Technical Data

Original Instructions

PowerFlex 755TS Products with TotalFORCE Control

Catalog Number 20G

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Introduction

PowerFlex® 755TS products with TotalFORCE® technology offer precise motor control and the ability to adapt to the dynamics experienced in industrial applications. TotalFORCE technology delivers exceptional motor control through precise, adaptive control of position, velocity, and torque for electric motors. It incorporates several patented features that are designed to help optimize your system and maintain productivity.

Maximize your productivity by taking advantage of the following key features that are offered in the PowerFlex 755TS products with TotalFORCE technology:

- **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 Maintenance** – Helps improve productivity by estimating the remaining life span of drive components so preventive action can be taken before component wear-out causes unplanned downtime.
- **Option Cards** – Each drive has a slot-based architecture. Supported hardware control options are available for both products, to help reduce your inventory and spare parts requirements.
- **I/O** – Option cards are available for additional analog and digital I/O.
- **Patented slot-based hardware structure** – Allows you to select option modules for safety, feedback, communications, and I/O.
- **Safe Torque Off and Safe Speed Monitor** – Provide a choice for safety levels depending on your application requirements.
- **Load Observer** – Maintain productivity with control that adapts to operating conditions.
- **Ride-Through** – Helps keep equipment running through power quality disturbances.
- **TorqProve™** – Patented control coordinates motor torque and brake operation in hoist applications.
- **Communications** – The PowerFlex 755TS products feature built-in Gigabit EtherNet/IP™ ports.
- **Packaging** – Factory and field-installable enclosure options are available to meet most environmental requirements. Options include Open Type and flange mount to support cabinet mount requirements, extra protection wall-mount for harsh environments, and debris hoods and conduit plate kits.

Catalog Number Explanation

Catalog number positions 1...7 identify the product type and voltage rating.

1...3	4	5	6	7	8...10	11	12	13	14	15	16	17	18
20G	2	A	N	D	248	J	N	0	N	N	N	N	N
A	B	C	D	E									

A

Drive		
Code	**Type**	**Frames**
20G	PowerFlex 755TS Drives	1...7

B

Corrosive Gas Protection and Cooling Type		
Code	**Description**	**Frames**
2	Standard Protection, Forced Air	1...7
E	Corrosive Gas Protection (XT), Forced Air	1...7

C

Input Type		
Code	**Description**	**Frames**
1	AC Input with Precharge, includes DC terminals	1...5
4	DC Input with Precharge	5...7
A	AC Input with Precharge, no DC terminals	6 and 7 (1)

(1) The DC Bus Bar kit (20-750-DCBB3-Fx) is available for Frames 6 and 7 AC input drives that require DC bus terminals.

D

Enclosure		
Code	**Description**	**Frames**
R	IP20, NEMA/UL Open Type, Frame 1	1
F (1)	Flange, NEMA/UL Type 4X/12 back	2...5
G	IP54, NEMA/UL Type 12	2...5
N (2)	IP20/IP00, NEMA/UL Open Type	2...7

(1) For Frames 6...7, a user installed flange kit (20-750-FLNG4-Fx) is available to convert a Code N drive that provides a NEMA/UL Type 4X/12 back.

(2) Frames 2...5 are IP20, Frames 6...7 are IP00.

E

Voltage Rating	
Code	**Voltage**
C	400V AC/540V DC
D	480V AC/650V DC

Catalog number positions 8...10 identify the product normal duty rating.

1...3	4	5	6	7	8...10	11	12	13	14	15	16	17	18
20G	2	A	N	D	248	J	N	0	N	N	N	N	N
					F1...F2								

F1

PowerFlex 755TS ND Drive Ratings

400V, 50 Hz Input

Code	Amps	kW	Frame			
			Enclosure Code			
			F	G	N	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				–
030	30	15	3	3	3	
037	37	18.5				
043	43	22				
060	60	30	4	4	4	
061	61	30	–	–	3	
072	72	37	4	5	4	
073	73	37	–	4	–	
085	85	45	5	5	5	
086	86	45	4	–	4	
104	104	55	5	6	5	
140	140	75	6(1)		6	
170	170	90				
205	205	110				
260	260	132		7		
302	302	160	7(1)		7	
367	367	200				
456	456	250				
477	477	270		–		

