*Power**Flex*® 70

Optimized Simplicity

PowerFlex® 70 AC Drive

The Allen-Bradley PowerFlex 70 offers a compact package of power, control and operator interface designed to meet the demands for space, simplicity and reliability while providing a broad spectrum of features, allowing the user to easily configure the drive for most application needs.

Flexible Packaging and Mounting

IP20, NEMA Type 1 – For conventional mounting inside or outside a control cabinet. Conduit plate is vertically removable for easy installation and replacement without disturbing conduit.

IP 66, NEMA Type 4X/12 – For mounting directly in the production environment. Listed by UL to resist dust, dirt, etc. and survive high pressure water spray. Also certified by NSF to ensure conformity with international food equipment standards.

Flange Type – For mounting heatsink through back of an enclosure, thus removing a large portion of the heat inside a cabinet. The backside is rated IP66 and UL (NEMA) Type 4X/12 for both indoor and outdoor use.

The **PowerFlex 70 Packaged Drives Program** simplifies installation and start up by allowing users to order drive packages that combine operator interface, control, communications and power options in pre-packaged assemblies. Offering a number of commonly requested pre-engineered options, as well as more complex custom-engineered packages, the packaged drives program provides a wide range of motor control options.

PowerFlex 70 AC Drive
0.37 to 15 kW; 0.5 to 20 hp

Space Saving Hardware Features

Zero Stacking™ - Package styles can be mounted directly next to one another with no reduction of ambient temperature rating (50ºC).

Integral EMC Filtering provides a compact, all-in-one package solution for meeting EMC requirements, including CE in Europe.

Integral Dynamic Brake Transistor delivers a cost-effect means of switching regenerative energy without costly external chopper circuits.

Internal Dynamic Brake Resistor requires no extra panel space, and supplies a large amount of braking torque for short periods.

Allen-Bradley
RELIANCE ELECTRIC   DODGE
ROCKWELL SOFTWARE

Rockwell Automation

Easy to Use Human Interface Tools

**PowerFlex 7-Class LCD Human Interface Modules provide:**

- Large and easy to read 7 line backlit display
- Variety of languages (English, French, German, Italian, Spanish, Portuguese, Dutch)
- Alternate function keys for shortcuts to common tasks
- "Calculator-like" number pad for fast and easy data entry (Full Numeric version only)
- Control keys for local start, stop, speed, and direction
- Remote versions for panel mount applications
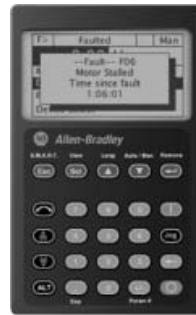
Family of PC based configuration tools including:

DriveExplorer™ and DriveExplorer Lite: a simple and flexible "On-line" tool for monitoring and configuration while connected to a drive.

DriveExecutive™: A flexible, yet very friendly "On-line" and "Off-line" tool for monitoring and configuration while connected or disconnected to a drive.
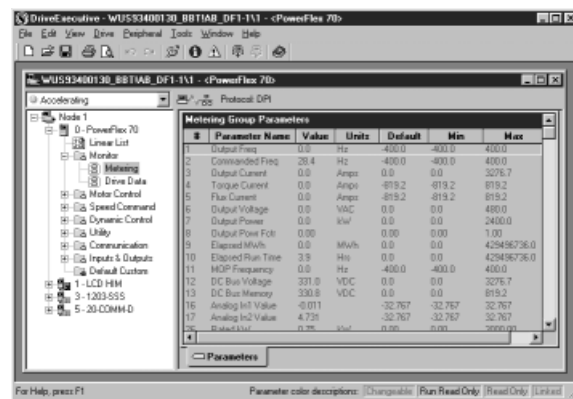
Control and Performance Features

Sensorless Vector Control develops high torque over a wide speed range, and adapts to individual motor characteristics.

Fast acting **Circuit Limit** and **Bus Voltage Regulation** result in maximum acceleration and deceleration without tripping.

Flying Start delivers smooth connection into rotating loads, regardless of commanded direction, without the need for any speed feedback device.

PI Control can eliminate the need for a separate process loop controller.

Inertia Ride-Through offers tripless operation during a prolonged power outage by using the rotating energy stored in a high inertia, low friction loads.
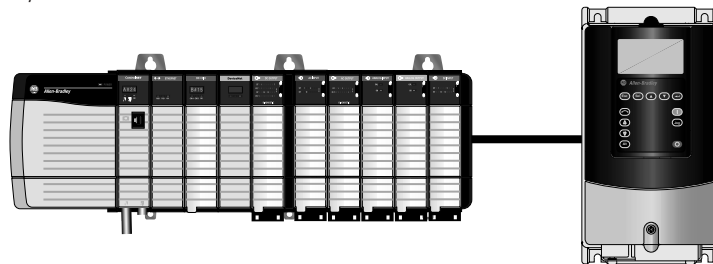
User Sets, allowing up to three complete sets of parameter data, can be individually loaded for different batch processes.

