives offer a dedicated internal communication options helping the user to cost-effectively assemble highly integrated applications linking drives to the manufacturing process. By utilizing Drive Peripheral Interface (DPI), PowerFlex drives interface to a variety of HIM (Human Interface Modules) and communication networks.

Programming Solutions with Logix

- DriveLogix, the embedded Logix engine, provides true programmability, within an industry standard programming environment
- Common Logix engine allows program portability with other Logix platforms
- Application software modules available for applications such as winding, positioning, tensioning and more...
- Support for Logix integrated motion instruction set including home, jog, move, gear and cam

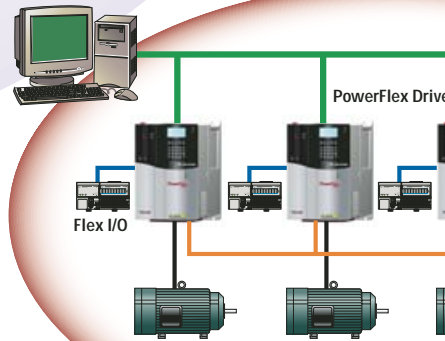


PowerFlex 700S - Powerful Performance

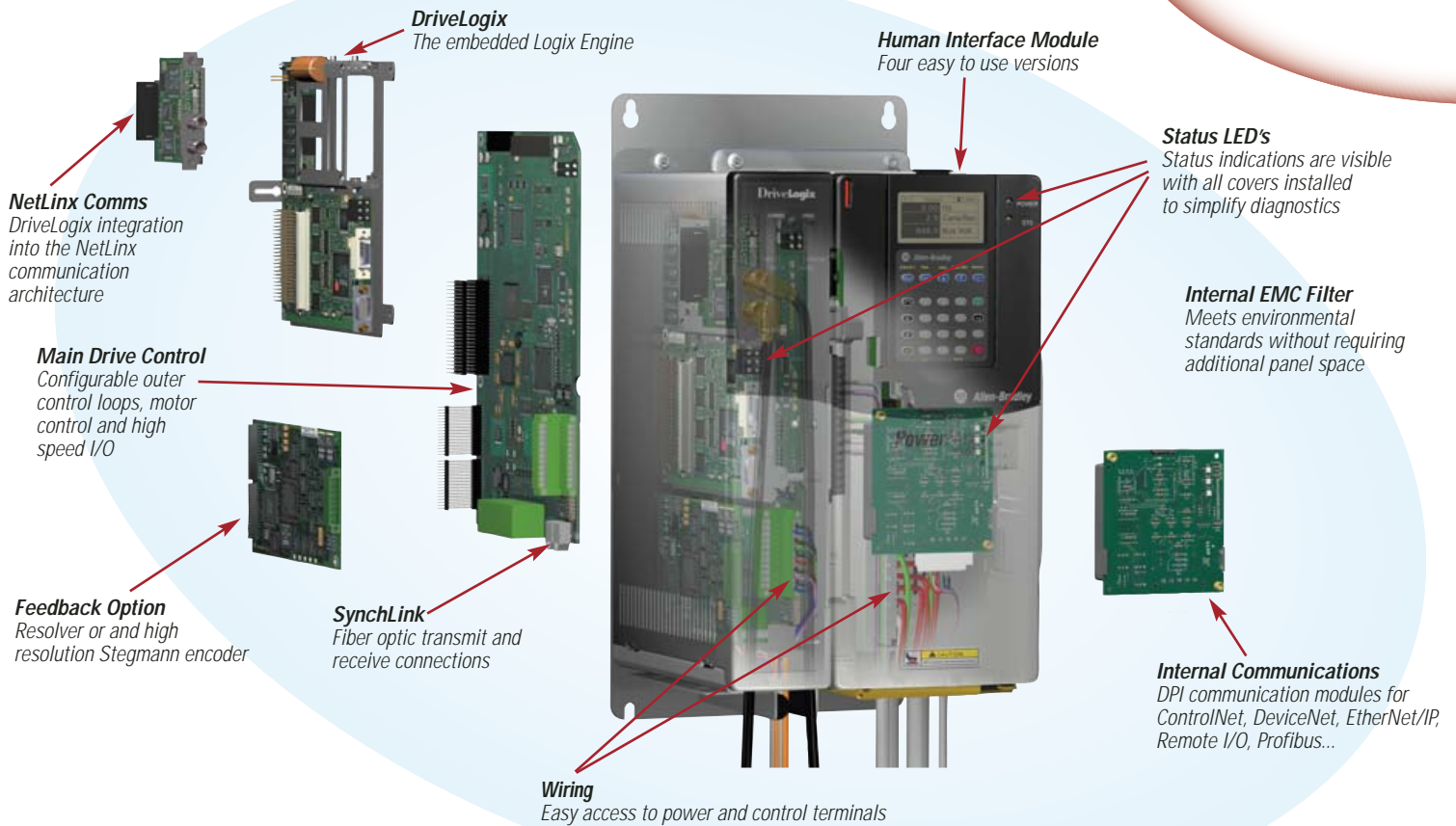
The PowerFlex 700S offers powerful performance and integrated features to meet the demands of new and traditional Allen-Bradley drive applications.