F2

PowerFlex 755TS ND Drive Ratings

480V, 60 Hz Input

Code	Amps	Hp	Frame			
			Enclosure Code			
			F	G	N	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				–
027	27	20	3	3	3	
034	34	25				
040	40	30				
052	52	40	4	4	4	
053	53	40	–	–	3	
065	65	50	4	5	4	
066	66	50	–	4	–	
077	77	60	5	5	5	
078	78	60	4	–	4	
096	96	75	5	6	5	
125	125	100	6(1)		6	
156	156	125				
186	186	150				
248	248	200		7		
302	302	250	7(1)		7	
361	361	300				
415	415	350				
477	477	400		–		

(1) For Frames 6 and 7, a field-installed flange kit (20-750-TFLNG1-Fx) is available to convert a Code N drive to provide a NEMA/UL Type 4X/12 back.

Catalog number positions 11...13 identify additional product configuration.

1...3	4	5	6	7	8...10	11	12	13	14	15	16	17	18
20G	2	A	N	D	248	J	N	0	N	N	N	N	N
						G	H	I					

G

Filtering and CM Cap Configuration			
Code	**Filtering**	**Default CM Cap Connection**	**Frames**
J	Yes	Jumper Installed	1...7

H

Dynamic Braking			
Code	**Internal Resistor (1)**	**Internal Transistor (2)**	**Frames**
A	No	Yes	1...7
N	No	No	6 and 7

(1) Frames 1...2 only. Internal Resistor kits (20-750-DB1-Dx) sold separately.
(2) Standard on Frames 1...5, optional on 6 and 7.

I

Human Interface Module (HIM)		
Code	**Operator Interface**	**Frames**
0	No HIM	1...7

Catalog number positions 14...18 are not used.

1...3	4	5	6	7	8...10	11	12	13	14	15	16	17	18
20G	2	A	N	D	248	J	N	0	N	N	N	N	N

Product Selection—380...400V PowerFlex 755TS Drives

380...400V AC, Three-phase Drives—IP00/IP20, NEMA/UL Type Open [1] [2]

Normal Duty				Heavy Duty				Cat. No.[3] [4] [5]	Frame Size
Output Amps			kW	Output Amps			kW		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	2.3	3.2	0.75	1.3	2.3	3.2	0.37	20G2ARC2P1JA2NNNNN	1
3.5	3.9	5.3	1.5	2.1	3.9	5.3	0.75	20G2ARC3P5JA2NNNNN	
5	5.5	7.5	2.2	3.5	5.5	7.5	1.5	20G2ARC5P0JA2NNNNN	
8.7	9.6	13.1	4	5	9.6	13.1	2.2	20G2ARC8P7JA2NNNNN	
11.5	12.7	17.3	5.5	8.7	13.1	17.3	4	20G2ARC011JA2NNNNN	
15.4	16.9	23.1	7.5	11.5	17.3	23.1	5.5	20G2ARC015JA2NNNNN	
2.1	3.1	3.7	0.75	2.1	3.1	3.7	0.75	20G2ANC2P1JA2NNNNN	2
3.5	5.2	6.3	1.5	3.5	5.2	6.3	1.5	20G2ANC3P5JA2NNNNN	
5	7.5	9	2.2	5	7.5	9	2.2	20G2ANC5P0JA2NNNNN	
8.7	13	15.6	4	8.7	13	15.6	4	20G2ANC8P7JA2NNNNN	
11.5	17.2	20.7	5.5	11.5	17.2	20.7	5.5	20G2ANC011JA2NNNNN	
15.4	16.9	23.1	7.5	11.5	17.3	23.1	5.5	20G2ANC015JA2NNNNN	
22	24.2	33	11	15.4	24.3	33	7.5	20G2ANC022JA2NNNNN	
30	33	45	15	22	33	45	11	20G2ANC030JA2NNNNN	3
37	40.7	55.5	18.5	30	45	55.5	15	20G2ANC037JA2NNNNN	
43	47.3	64.5	22	37	55.5	66.6	18.5	20G2ANC043JA2NNNNN	
61	67.1	91.5	30	43	66	90	22	20G2ANC061JA2NNNNN	
60	66	90	30	43	66	90	22	20G2ANC060JA2NNNNN	4
72	79.2	108	37	60	90	108	30	20G2ANC072JA2NNNNN	
86	94.6	129	45	72	108	129.6	37	20G2ANC086JA2NNNNN	
85	93.5	127.5	45	72	108	129.6	37	20G2ANC085JA2NNNNN	5
104	114.4	156	55	85	127.5	156	45	20G2ANC104JA2NNNNN	
140	154	210	75	104	156	210	55	20G2ANC140JA2NNNNN [6]	6
170	187	255	90	140	210	255	75	20G2ANC170JA2NNNNN [6]	
205	225	307.5	110	170	255	307.5	90	20G2ANC205JA2NNNNN [6]	
260	286	390	132	205	307.5	390	110	20G2ANC260JA2NNNNN [6]	
302	332.2	453	160	260	390	468	132	20G2ANC302JA2NNNNN [6]	7
367	403.5	550.5	200	302	453	550.5	160	20G2ANC367JA2NNNNN [6]	
456	501.6	684	250	367	550.5	684	200	20G2ANC456JA2NNNNN [6]	
477	524.7	715.5	270	367	550.5	684	200	20G2ANC477JA2NNNNN [6]	