Slip compensation delivers minimum of 0.5% open loop speed regulation across a wide speed range, eliminating the need for speed feedback devices in some applications.
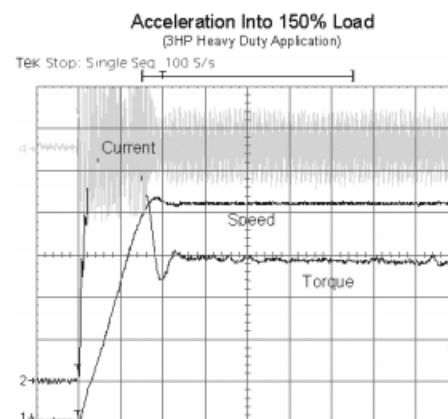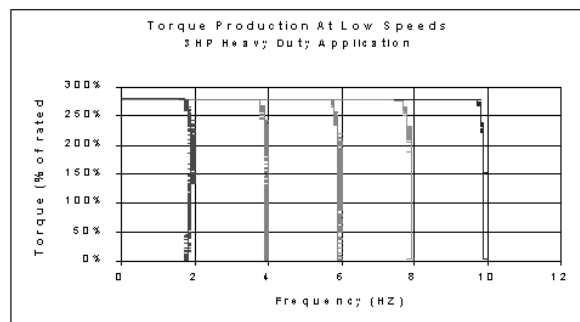
Unsurpassed Capability in Network Communications

PowerFlex 70 drives are fully compatible with Allen-Bradley
drive's wide variety of DPI communication adapters,
offering the following benefits:

DeviceNet	ControlNet	EtherNet/IP	Remote I/O	RS-485 DF1	Profibus	Interbus-S	
✔	✔	✔					**(Unconnected Messaging)** permits other network devices (e.g. PanelView) to communicate directly to a drive without routing the communication through the network scanner.
✔	✔	✔		✔			**Adapter Routing** -- Plug PC into one drive and talk to other Allen-Bradley drives on same network, without being routed through the network scanner.
✔	✔	✔	✔	✔	✔	✔	**Access to 100% of all parameters** over the network.
✔		✔			✔		**AutoBaud** capability makes initial connections less problematic.
✔							**Change Of State** significantly reduces network traffic by configuring control messages to be sent only upon customer defined states. Very flexible configuration for each node (Example: "reference must change by more than 5%").
✔		✔					**Peer Control** provides master slave type control between drives, where one or more slave drives (consumers) can run based on the status of a master drive (producer), which can also significantly reduce network traffic.
✔							**ADR (Automatic Device Replacement)** saves significant time and effort when replacing a drive, by allowing the scanner to be configured to automatically detect a new drive and download the required parameter settings.
✔	✔	✔	✔	✔	✔	✔	**Flexible Fault Con guration** – Adapters can be programmed to take fault based actions such as ramp to stop, cost to stop, and hold last state, as well as send user configurable logic control and speed reference values. In addition, different actions can be taken based on whether the network experienced a serious problem (broken cable etc.) versus a network idle condition (PLC set to "Program").

Specifications

Control I/O	• 6 programmable digital inputs
	  – 24V DC sink/source (115V AC adapter available)
	• 2 programmable form C relays
		• 2 analog inputs
		  – 1 unipolar 0-10V or 4-20mA
		  – 1 bipolar –10 to +10V or 4-20mA
		• 1 analog output (0-10V)

Standards	• UL and cUL (CSA) Listed • UL508C for plenums (flange type only) • C-Tick (excluding 600V) • NSF (IP66, Type 4X/12 only)	• CE Marked (excluding 600V) • EMC EN61800-3 – Low Voltage EN60204-1/EN50178
Input Specifications	3-Phase Voltage: Frequency: Logic Control Ride Through:	200-240V / 380-487V / 500-600V ±10% 47-63 Hz ≥ 0.5 seconds
Output Specifications	Voltage: Frequency Range: Overload Current:	Adjustable from 0V to rated motor voltage 0-400 Hz To 100% for 60 seconds, 150% for 3 Seconds
Enclosure and Ambient Operating Temperatures	Panel Mount – IP20, NEMA Type 1 Wall/Machine Mount – IP66, NEMA Type 4X/12 Flange Mount – Front	0° - 50°C (32° - 122°F) 0° - 40°C (32° - 104°F) 0° - 50°C (32° - 122°F)

Ratings & Dimensions mm (in)

