

PRODUCT PROFILE

PowerFlex® 700S AC DRIVE

The Allen-Bradley® PowerFlex 700S AC drive, a version of the PowerFlex® 700 power platform, offers optimized integration for the most demanding stand-alone and coordinated drive control and drive system applications.

The PowerFlex 700S with the DriveLogix™ option combines the powerful performance and flexible control of PowerFlex AC drives with a 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
- Scalable hardware options to include feedback and communications

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 upgrades for both the Drive control and programmable DriveLogix, equip the designer with the ability to upgrade to the latest control features available
- Simplified speed reference selection and configuration

POWERFUL PERFORMANCE. FLEXIBLE CONTROL.



PowerFlex 700S AC Drive 0.75 to 800 kW; 1.0 to 1250 hp

INTEGRATED APPLICATION SOLUTIONS

- Selectable 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 24V dc and 120V ac I/O and high resolution analog I/O provides application I/O flexibility
- Integrated position loop for positioning applications from indexing to electronic line shaft configurations
- SynchLink™ fiber optic link for the highest level of drive coordination and data transfer
- AC or DC common bus configurations for stand alone or multiple drive solutions
- Seven preset speeds with programmable control through digital inputs or communications
- User Function Library provides logic functions without a PLC

COMMUNICATIONS

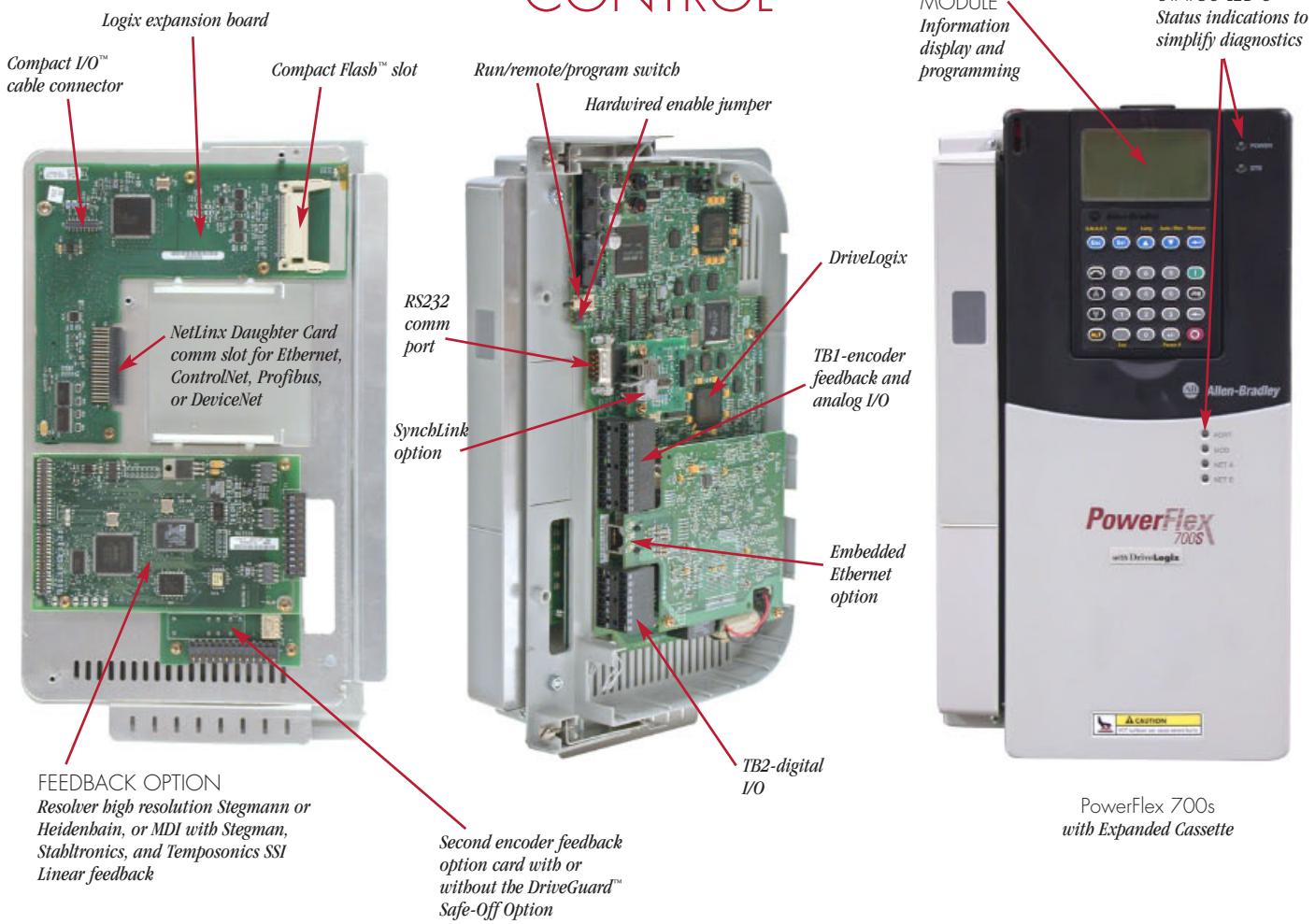
The Allen-Bradley PowerFlex family of drives utilizes Rockwell Automation's NetLinx Open Network Architecture. This provides the common set of features and services for DeviceNet™, ControlNet™, and EtherNet/IP™ networks resulting in lower total cost of ownership. Users can easily manage information from shop floor to top floor and seamlessly integrate their complete system as they control, configure, and collect data.