(1) Frames 1...7 can be converted to IP20, NEMA/UL Type 1 with an optional conversion kit (20-750-TNEMA1-F*x*), where *x* is the frame size of the drive.
(2) Frames 2...7 IP20/IP00, NEMA/UL Type Open drives can be converted to a flange mount drive (back/heatsink: IP66, NEMA/UL Type 4X) with an optional user-installed flange-mount adapter kit (20-750-TFLNG1-F*x*), where *x* is the frame size of the drive.
(3) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).
(4) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.
(5) The 11th character indicates the default Filtering and Common Mode Cap jumper configuration, All products ship with jumpers installed, code "J".
(6) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

380...400V AC, Three-phase Drives—IP54, NEMA/UL Type 12

Normal Duty				Heavy Duty				Cat. No. (1) (2) (3)	Frame Size
Output Amps			kW	Output Amps			kW		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	3.1	3.7	0.75	2.1	3.1	3.7	0.75	20G2AGC2P1JA2NNNNN	2
3.5	5.2	6.3	1.5	3.5	5.2	6.3	1.5	20G2AGC3P5JA2NNNNN	
5	7.5	9	2.2	5	7.5	9	2.2	20G2AGC5P0JA2NNNNN	
8.7	13	15.6	4	8.7	13	15.6	4	20G2AGC8P7JA2NNNNN	
11.5	17.2	20.7	5.5	11.5	17.2	20.7	5.5	20G2AGC011JA2NNNNN	
15.4	16.9	23.1	7.5	11.5	17.3	23.1	5.5	20G2AGC015JA2NNNNN	
22	24.2	33	11	15.4	24.3	33	7.5	20G2AGC022JA2NNNNN	
30	33	45	15	22	33	45	11	20G2AGC030JA2NNNNN	3
37	40.7	55.5	18.5	30	45	55.5	15	20G2AGC037JA2NNNNN	
43	47.3	64.5	22	37	55.5	66.6	18.5	20G2AGC043JA2NNNNN	
60	66	90	30	43	66	90	22	20G2AGC060JA2NNNNN	4
73	80.3	109.5	37	60	90	108	30	20G2AGC073JA2NNNNN	
72	79.2	108	37	60	90	108	30	20G2AGC072JA2NNNNN	5
85	93.5	127.5	45	72	108	129.6	37	20G2AGC085JA2NNNNN	
104	114.4	156	55	85	127.5	156	45	20G2AGC104JA2NNNNN (4)	6
140	154	210	75	104	156	210	55	20G2AGC140JA2NNNNN (4)	
170	187	255	90	140	210	255	75	20G2AGC170JA2NNNNN (4)	
205	225	307.5	110	170	255	307.5	90	20G2AGC205JA2NNNNN (4)	
260	286	390	132	205	307.5	390	110	20G2AGC260JA2NNNNN (4)	7
302	332.2	453	160	260	390	468	132	20G2AGC302JA2NNNNN (4)	
367	403.5	550.5	200	302	453	550.5	160	20G2AGC367JA2NNNNN (4)	
456	501.6	684	250	367	550.5	684	200	20G2AGC456JA2NNNNN (4)	

(1) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).
(2) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.
(3) The 11th character indicates the default Filtering and Common Mode Cap jumper configuration, All products ship with jumpers installed, code "J".
(4) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

380...400V AC, Three-phase Drives—Flange Mount (Front: IP20, NEMA/UL Type Open; Back/Heatsink: IP66, NEMA/UL Type 4X)

