Technical Data

Allen-Bradley

PowerFlex 750-Series AC Drives

Original Instructions



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Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Title	Publication
PowerFlex 750-Series Drive Installation Instructions	750-IN001
PowerFlex 750-Series Programming Manual	750-PM001
Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual	20HIM-UM001
PowerFlex 750-Series Safe Torque Off User Manual	750-UM002
Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Reference Manual	750-RM001
PowerFlex 7-Class Network Communication Adapter User Manuals	750COM-UM
Dynamic Braking Resistor Calculator	PFLEX-AT001
Wiring and Grounding Guidelines for PWM AC Drives	DRIVES-IN001
Preventive Maintenance of Industrial Control and Drive System Equipment	DRIVES-TD001
Safety Guidelines for the Application, Installation and Maintenance of Solid State Control	SGI-1.1

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Product Overview

The PowerFlex 750-Series is a robust family of AC drives that provide ease of use, flexibility, and performance for a variety of industrial applications. The PowerFlex 753 provides general purpose control for applications ranging up to 350 Hp and 250 kW. The PowerFlex 755 provides maximum flexibility and performance ranging up to 2000 Hp and 1500 kW.



Maximize your productivity by taking advantage of the following key features offered in the PowerFlex 750-Series:

- **DeviceLogix**™ – Embedded control technology that supports the manipulation of discrete outputs and drive control functions, while using discrete inputs and drive status information onboard the drive.
- **Predictive Diagnostics** – Allows the drive to keep track of information that affects the life of its cooling fans and relay outputs. The drive can also be programmed to monitor the run time hours for machine or motor bearings.
- **Option Cards** – Each drive has a slot-based architecture. Supported hardware control options are common for both products, to help reduce your inventory and spare parts requirements.
- **Safe Torque-Off** and **Safe Speed Monitor** – provides a choice for safety levels depending on your application requirements.
- **Communications** – The PowerFlex 755 comes with a built-in Ethernet port. Ethernet can easily be added to the PowerFlex 753 with a communication module.

- **I/O** – option cards are available for additional analog and discrete I/O. The PowerFlex 753 comes with built-in I/O that can also be easily expanded with option cards.
- **Packaging** – Factory and field installable enclosure options are available to meet most environmental requirements: Open Type and Flange Mount options to support Cabinet Mount requirements, Extra Protection Wall Mount for harsh environments, and supporting debris hoods and conduit plate kits.
- **Standard Power Structure** – a common power structure is shared to provide the same physical footprint and power range.

PowerFlex 750-Series Drive Family



Frame 1…7
IP00/IP20, NEMA/UL Type Open Drive

includes:
- DC link choke
- Internal brake transistor standard on Frames 1…5 and optional on Frames 6…7



Frames 8…10
IP20, NEMA/UL Type 1 Drive
(2500 MCC Style Cabinet)

includes:
- DC link choke
- Integrated AC line fuses
- Roll-out design



Frames 8…10
IP20, NEMA/UL Type 1 Drive with Options
(2500 MCC Style Cabinet)

includes:
- DC link choke
- Integrated AC line fuses
- Roll-out design
- Option bay for control/protection devices



Roll-out Cart
- Required for Frame 8 and larger drives
- Adjustable Curb Height: 0…182 mm (0…7.2 in.)
- Adjustment for Curb Offset/Reach: 0…114 mm (0…4.5 in.)

Catalog Number Explanation

1…3	4	5	6	7	8…10	11	12	13	14	15	16	17	18	
20G	1	A	N	D	248	A	A	0	N	N	N	N	N	- LD - P3 - P11…
a	*b*	*c*	*d*	*e*	*f1…f4*	*g*	*h*	*i*						*Cabinet Options (21G)*

a

Drive		
Code	Type	Frames
20F	PowerFlex 753	1…7
20G	PowerFlex 755	1…10
21G	PowerFlex 755 Drive with Options	8…10

b

Future Use

c

Input Type		
Code	Description	Frames
1	AC Input with Precharge, includes DC Terminals	1…4, 8…10
	AC Input without Precharge, includes DC Terminals	5
4	DC Input with Precharge	5…10
A	AC Input with Precharge, no DC Terminals	6…8 ★

★ The DC Bus Bar kit (20-750-DCBB1-Fx) is available for Frames 6…7 AC input drives requiring DC bus terminals.