- PowerFlex drives offer internal communication options helping the user to cost-effectively assemble highly integrated applications. Options include: DeviceNet, ControlNet, Universal Remote I/O™, and other open communications including PROFIBUS™ DP and Interbus™
- Status indicators for all internal communications options are visible on the cover for easy set-up and monitoring of drive communications.

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.

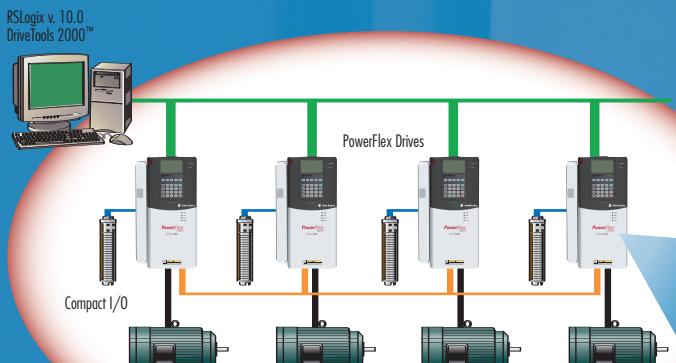
- Selectable high-performance motor control algorithms utilizing FORCE™ Technology
 - Vector, sensorless vector, V/Hz and permanent magnet motor control
- SynchLink, a high performance, high speed, synchronization and drive-to-drive data link
 - Processor synchronization for multiple devices
 - 50 µSec maximum transfer rates with multiple data configurations
 - Transmits drive and application data
- 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 indexing
 - Position initialization for absolute feedback
- Standard quadrature encoder input with optional feedback boards for a resolver, Stegmann and Heidenhain™ high resolution feedback, Stahltronic and Temposonics® SSI Linear feedback, and an additional quadrature encoder option
- Automatic feedback loss switchover to encoderless
- 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
- Fast control loops for increased bandwidth



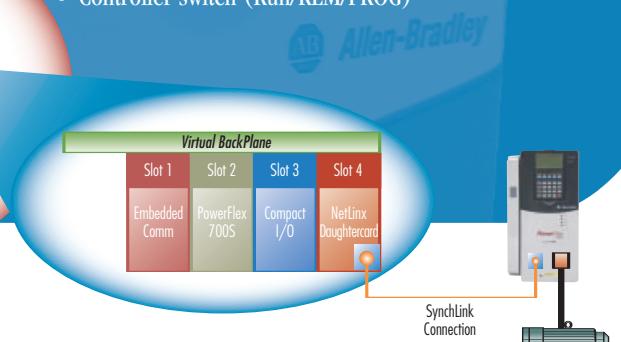
DRIVELOGIX - EMBEDDED LOGIX ENGINE

DriveLogix 5730 offers embedded Logix control for application programmability and control of auxiliary functions in one package.

- 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
- 1.5 megabytes of memory and CompactFlash™ for non-volatile storage



- Local connection for up to 16 modules of Compact I/O
- Communication options including the RS-232 port and an embedded EtherNet option for operator interface or programming
- Virtual backplane concept for program portability to other Logix platforms, seamless integration into the NetLinx™ architecture and direct drive communication
- Support for Logix integrated motion instruction set including, home, jog, move, gear, and cam for complex motion control
- Communication
 - Embedded EtherNet/IP
 - FlexLogix Communication Daughter cards support for ControlNet, DeviceNet, EtherNet and ProfiBus
- Controller switch (Run/REM/PROG)



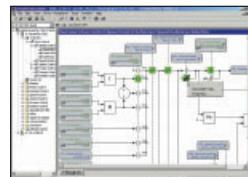
INTEGRATED SOFTWARE



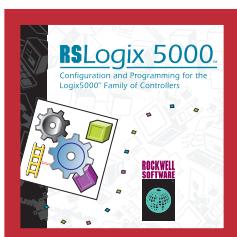
DRIVETOOLS SP

A powerful 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



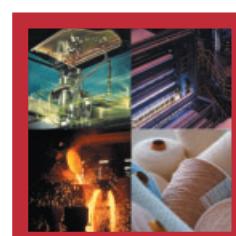
DriveExecutive v3.01 diagram views make troubleshooting drive applications easier



RSLOGIX 5000

The PowerFlex 700S with DriveLogix utilizes RSLogix 5000, v13.0 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
- Powerful programming tools to increase productivity



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...