Normal Duty				Heavy Duty				Cat. No. (1) (2) (3)	Frame Size
Output Amps			kW	Output Amps			kW		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	3.1	3.7	0.75	2.1	3.1	3.7	0.75	20G2AFC2P1JA2NNNNN	2
3.5	5.2	6.3	1.5	3.5	5.2	6.3	1.5	20G2AFC3P5JA2NNNNN	
5	7.5	9	2.2	5	7.5	9	2.2	20G2AFC5P0JA2NNNNN	
8.7	13	15.6	4	8.7	13	15.6	4	20G2AFC8P7JA2NNNNN	
11.5	17.2	20.7	5.5	11.5	17.2	20.7	5.5	20G2AFC011JA2NNNNN	
15.4	16.9	23.1	7.5	11.5	17.3	23.1	5.5	20G2AFC015JA2NNNNN	
22	24.2	33	11	15.4	24.3	33	7.5	20G2AFC022JA2NNNNN	
30	33	45	15	22	33	45	11	20G2AFC030JA2NNNNN	3
37	40.7	55.5	18.5	30	45	55.5	15	20G2AFC037JA2NNNNN	
43	47.3	64.5	22	37	55.5	66.6	18.5	20G2AFC043JA2NNNNN	
60	66	90	30	43	66	90	22	20G2AFC060JA2NNNNN	4
72	79.2	108	37	60	90	108	30	20G2AFC072JA2NNNNN	
86	94.6	129	45	72	108	129.6	37	20G2AFC086JA2NNNNN	
85	93.5	127.5	45	72	108	129.6	37	20G2AFC085JA2NNNNN	5
104	114.4	156	55	85	127.5	156	45	20G2AFC104JA2NNNNN	
140	154	210	75	104	156	210	55	20G2AFC140JA2NNNNN (4)	6
170	187	255	90	140	210	255	75	20G2AFC170JA2NNNNN (4)	
205	225	307.5	110	170	255	307.5	90	20G2AFC205JA2NNNNN (4)	
260	286	390	132	205	307.5	390	110	20G2AFC260JA2NNNNN (4)	
302	332.2	453	160	260	390	468	132	20G2AFC302JA2NNNNN (4)	7
367	403.5	550.5	200	302	453	550.5	160	20G2AFC367JA2NNNNN (4)	
456	501.6	684	250	367	550.5	684	200	20G2AFC456JA2NNNNN (4)	
477	524.7	715.5	270	367	550.5	684	200	20G2AFC477JA2NNNNN (4)	

(1) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).
(2) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.
(3) The 11th character indicates the default Filtering and Common Mode Cap jumper configuration, All products ship with jumpers installed, code "J".
(4) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

Product Selection—480V PowerFlex 755TS Drives

480V AC, Three-phase Drives—IP00/IP20, NEMA/UL Type Open [1] [2]

Normal Duty				Heavy Duty				Cat. No. [3] [4] [5]	Frame Size
Output Amps			Hp	Output Amps			Hp		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	2.3	3.2	1	1.1	2.3	3.2	0.5	20G2ARD2P1JA2NNNNN	1
3.4	3.7	5.1	2	2.1	3.7	5.1	1	20G2ARD3P4JA2NNNNN	
5	5.5	7.5	3	3.4	5.5	7.5	2	20G2ARD5P0JA2NNNNN	
8	8.8	12	5	5	8.8	12	3	20G2ARD8P0JA2NNNNN	
11	12.1	16.5	7.5	8	12.1	16.5	5	20G2ARD011JA2NNNNN	
14	15.4	21	10	11	16.5	21	7.5	20G2ARD014JA2NNNNN	
2.1	3.1	3.7	1	1	3.1	3.7	1	20G2AND2P1JA2NNNNN	2
3.4	5.1	6.1	2	3.4	5.1	6.1	2	20G2AND3P4JA2NNNNN	
5	7.5	9	3	5	7.5	9	3	20G2AND5P0JA2NNNNN	
8	12	14.4	5	8	12	14.4	5	20G2AND8P0JA2NNNNN	
11	16.5	19.8	7.5	11	16.5	19.8	7.5	20G2AND011JA2NNNNN	
14	15.4	21	10	11	16.5	21	7.5	20G2AND014JA2NNNNN	
22	24.2	33	15	14	21	33	10	20G2AND022JA2NNNNN	
27	29.7	40.5	20	22	33	40.5	15	20G2AND027JA2NNNNN	3
34	37.4	51	25	27	40.5	51	20	20G2AND034JA2NNNNN	
40	44	60	30	34	51	61.2	25	20G2AND040JA2NNNNN	
53	58.3	79.5	40	40	60	78	30	20G2AND053JA2NNNNN	
52	57.2	78	40	40	60	78	30	20G2AND052JA2NNNNN	4
65	71.5	97.5	50	52	78	97.5	40	20G2AND065JA2NNNNN	
78	85.8	117	60	65	97.5	117	50	20G2AND078JA2NNNNN	
77	84.7	115.5	60	65	97.5	117	50	20G2AND077JA2NNNNN	5
96	105.6	144	75	77	115.5	144	60	20G2AND096JA2NNNNN	
125	137.5	187.5	100	96	144	187.5	75	20G2AND125JA2NNNNN [6]	6
156	171.6	234	125	125	187.5	234	100	20G2AND156JA2NNNNN [6]	
186	204.6	279	150	156	234	280.8	125	20G2AND186JA2NNNNN [6]	
248	272.8	372	200	186	279	372	150	20G2AND248JA2NNNNN [6]	
302	332.2	453	250	248	372	453	200	20G2AND302JA2NNNNN [6]	7
361	397.1	541.5	300	302	453	543.6	250	20G2AND361JA2NNNNN [6]	
415	456.5	622.5	350	361	541.5	649.8	300	20G2AND415JA2NNNNN [6]	
477	524.7	715.5	400	361	541.5	649.8	300	20G2AND477JA2NNNNN [6]	