d

Enclosure		
Code	Description	Frames
R	IP20, NEMA/UL Type Open, Frame 1	1
F §	Flange (NEMA/UL Type 4X/12 back)	2…5
G	IP54, NEMA/UL Type 12	2…7
N ‡	IP20/IP00, NEMA/UL Type Open	2…7
B △	IP20, NEMA/UL Type 1, 600 mm (23.6 in.) Deep, Standard Cabinet Color (RAL 7032)	8…10
J △	IP54, UL Type 12, 800 mm (31.5 in.) Deep, Standard Cabinet Color (RAL 7032)	8…10
K △	IP54, NEMA 12, 2500 MCC Style Cabinet & Options w/MCC Power Bus, 800 mm (31.5 in.) Deep, Standard Cabinet Color (RAL 7032)	8…10
L △	IP20, NEMA/UL Type 1, 800 mm (31.5 in.) Deep, Standard Cabinet Color (RAL 7032)	8…10
P △	IP20, NEMA/UL Type 1, 2500 MCC Style Cabinet & Options w/MCC Power Bus, 800 mm (31.5 in.) Deep, Standard Cabinet Color (RAL 7032)	8…10
W △	IP20, NEMA/UL Type 1, 2500 MCC Style Cabinet & Options w/MCC Power Bus, 800 mm (31.5 in.) Deep, CenterLine 2100 Gray (ASA49)	8…10
Y △	IP54, NEMA 12, 2500 MCC Style Cabinet & Options w/MCC Power Bus, 800 mm (31.5 in.) Deep, CenterLine 2100 Gray (ASA49)	8…10
T	IP00, UL Open Type without Control POD	8…10

§ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.

‡ Frames 2…5 are IP20, Frames 6…7 are IP00.

△ Available as a drive with options (21G).

e

Voltage Rating	
Code	Voltage
C	400V AC/540V DC
D	480V AC/650V DC
E	600V AC/810V DC
F	690V AC/932V DC (not UL listed)

f1

ND Rating									
400V, 50 Hz Input									
Code	Amps	kW	Frame						
			Enclosure Code						
			B, J, L, T	F	G	N	K, P, W, Y	R	
2P1	2.1	0.75	–	2	2	2	–	1	
3P5	3.5	1.5							
5P0	5.0	2.2							
8P7	8.7	4							
011	11.5	5.5							
015	15.4	7.5							
022	22	11		3	3	3		–	
030	30	15							
037	37	18.5							
043	43	22							
060	60	30		4	4	4			
072	72	37			5				
085	85	45		5		5			
104	104	55			6				
140	140	75		§		6			
170	170	90							
205	205	110							
260	260	132			7				
302	302	160				7			
367	367	200							
456	456	250							
460	460	250	8	–	–	–	8 △		
540	540	315							
567	567	315							
650	650	355							
750	750	400							
770	770	400							
910	910	500	9				9 △		
1K0	1040	560							
1K1	1090	630							
1K2	1175	710							
1K4	1465	800							
1K5	1480	850							
1K6	1590	900	10				10 △		
2K1	2150	1250							

§ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.

△ Available as a drive with options (21G).

f2

ND Rating									
480V, 60 Hz Input									
Code	Amps	Hp	Frame						
			Enclosure Code						
			B, J, L, T	F	G	N	K, P, W, Y	R	
2P1	2.1	1	–	2	2	2	–	1	
3P4	3.4	2							
5P0	5.0	3							
8P0	8.0	5							
011	11	7.5							
014	14	10							
022	22	15		3	3	3		–	
027	27	20							
034	34	25							
040	40	30							
052	52	40		4	4	4			
065	65	50			5				
077	77	60		5		5			
096	96	75			6				
125	125	100		§		6			
156	156	125							
186	186	150							
248	248	200			7				
302	302	250				7			
361	361	300							
415	415	350							
430	430	350	8	–	–	–	8 △		
485	485	400							
545	545	450							
617	617	500							
710	710	600							
740	740	650							
800	800	700	9				9 △		
960	960	800							
1K0	1045	900							
1K2	1135	1000							
1K3	1365	1100							
1K4	1420	1250							
1K5	1525	1350	10				10 △		
2K0	2070	1750							

§ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.