- Selectable high-performance motor control algorithms utilizing FORCE Technology
 - Field Oriented Control (FOC)
 - FOC Sensorless operation
 - FOC for brushless motors
- Speed regulation is +/- 0.001% of top speed with a feedback device over a wide speed range, providing reduced speed ripple at low speeds
- Synchronized Position, Speed, Torque and process control loops optimize throughput
- Integral position loop with motor and load side feedback devices
 - Coarse to fine interpolator for external planners
 - Direct positioning for precise machine control
 - Point to Point for indexing
- (2) Standard quadrature encoder inputs with optional feedback boards for resolver and high resolution Stegmann feedback devices
- Automatic feedback loss switchover to encoderless
- SynchLink™, a high performance, high speed, synchronization and drive-to-drive data link
 - Processor synchronization for multiple devices within 1 μSec
 - 50 μSec maximum transfer rates with multiple data configurations
 - Transmitting drive and application data
- Ten step assisted start-up routine for configuring motor control, motor data, feedback devices, motor tests/tuning and speed control
- Complete motor autotune and inertia measurement for both induction and brushless motor control
- Advanced diagnostics including fault/alarm queue and configurable high speed trend buffers
- Advanced functions for lost motion compensation, Servo Lock and speed response shaping for precision drive control



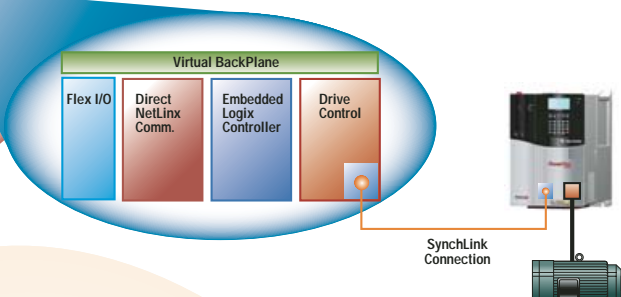
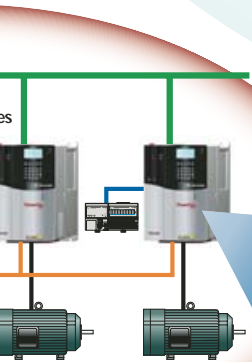
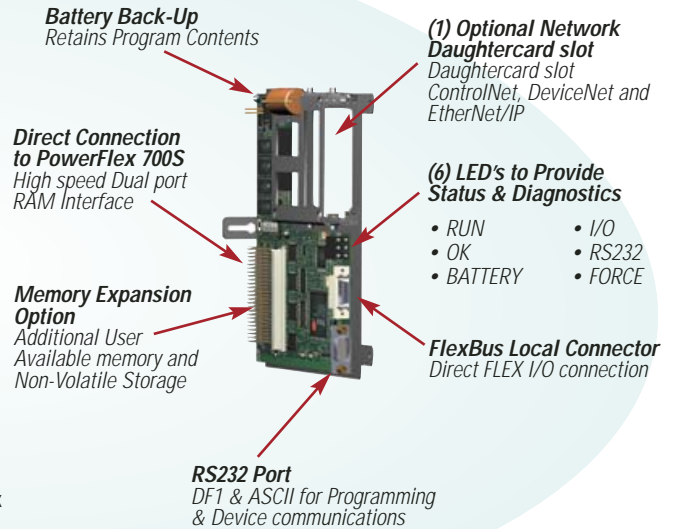
Flexible Control