(1) Frames 1...5 are IP20, NEMA/UL Type Open. Frames 6...7 are IP00, NEMA/UL Type Open. Frames 1...7 can be converted to IP20, NEMA/UL Type 1 with optional kit (20-750-NEMA1-Fx), where *x* is the frame size of the drive.

(2) Frames 2...7 IP20/IP00, NEMA/UL Type Open drives can be converted to a flange mount drive (back/heatsink: IP66, NEMA/UL Type 4X) with an optional user-installed flange-mount adapter kit (20-750-TFLNG1-Fx), where *x* is the frame size of the drive.

(3) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).

(4) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.

(5) The 11th character indicates the default Filtering and Common Mode Cap jumper configuration, All products ship with jumpers installed, code "J".

(6) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

480V AC, Three-phase Drives—IP54, NEMA/UL Type 12

Normal Duty				Heavy Duty				Cat. No. (1) (2) (3)	Frame Size
Output Amps			Hp	Output Amps			Hp		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	3.1	3.7	1	2.1	3.1	3.7	1	20G2AGD2P1JA2NNNNN	2
3.4	5.1	6.1	2	3.4	5.1	6.1	1	20G2AGD3P4JA2NNNNN	
5	5.5	7.5	3	3.4	5.1	6.1	2	20G2AGD5P0JA2NNNNN	
8	12	14.4	5	8	12	14.4	5	20G2AGD8P0JA2NNNNN	
11	16.5	19.8	7.5	11	16.5	19.8	7.5	20G2AGD011JA2NNNNN	
14	15.4	21	10	11	16.5	21	7.5	20G2AGD014JA2NNNNN	
22	24.2	33	15	14	21	33	10	20G2AGD022JA2NNNNN	
27	29.7	40.5	20	22	33	40.5	15	20G2AGD027JA2NNNNN	3
34	37.4	51	25	27	40.5	51	20	20G2AGD034JA2NNNNN	
40	44	60	30	34	51	61.2	25	20G2AGD040JA2NNNNN	
52	57.2	78	40	40	60	78	30	20G2AGD052JA2NNNNN	4
66	72.5	99	50	52	78	97.5	40	20G2AGD066JA2NNNNN	
65	71.5	97.5	50	52	78	97.5	40	20G2AGD065JA2NNNNN	5
77	84.7	115.5	60	65	97.5	117	50	20G2AGD077JA2NNNNN	
96	105.6	144	75	77	115.5	144	60	20G2AGD096JA2NNNNN (4)	6
125	137.5	187.5	100	96	144	187.5	75	20G2AGD125JA2NNNNN (4)	
156	171.6	234	125	125	187.5	234	100	20G2AGD156JA2NNNNN (4)	
186	204.6	279	150	156	234	280.8	125	20G2AGD186JA2NNNNN (4)	
248	272.8	372	200	186	279	372	150	20G2AGD248JA2NNNNN (4)	7
302	332.2	453	250	248	372	453	200	20G2AGD302JA2NNNNN (4)	
361	397.1	541.5	300	302	453	543.6	250	20G2AGD361JA2NNNNN (4)	
415	456.5	622.5	350	361	541.5	649.8	300	20G2AGD415JA2NNNNN (4)	