△ Available as a drive with options (21G).

f3

ND Rating								
600V, 60 Hz Input								
Code	Amps	Hp	Frame					
			Enclosure Code					
			B, J, L, T	F	G	N	K, P, W, Y	R
1P7	1.7	1						
2P7	2.7	2						
3P9	3.9	3		3	3	3		
6P1	6.1	5						
9P0	9	7.5						
011	11	10						
012	12	10		–	6	6		
017	17	15		3	3	3		
018	18	15		–	6	6		
022	22	20		3	3	3		
023	23	20		–	6	6		
024	24	20						
027	27	25		4	4	4		
028	28	25		–	6	6		
032	32	30	–	4	4	4	–	
033	33	30		–	6	6		
041	41	40		5	5	5		
042	42	40		–	6	6		
052	52	50		5	–	5		
053	53	50						
063	63	60						
077	77	75			6	6		–
099	99	100						
125	125	125						
144	144	150						
192	192	200			7	7		
242	242	250						
289	289	300						
295	295	300	8	–	–	–	8 Δ	
355	355	350						
395	395	400						
435	435	450						
460	460	500						
510	510	500						
595	595	600	9				9 Δ	
630	630	700						
760	760	800						
825	825	900						
900	900	950						
980	980	1000						
1K1	1110	1100	10				10 Δ	
1K4	1430	1400						

Δ Available as a drive with options (21G).

f4

ND Rating								
690V, 50 Hz Input (not UL listed)								
Code	Amps	kW	Frame					
			Enclosure Code					
			B, J, L, T	F	G	N	K, P, W, Y	R
012	12	7.5						
015	15	11						
020	20	15						
023	23	18.5						
030	30	22						
034	34	30						
046	46	37			6	6		
050	50	45						
061	61	55	–				–	
082	82	75						
098	98	90						
119	119	110						
142	142	132						
171	171	160			7	7		
212	212	200		–				–
263	263	250						
265	265	250	8		–	–	8 Δ	
330	330	315						
370	370	355						
415	415	400						
460	460	450						
500	500	500						
590	590	560	9				9 Δ	
650	650	630						
710	710	710						
765	765	750						
795	795	800						
960	960	900						
1K0	1040	1000	10				10 Δ	
1K4	1400	1400						

Δ Available as a drive with options (21G).

g

Filtering and CM Cap Configuration ♦		
Code	Filtering	Default CM Cap Connection
A	Yes	Jumper Removed
J	Yes	Jumper Installed

♦ 480V drives must select code "A." Jumpers are included for field reconfiguration as desired.

h

Dynamic Braking &		
Code	Internal Resistor ♠	Internal Transistor ▽
A	No	Yes
N	No	No

♠ Frames 1…2 only.

▽ Standard on Frames 1…5, optional on 6…7.

& Not available on Frames 8…10, specify Code "N."

i

Door Mounted HIM (Frames 8…10)	
Code	Operator Interface
0	No Door Mounted HIM
2	Enhanced LCD, Full Numeric, IP20
4	Enhanced LCD, Full Numeric, IP66 NEMA Type 4X/12

PowerFlex 755 w/Options (21G) - Required Selections

Code	Option	Frames	Type
LD	Light Duty	8…10	System Overload Duty Cycle ★
ND	Normal Duty		
HD	Heavy Duty		
P3	Input Thermal Magnetic Circuit Breaker	8…10	Power Disconnect ★
P5	Input Non-Fused Molded Case Disconnect Switch	8 Only	
P14	Wiring Only Bay	8…10	Wiring Only Bay

★ Only one option of this type may be selected.

PowerFlex 755 w/Options (21G) - Additional Selections

Code	Option	Frames	Type
P11	Input Contactor	8 Only	Contactors ★ §
P12	Output Contactor		
L1	3% Input Reactor	8…9	Reactors ★
L2	3% Output Reactor		
L3	5% Input Reactor	8 Only	
L4	5% Output Reactor		
P20	1200 Amp Bus	8…10	MCC Power Bus Capacity ★
P22	2000 Amp Bus		
P24	3000 Amp Bus		
P30	UPS Control Bus, DC Input w/Precharge only	8…10	UPS Control Bus
X1	Auxiliary Transformer (500VA available), IP20 Cabinet Only	8 Only	Auxiliary Power

★ Only one option of this type may be selected.

§ Contactor options are not available for systems with MCC power bus.