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



DRIVE APPLICATION SOFTWARE

Drive Application Software brings together an outstanding range of application experience and performance drive products to provide the user with pre-engineered and cost-effective drive application solutions.

RATINGS

208/240V ac, Three-Phase Drives

240V ac Input				208V ac Input				Frame Size		
Output Amps		Normal Duty Hp	Heavy Duty Hp	Output Amps		Normal Duty kW	Heavy Duty kW			
Cont.	1 Min.	3 Sec.	Cont.	1 Min.	3 Sec.	Cont.	1 Min.			
4.2	4.8	6.4	1.0	0.75	4.8	5.6	7.0	0.75	0.37	1
6.8	9.0	12	2.0	1.5	7.8	10.4	13.8	1.5	0.75	1
9.6	10.6	14.4	3.0	2.0	11	12.1	17	2.2	1.5	1
15.3	16.8	23	5.0	3.0	17.5	19.3	26.3	4.0	2.2	1
22	24.2	33	7.5	5.0	25.3	27.8	38	5.5	4.0	1
28	33	44	10	7.5	32.2	38	50.6	7.5	5.5	2
42	46.2	63	15	10	48.3	53.1	72.5	11	7.5	3
52	63	80	20	15	56	64	86	15	11	3
70	78	105	25	20	78.2	86	117.3	18.5	15	4
80	105	136	30	25	92	117.3	156.4	22	18.5	4
104 (80) [§]	115 (120)	175 (160)	40	30	120 (92)	132 (138)	175 (175)	30	22	5
130 (104) [§]	143 (156)	175 (175)	50	40	130 (104)	143 (156)	175 (175)	30	30	5
154 (130) [§]	169 (195)	231 (260)	60	50	177 (150)	195 (225)	266 (300)	45	37	6
192 (154) [§]	211 (231)	288 (308)	75	60	221 (177)	243 (266)	308 (308)	55	45	6
260 (205) [§]	286 (305)	390 (410)	100	75	260 (205)	286 (305)	390 (410)	66	55	6

[§] These drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

380...480V ac, Three-Phase Drives

480V ac Input				380...400V ac Input				Frame Size		
Output Amps		Normal Duty Hp	Heavy Duty Hp	Output Amps		Normal Duty kW	Heavy Duty kW			
Cont.	1 Min.	3 Sec.	Cont.	1 Min.	3 Sec.	Cont.	1 Min.			
2.1	2.4	3.2	1	0.75	2.1	2.4	3.2	0.75	0.55	1
3.4	4.5	6	2	1.5	3.5	4.5	6	1.5	0.75	1
5	5.5	7.5	3	2	5	5.5	7.5	2.2	1.5	1
8	8.8	12	5	3	8.7	9.9	13.2	4	2.2	1
11	12.1	16.5	7.5	5	11.5	13	17.4	5.5	4	1
14	16.5	22	10	7.5	15.4	17.2	23.1	7.5	5.5	1
22	24.2	33	15	10	22	24.2	33	11	7.5	1
27	33	44	20	15	30	33	45	15	11	2
34	40.5	54	25	20	37	45	60	18.5	15	2
40	51	68	30	25	43	56	74	22	18.5	3
52	60	80	40	30	56	64	86	30	22	3
65	78	104	50	40	72	84	112	37	30	3
77 (65) [§]	85 (98)	116 (130)	60	50	85 (72) [†]	94 (108)	128 (144)	45	37	4
96 (77) [§]	106 (116)	144 (154)	75	60	105 (85)	116 (128)	158 (170)	55	45	5
125 (96) [§]	138 (144)	163 (168)	100	75	125 (96)	138 (144)	163 (168)	55	45	5
156 (125) [§]	172 (188)	233 (250)	125	100	170 (140)	187 (210)	255 (280)	90	75	6
180 (156) [§]	198 (234)	270 (312)	150	125	205 (170) [§]	220 (255)	289 (313)	110	90	6
248 (180) [§]	273 (270)	372 (360)	200	150	260 (205)	286 (308)	390 (410)	132	110	6
261 (205) [§]	287 (308)	410 (410)	200	150	261 (205)	287 (308)	410 (410)	132	110	9
300 (245) [§]	330 (348)	450 (490)	250	200	300 (245)	330 (348)	450 (490)	160	130	9
385 (300) [§]	424 (450)	600 (600)	300	250	385 (300)	424 (450)	600 (600)	200	160	10
460 (385) [§]	506 (578)	770 (770)	350	300	460 (385)	506 (578)	770 (770)	250	200	10
500 (420) [§]	550 (530)	750 (840)	450	350	500 (420)	550 (530)	750 (840)	250	250	10
591 (520) [§]	649 (780)	956 (956)	500	450	590 (520)	649 (780)	956 (956)	315	250	11
650 (590) [§]	715 (885)	1062 (1062)	500	500	650 (590)	715 (885)	1062 (1062)	355	315	11
730 (650) [§]	803 (975)	1095 (1170)	600	500	730 (650)	803 (975)	1095 (1170)	400	355	11
820 (730) [§]	902 (1095)	1230 (1314)	700	600	820 (730)	902 (1095)	1230 (1314)	450	400	12
920 (820) [§]	1012 (1230)	1380 (1476)	800	700	920 (820)	1012 (1230)	1380 (1476)	500	450	12
1030 (920) [§]	1133 (1370)	1555 (1600)	900	800	1030 (920)	1133 (1370)	1555 (1600)	560	500	12