(1) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).
(2) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.
(3) The 11th character indicates the default Filtering and Common Mode Cap jumper configuration, All products ship with jumpers installed, code "J".
(4) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

480V AC, Three-phase Drives—Flange Mount (Front: IP20, NEMA/UL Type Open; Back/Heatsink: IP66, NEMA/UL Type 4X)

Normal Duty				Heavy Duty				Cat. No. (1) (2) (3)	Frame Size
Output Amps			Hp	Output Amps			Hp		
Cont.	1 min	3 s		Cont.	1 min	3 s			
2.1	3.1	3.7	1	2.1	3.1	3.7	1	20G2AFD2P1JA2NNNNN	2
3.4	5.1	6.1	2	3.4	5.1	6.1	2	20G2AFD3P4JA2NNNNN	
5	7.5	9	3	5	7.5	9	3	20G2AFD5P0JA2NNNNN	
8	12	14.4	5	8	12	14.4	5	20G2AFD8P0JA2NNNNN	
11	16.5	19.8	7.5	11	16.5	19.8	7.5	20G2AFD011JA2NNNNN	
14	15.4	21	10	11	16.5	21	7.5	20G2AFD014JA2NNNNN	
22	24.2	33	15	14	21	33	10	20G2AFD022JA2NNNNN	
27	29.7	40.5	20	22	33	40.5	15	20G2AFD027JA2NNNNN	3
34	37.4	51	25	27	40.5	51	20	20G2AFD034JA2NNNNN	
40	44	60	30	34	51	61.2	25	20G2AFD040JA2NNNNN	
52	57.2	78	40	40	60	78	30	20G2AFD052JA2NNNNN	4
65	71.5	97.5	50	52	78	97.5	40	20G2AFD065JA2NNNNN	
78	85.8	117	60	65	97.5	117	50	20G2AFD078JA2NNNNN	
77	84.7	115.5	60	65	97.5	117	50	20G2AFD077JA2NNNNN	5
96	105.6	144	75	77	115.5	144	60	20G2AFD096JA2NNNNN	
125	137.5	187.5	100	96	144	187.5	75	20G2AFD125JA2NNNNN (4)	6
156	171.6	234	125	125	187.5	234	100	20G2AFD156JA2NNNNN (4)	
186	204.6	279	150	156	234	280.8	125	20G2AFD186JA2NNNNN (4)	
248	272.8	372	200	186	279	372	150	20G2AFD248JA2NNNNN (4)	
302	332.2	453	250	248	372	453	200	20G2AFD302JA2NNNNN (4)	7
361	397.1	541.5	300	302	453	543.6	250	20G2AFD361JA2NNNNN (4)	
415	456.5	622.5	350	361	541.5	649.8	300	20G2AFD415JA2NNNNN (4)	
477	524.7	715.5	400	361	541.5	649.8	300	20G2AFD477JA2NNNNN (4)	

(1) The 4th character determines corrosive gas protection; "2" = standard protection, and "E" = corrosive gas protection (XT).
(2) The 5th character determines Input Type; "1" = AC input with precharge and DC terminals for frames 1...5, "4" = DC input with precharge for frames 5...7, and "A" = AC input with precharge and no DC terminals for frames 6 and 7. For DC input drives, see DRIVES-SG001, the PowerFlex Common Bus Configuration Selection Guide.
(3) The 11th character determines default Filtering and Common Mode Cap jumper configuration; "J" = Installed, and "A" = Removed.
(4) The 12th character determines whether an internal dynamic braking IGBT is included; "A" = Internal dynamic braking transistor installed, and "N" = No internal dynamic braking transistor.

Certifications and Specifications

This section provides information for certifications and specifications.