Output Power		200 Volt Ratings						240 Volt Ratings					
		Output Current			Frame Size – IP20, NEMA 1 & Flange Type		Frame	Output Current			Frame Size – IP20, NEMA 1 & Flange Type		Frame
kW ND (HD)	HP ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Without Internal Filter	With Internal Filter	IP66 NEMA 4X/12	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Without Internal Filter	With Internal Filter	IP66 NEMA 4X/12
0.37 (0.25)	0.5 (0.33)	2.5	2.7	3.7	A	B	B	2.2	2.4	3.3	A	B	B
0.75 (0.55)	1 (0.75)	4.8	5.5	7.4	A	B	B	4.2	4.8	6.4	A	B	B
1.5 (1.1)	2 (1.5)	7.8	10.3	13.8	B	B	B	6.8	9	12	B	B	B
2.2 (1.5)	3 (2)	11	12.1	16.5	B	B	B	9.6	10.6	14.4	B	B	B
4 (3)	5 (3)	17.5	19.2	26.2	--	C	D	15.3	17.4	23.2	--	C	D
5.5 (4)	7.5 (5)	25.3	27.8	37.9	--	D	D	22	24.2	33	--	D	D
7.5 (5.5)	10 (7.5)	32.2	37.9	50.6	--	D	D	28	33	44	--	D	D

Output Power		400 Volt Ratings						480 Volt Ratings					
		Output Current			Frame Size – IP20, NEMA 1 & Flange Type		Frame	Output Current			Frame Size – IP20, NEMA 1 & Flange Type		Frame
kW ND (HD)	HP ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Without Internal Filter	With Internal Filter	IP66 NEMA 4X/12	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Without Internal Filter	With Internal Filter	IP66 NEMA 4X/12
0.37 (0.25)	0.5 (0.33)	1.3	1.4	1.9	A	B	B	1.1	1.2	1.6	A	B	B
0.75 (0.55)	1 (0.75)	2.1	2.4	3.2	A	B	B	2.1	2.4	3.2	A	B	B
1.5 (1.1)	2 (1.5)	3.5	4.5	6	A	B	B	3.4	4.5	6	A	B	B
2.2 (1.5)	3 (2)	5	5.5	7.5	B	B	B	5	5.5	7.5	B	B	B
4 (3)	5 (3)	8.7	9.9	13.2	B	B	D	8	8.8	12	B	B	B
5.5 (4)	7.5 (5)	11.5	13	17.4	--	C	D	11	12.1	16.5	--	C	D
7.5 (5.5)	10 (7.5)	15.4	17.2	23.1	--	C	D	14	16.5	22	--	C	D
11 (7.5)	15 (10)	22	24.2	33	--	D	D	22	24.2	33	--	D	D
15 (11)	20 (15)	30	33	45	--	D	D	27	33	44	--	D	D

Output Power		500 – 600 Volt Ratings					
		Output Current			Frame Size – IP20, NEMA 1 & Flange Type		Frame
kW ND (HD)	HP ND (HD)	Cont. ND (HD)	1 min. ND (HD)	3 sec. ND (HD)	Without Internal Filter	With Internal Filter	IP66 NEMA 4X/12
0.37 (0.25)	0.5 (0.33)	0.9	1	1.4	A	--	B
0.75 (0.55)	1 (0.75)	1.7	1.9	2.6	A	--	B
1.5 (1.1)	2 (1.5)	2.7	3.6	4.8	A	--	B
2.2 (1.5)	3 (2)	3.9	4.3	5.8	B	--	B
4 (3)	5 (3)	6.1	6.7	9.1	B	--	D
5.5 (4)	7.5 (5)	9	9.9	13.5	C	--	D
7.5 (5.5)	10 (7.5)	11	13.5	18	C	--	D
11 (7.5)	15 (10)	17	18.7	25.5	D	--	D
15 (11)	20 (15)	22	25.5	34	D	--	D

Frame	A	B	C	D	E	Weight [1] kg (lbs.)
IP20 / NEMA Type 1						
A	122.4 (4.82)	225.7 (8.89)	179.8 (7.08)	94.2 (3.71)	211.6 (8.33)	2.71 (6.0)
B	171.7 (6.76)	234.6 (9.24)	179.8 (7.08)	122.7 (4.83)	220.2 (8.67)	3.60 (7.9)
C	185.0 (7.28)	300.0 (11.81)	179.8 (7.08)	137.6 (5.42)	285.6 (11.25)	6.89 (15.2)
D	219.9 (8.66)	350.0 (13.78)	179.8 (7.08)	169.0 (6.65)	335.6 (13.21)	9.00 (19.8)
IP66 / NEMA Type 4X/12						
B	171.7 (6.76)	239.8 (9.44)	203.3 (8.00)	122.7 (4.83)	220.2 (8.67)	3.61 (8.0)
D	219.9 (8.66)	350.0 (13.78)	210.7 (8.29)	169.0 (6.65)	335.6 (13.21)	9.13 (20.1)
Flange Mount						
A	156.0 (6.14)	225.8 (8.89)	178.6 (7.03)	–	–	2.71 (6.0)
B	205.2 (8.08)	234.6 (9.24)	178.6 (7.03)	–	–	3.60 (7.9)
C	219.0 (8.62)	300.0 (11.81)	178.6 (7.03)	–	–	6.89 (15.2)
D	248.4 (9.78)	350.0 (13.78)	178.6 (7.03)	–	–	9.00 (19.8)

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