[§] These drives have dual current ratings; one for normal duty applications, and one for heavy duty (in parenthesis). The drive may be operated at either rating.

[†] 380-400V, 205 A rating is limited to 45°C surrounding air.

[‡] 380-400V, 205 A rating is limited to 40°C surrounding air.

[§] Rating is limited to 35°C surrounding air.

[¶] Release pending at date of printing. Verify before ordering.

DIMENSIONS MM (IN)

Dimensions			
Frame Size	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
11	2275 (86.6) ³	797 (31.38) ³	600 (23.62) ³
12	2275 (86.6) ³	1196.05 (47.09) ³	600 (23.62) ³

Notes:

① When using the supplied junction box (100 HP drives only), add an additional 45.1 mm (1.78 in.) to this dimension.

② When using the supplied junction box, add an additional 126.3 mm (4.97 in.) to this dimension.

③ Free standing Rittal enclosure.

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600...690V ac, Three-Phase Drives

600V ac Input				690V ac Input				Frame Size		
Output Amps		Normal Duty Hp	Heavy Duty Hp	Output Amps		Normal Duty kW	Heavy Duty kW			
Cont.	1 Min.	3 Sec.	Cont.	1 Min.	3 Sec.	Cont.	1 Min.			
1.7	2.0	2.6	1	0.5	—	—	—	1		
2.7	3.6	4.8	2	1	—	—	—	1		
3.9	4.3	5.9	3	2	—	—	—	1		
6.1	6.7	9.2	5	3	—	—	—	1		
9	9.9	13.5	7.5	5	—	—	—	1		
11	13.5	18	10	7.5	—	—	—	1		
17	18.7	25.5	15	10	—	—	—	1		
22	25.5	34	20	15	—	—	—	2		
27	33	44	25	20	—	—	—	2		
32	40.5	54	30	25	—	—	—	3		
41	48	64	40	30	—	—	—	3		
52	61.5	82	50	40	—	—	—	3		
77 (63) [§]	85 (94)	116 (126)	75	60	82 (60)	90 (90)	120 (123)	75	55	5
99 (77) [§]	109 (116)	126 (138)	100	75	98 (82) [§]	108 (123)	127 (140)	90	75	5
125 (99) [§]	138 (149)	188 (198)	125	100	119 (98)	131 (147)	179 (196)	110	90	6
144 (125) [§]	158 (188)	216 (250)	150	125	142 (119)	156 (179)	213 (238)	132	110	6
170 (144) [§]	187 (216)	245 (245)	150	150	170 (144)	187 (216)	245 (245)	160	132	9
208 (170) [§]	230 (250)	289 (289)	200	150	208 (170)	230 (250)	289 (289)	200	160	9
261 (208) [§]	287 (317)	375 (375)	250	200	261 (208)	287 (317)	375 (375)	250	200	10
325 (261) [§]	358 (392)	470 (470)	350	250	325 (261)	358 (392)	470 (470)	315	250	10
385 (325) [§]	424 (488)	585 (585)	400	350	385 (325)	424 (488)	585 (585)	355	315	10
460 (385) [§]	458 (488)	585 (585)	450	350	416 (325)	458 (488)	585 (585)	400	315	10
502 (460) [§]	502 (590)	592 (693)	450	400	460 (385)	506 (578)	693 (693)	450	355	11
650 (590) [§]	649 (753)	804 (904)	600	500	590 (592)	649 (753)	804 (904)	560	500	11
750 (650) [§]	750 (825)	1170 (1170)	800	700	750 (650)	825 (975)	1170 (1170)	710	630	12
820 (750) [§]	820 (920)	1170 (1170)	900	700	820 (750)	902 (975)	1170 (1170)	800	630	12

[§] These drives have dual current ratings; one for normal duty applications, and one for heavy duty (in parenthesis). The drive may be operated at either rating.

[†] Rating is limited to 40°C surrounding air.</p