Certifications

Certification	Description
Product certifications	Rockwell Automation maintains current product certification information on its website at: http://www.rockwellautomation.com/global/certification/overview
CE	In conformity with these European Directives EMC Directive (2014/30/EU) EN 61800-3 Low Voltage Directive (2014/35/EU) EN 61800-5-1 ATEX Directive (2014/34/EU) EC-Type-Examination Certificate Number TÜV 12 ATEX 7990 X EN 50495
c-UL-us	Listed to UL61800-5-1 and CSA C22.2 No. 274 up to 600V AC
EAC	Low Voltage TP TC 004/2011 EMC TP TC 020/2011
Ecodesign	Ecodesign Directive (2009/125/EC) as implemented by EU 2019/1781.
EMC	In conformity with EMC Directive (2014/30/EU).
Functional Safety	TÜV Rheinland — Certification applies to 20-750-S, 20-750-S1, 20-750-S3, and 20-750-S4 Safety Options when installed in drive. Standards applied EN 61800-3, EN 61508 PARTS 1-7 EN 61800-5-1, EN 62061 EN 61800-5-2, EN 60204-1 EN ISO 13849-1
KCC	R-R-RAA-Drive, R-R-RAA-750-M See the certificate of registration for specific drive catalog numbers that have this certification.(1)
Morocco	Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) NM EN 61800-5-1 Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) NM EN 61800-3
RCM	Australian Communications and Media Authority In conformity with the following items Radiocommunications Act: 1992 (including Amendments up to 2018) Radiocommunications (Electromagnetic Compatibility) Standard 2017 Radiocommunications Labeling (Electromagnetic Compatibility) Notice 2017 Standards applied EN 61800-3
SEMI F47	Certified compliant with the following standards SEMI F47 IEC 61000-4-34
UKCA	2016 No. 1101 Electrical Equipment (Safety) Regulations (LV) 2016 No. 1091 Electromagnetic Compatibility Regulations (EMC) 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS)

(1) See the product certifications website, http://www.rockwellautomation.com/global/certification/overview.page, for declarations of conformity, certificates, and other certification details.

Environmental Specifications

<table>
<tr><th>Category</th><th>Specification</th></tr>
<tr><td>Altitude
Based on load

Based on voltage</td><td>See derating guidelines starting on page 20.

Based on EN61800-5-1 (Electro-thermal Safety Standard for drives)
<table>
<tr><th>System and Ground Configuration</th><th>Overvoltage Category (3)</th><th>Altitude Limit Above Sea Level [m (ft)] (4)(5)</th></tr>
<tr><td></td><td></td><td>400/480V AC</td></tr>
<tr><td>Center grounded (Y neutral) (TN or TT) (1)</td><td>II (2)</td><td>9000 (29,527.5) (6)</td></tr>
<tr><td></td><td>III (3)</td><td>4800 (15,748.0)</td></tr>
<tr><td>Ungrounded or impedance ground (2) (IT) (1)</td><td>II (2)</td><td>4800 (15,748.0)</td></tr>
<tr><td></td><td>III (3)</td><td>2000 (6,561.7)</td></tr>
<tr><td>Corner grounded (TN or TT) (2)</td><td>II (2)</td><td>4800 (15,748.0)</td></tr>
<tr><td></td><td>III (3)</td><td>2000 (6,561.7)</td></tr>
</table>
(1) IEC Standard 60364-1
(2) Frame 1 drives do not support Category III ungrounded, impedance, or corner grounded distribution.
(3) Category II (Isolation Transformer Level) - Typically two levels of isolation or protection from outdoor power lines. Category III (most common) Distribution Level Inside a Building - Typically one level of isolation or protection from outdoor power lines.
(4) Excluding failure from cosmic radiation. Cosmic radiation increases rate of semiconductor malfunction at altitudes greater than 3000 m (9842.6 ft) above sea level. Concrete walls and ceilings or concrete walls and large bottles of water overhead are examples of ways to shield against cosmic radiation.
(5) Frame 1 drives are limited to a maximum of 2000 m (6,561.7 ft) thermally. See Derating Guidelines on page 20.
(6) Drive is limited to a maximum of 4800 m (15,748.0 ft) thermally. See Derating Guidelines on page 20.</td></tr>
<tr><td>Corrosive atmosphere (Standard protection)
IEC

ISA</td><td>Conformity with IEC 60721-3-3, 3C3 and 3S2, for components manufactured by Rockwell Automation.
A suitable IP54, NEMA/UL Type 12 Cabinet is required to meet the 3S2 requirement.