DriveLogix - Embedded Logix Engine

DriveLogix offers embedded Logix control for application programmability and control of auxiliary functions in one package, the PowerFlex 700S with DriveLogix.

- Common programming environment and multiple programming languages supported by all Logix platforms
 - Ladder Diagram, Function Block Diagram, Sequential Function Chart and Structured Text
- (8) separate tasks including (1) continuous and (7) periodic. Each task can support up to 32 programs and an unlimited number of routines for program organization
- 256 Kbytes of standard user memory and optional 768 Kbyte configuration.
- Non-Volatile storage available with the memory expansion option providing long term memory storage without a battery
- Local connection for up to (8) Flex I/O™ modules
 - Communication options including the RS-232 port and the same optional communication daughter cards used by the FlexLogix™ controller
 - Virtual backplane concept for program portability to other Logix platforms, seamless integration into the NetLinX architecture and direct drive communication



Application Solutions

The PowerFlex 700S AC drive is ideally suited for high performance applications in a wide variety of industries including converting, paper, print, metals, material handling, automotive...

Leverage Rockwell Automation's extensive application expertise with pre-engineered and tested Application Software developed specifically for the PowerFlex 700S with DriveLogix.



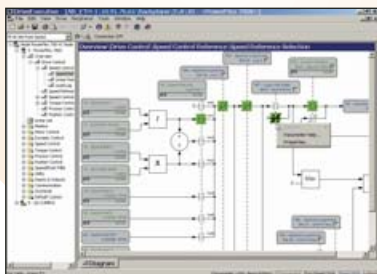
For consultation on high performance drive applications, Rockwell Automation's SupportPlus program uses expert level Rockwell Automation system engineers to support your engineering team.

Integrated Software

DriveTools SP

A powerful new PC based software suite, for programming, configuration and troubleshooting

- DriveExecutive – for online/offline configuration and management of drives and drive peripherals
- DriveObserver – for real time trending of drive information
- DriveExpert – for expert-system based troubleshooting assistance – Future

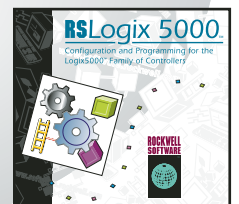


DriveExecutive v3.01 diagram views make troubleshooting drive applications easier

RSLogix 5000

The PowerFlex 700S with DriveLogix utilizes RSLogix 5000, v10.0 or greater, with embedded DriveExecutive Lite for programming, configuration and troubleshooting the drive and embedded Logix controller

- Single programming software package for the entire family of Logix5000 products
- Reduces learning curve between controllers
- Multiple IEC1131-3 programming languages
- Symbolic tag and structure data model
- Integrated sequential and motion control
- Power programming tools to increase productivity



Ratings

Output Power		200 Volt Class			240 Volt Class			Frame Size
kW ND (HD)	HP ND (HD)	Output Current			Output Current			
		Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	
0.75 (0.55)	1 (0.75)	4.8	5.6	7.0	4.2	4.8	6.4	1
1.5 (75)	2 (1.5)	7.8	10.4	13.8	6.8	9.0	12.0	1
2.2 (1.5)	3 (2)	11	12.1	17.0	9.6	10.6	14.4	1
4 (2.2)	5 (3)	17.5	19.3	26.3	15.3	16.8	23.0	1
5.5 (4)	7.5 (5)	25.3	27.8	38.0	22.0	24.2	33.0	1
7.5 (5.5)	10 (7.5)	32.2	38.0	50.6	28.0	33.0	44.0	2
11 (7.5)	15 (10)	48.3	53.1	72.5	42.0	46.2	63.0	3
15 (11)	20 (15)	56.0	64.0	86.0	52.0	63.0	80.0	3
18.5 (15)	25 (20)	78.2	86.0	117.3	70.0	78.0	105.0	4
22 (18.5)	30 (25)	92.0	117.3	156.4	80.0	105.0	136.0	4
30 (22)	40 (30)	120 (92)	132 (138)	175 (175)	104 (80)	115 (120)	175 (160)	5
37 (30)	50 (40)	130 (104)	143 (156)	175 (175)	104 (130)	143 (156)	175 (175)	5
45 (37)	60 (50)	177 (150)	195 (225)	266 (300)	154 (130)	231 (195)	308 (260)	6
55 (45)	75 (60)	221 (177)	243 (266)	308 (308)	192 (154)	211 (231)	288 (308)	6

Output Power		400 Volt Class			480 Volt Class			Frame Size
kW ND (HD)	HP ND (HD)	Output Current			Output Current			
		Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	
0.75 (0.55)	1 (0.75)	2.1	2.4	3.2	2.1	2.4	3.2	1
1.5 (75)	2 (1.5)	3.5	4.5	6.0	3.4	4.5	6.0	1
2.2 (1.5)	3 (2)	5.0	5.5	7.5	5.0	5.5	7.5	1
4 (2.2)	5 (3)	8.7	9.9	13.2	8.0	8.8	12.0	1
5.5 (4)	7.5 (5)	11.5	13.0	17.4	11.0	12.1	16.5	1
7.5 (5.5)	10 (7.5)	15.4	17.2	23.1	14.0	16.5	22.0	1
11 (7.5)	15 (10)	22.0	24.2	33.0	22.0	24.2	33.0	1
15 (11)	20 (15)	30.0	33.0	45.0	27.0	33.0	44.0	2
18.5 (15)	25 (20)	37.0	45.0	60.0	34.0	40.5	54.0	2
22 (18.5)	30 (25)	43.0	55.5	74.0	40.0	51.0	68.0	3
30 (22)	40 (30)	56.0	64.5	86.0	52.0	60.0	80.0	3
37 (30)	50 (40)	72.0	84.0	112	65.0	78.0	104	3
45 (37)	60 (50)	85 (72)	94 (108)	128 (144)	77 (65)	85 (98)	116 (130)	4
55 (45)	75 (60)	105 (85)	116 (128)	158 (170)	96 (77)	106 (116)	144 (154)	5
55 (45)	100 (75)	125 (96)	138 (144)	163 (168)	125 (96)	138 (144)	163 (168)	5
75 (55)	—	140 (105)	154 (157)	190 (190)	—	—	—	6
90 (75)	125 (100)	170 (140)	187 (210)	255 (280)	156 (125)	172 (188)	233 (250)	6
110 (90)	150 (125)	205 (170)	220 (255)	300 (340)	180 (156)	198 (234)	270 (312)	6
132 (90)	200 (150)	260 (205)	286 (308)	390 (410)	232 (180)	273 (270)	372 (360)	6
132 (110)	200 (150)	261 (205)	287 (308)	410	261 (205)	287 (308)	410	9
160 (132)	250 (200)	300 (245)	330 (368)	450 (490)	300 (245)	330 (368)	450 (490)	9
200 (160)	300 (250)	385 (300)	424 (450)	600	385 (300)	424 (450)	600	10
250 (200)	350 (300)	460 (385)	506 (578)	770	460 (385)	506 (578)	770	10
250 (200)	450 (350)	500 (420)	550 (630)	750 (840)	500 (420)	550 (630)	750 (840)	10

Output Power		600 Volt Class			690 Volt Class			Frame Size
kW ND (HD)	HP ND (HD)	Output Current			Output Current			
		Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	
0.75 (0.55)	1 (0.75)	1.7	2.0	2.6	N/A	—	—	1
1.5 (75)	2 (1.5)	2.7	3.6	4.8	N/A	—	—	1
2.2 (1.5)	3 (2)	3.9	4.3	5.9	N/A	—	—	1
4 (2.2)	5 (3)	6.1	6.7	9.2	N/A	—	—	1
5.5 (4)	7.5 (5)	9.0	9.9	13.5	N/A	—	—	1
7.5 (5.5)	10 (7.5)	11	13.5	18	N/A	—	—	1
11 (7.5)	15 (10)	17	18.7	25.5	N/A	—	—	1
15 (11)	20 (15)	22	25.5	34	N/A	—	—	2
18.5 (15)	25 (20)	27	33	44	N/A	—	—	2
22 (18.5)	30 (25)	32	40.5	54	N/A	—	—	3
30 (22)	40 (30)	41	48	64	N/A	—	—	3
37 (30)	50 (40)	52	61.5	82	N/A	—	—	3
45 (37)	60 (50)	62	78	104	N/A	—	—	4
45 (37)	—	—	—	—	52 (46)	57 (69)	78 (92)	5
55 (45)	—	—	—	—	60 (52)	66 (78)	90 (104)	5
75 (55)	75 (60)	77 (63)	85 (94)	116 (126)	82 (60)	90 (90)	120 (123)	5
90 (75)	100 (75)	99 (77)	109 (116)	126 (138)	98 (82)	108 (123)	127 (140)	5
110 (90)	125 (100)	125 (99)	138 (149)	188 (198)	119 (98)	131 (147)	179 (196)	6
132 (110)	150 (125)	144 (125)	158 (188)	216 (250)	142 (119)	156 (179)	213 (238)	6

Dimensions mm (in)

Frame Size	Dimensions		
	Height mm (in.)	Width mm (in.)	Depth mm (in.)
1	389 (15.31)	200 (7.87)	202.7 (7.98)
2	389 (15.31)	285 (11.22)	202.7 (7.98)
3	564 (22.20)	285 (11.22)	202.7 (7.98)
4	758.9 (29.88)	285.9 (11.26)	202.7 (7.98)
5	644.5 (25.37) ¹	369.4 (14.54)	275.4 (10.84)
6	850 (33.46) ²	466.7 (18.37)	275.5 (10.85)
9	1150 (45.28)	480 (18.9)	362 (14.25)
10	2275 (86.6) ³	600 (23.62) ³	600 (23.62) ³

Notes:

- When using the supplied junction box (100 HP drives only), add an additional 45.1 mm (1.78 in.) to this dimension.
- When using the supplied junction box, add an additional 126.3 mm (4.97 in.) to this dimension.
- Free standing Rittal enclosure.

Standards

- CSA/cUL
- CE
- UL
- EMC EN61800-3
- Low Voltage EN60204-1/EN50178

Input Specifications

- 3-Phase Voltage: 200-240V +/- 10%, 380-480V +/- 10%,
500-600V +/- 10% / -5%
- Frequency: 47 to 63 Hz
- Logic Control
- Ride Through: 0.25 seconds

Output Specifications

- Voltage: Adjustable from 0V to rated motor
- Frequency Range: 0-320Hz
- Instantaneous Over
- Current Trip: 220-300% based on drive rating

Enclosure and Ambient Operating Temperatures

- Open Type/IP20: 0° - 50° C (32° - 122° F)
- Type 1: 0° - 40° C (32° - 104° F)
- Frame 9 & Up: 0° - 40° C (32° - 104° F)

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