Harsh environments with a copper or silver reactivity level greater than 1000 angstroms per 30 days exposure are not allowed.
No condensation is allowed. Maximum allowable humidity is 60% in the presence of corrosive gases. See ISA-71.04-2013 for details on how to measure reactivity levels on copper and silver test coupons.</td></tr>
<tr><td>Corrosive atmosphere (Corrosive gas protection)
• ASTM B845-97 Method K Accelerated Test (30-day Exposure)
• Rockwell Automation proprietary accelerated corrosion test for industries with sources of gaseous sulfur compounds, including tire and rubber</td><td>Severity Level GX per ANSI/ISA 71.03-2013, Airborne contaminants-gases. Severity level GX is defined as up to 2100 angstroms of film growth per 30 days of copper or silver reactivity.
Severity Level CX per IEC 60721-3-3: 2019, Chemically Active Substances.
For the product to meet the corrosive atmosphere rating, these conditions must be met:
• Protective covers must remain installed in unused connectors during storage and operation.
• The product or kit must be stored in the original packaging.</td></tr>
<tr><td>Surrounding Air Temperatures</td><td>
<table>
<tr><th>Enclosure Rating</th><th>Operating Range without Derating</th><th>Maximum Operating Temperature with Derating (1)</th><th>Frames</th></tr>
<tr><td colspan="4">Stand-alone/Wall-mount</td></tr>
<tr><td>IP20, NEMA/UL Open Type</td><td>-20...+50 °C (-4...+122 °F)</td><td>60 °C (140 °F)</td><td>1...5, All ratings</td></tr>
<tr><td>IP00, NEMA/UL Open Type</td><td>-20...+50 °C (-4...+122 °F)</td><td>60 °C (140 °F)</td><td>6 and 7, All ratings</td></tr>
<tr><td>IP20, NEMA/UL Type 1 (with hood)</td><td>-20...+40 °C (-4...+104 °F)</td><td>50 °C (104 °F)</td><td>1...5, All ratings</td></tr>
<tr><td>IP20, NEMA/UL Type 1 (with option kit)</td><td>-20...+40 °C (-4...+104 °F)</td><td>50 °C (104 °F)</td><td>6 and 7, All ratings</td></tr>
<tr><td>IP54, NEMA/UL Type 12</td><td>-20...+40 °C (-4...+104 °F)</td><td>50 °C (104 °F)</td><td>2...5, All ratings</td></tr>
<tr><td colspan="4">Flange mount — front</td></tr>
<tr><td>IP20, NEMA/UL Open Type</td><td>-20...+50 °C (-4...+122 °F)</td><td>60 °C (140 °F)</td><td>2...5, All ratings</td></tr>
<tr><td>IP00, NEMA/UL Open Type</td><td>-20...+50 °C (-4...+122 °F)</td><td>60 °C (140 °F)</td><td>6 and 7, All ratings</td></tr>
<tr><td colspan="4">Flange mount — back/heatsink</td></tr>
<tr><td>IP66, NEMA/UL Type 4X</td><td>-20...+40 °C (-4...+104 °F)</td><td>50 °C (104 °F)</td><td>2...5, All ratings (2)</td></tr>
</table>
(1) See Derating Guidelines on page 20.
(2) Product codes C061 and D053 are rated IP20, NEMA/UL Type 1 for the back/heatsink.</td></tr>
<tr><td>Storage temperature (all constructions)</td><td>-40...+70 °C (-40...+158 °F)</td></tr>
</table>

Environmental Specifications (Continued)

Category	Specification			
UV radiation	The HIM and IP54, NEMA/UL Type 12 drive plastics are not UV rated.			
Relative humidity • Standard protection • Corrosive gas protection	 5...95% noncondensing in environments with severity level G2 or below per ANSI/ISA 71-04-2013 5...95% noncondensing			
Shock – operating	Frames 1...6 Frame 7	15 g peak for 11 ms duration (±1.0 ms) 10 g peak for 11 ms duration (±1.0 ms)		
Shock – packaged for shipment	Frames 1 and 2 Frames 3 and 4 Frame 5 Frames 6 and 7	381 mm (15 in.) drop height 330 mm (13 in.) drop height 305 mm (12 in.) drop height Meets International Safe Transit Association (ISTA) test procedure 2B		
Vibration – operating	Frames 1 and 2 Frames 3...5 Frames 6 and 7	1.000 mm (0.040 in.) displacement, 2 g peak 1.000 mm (0.040 in.) displacement, 1.5 g peak 1.000 mm (0.040 in.) displacement, 1 g peak		
Vibration – packaged for shipment, sinusoidal loose load	Frames 1...5 Frames 6 and 7	20.0 mm (0.8 in.) peak to peak, 2...5.186 Hz; 1.1 g peak from 5.186...20 Hz Meets ISTA 2B packaging standards		
Vibration – packaged for shipment, random secured	Frames 1...5	Frequency (Hz)	PSD (g^2/Hz)	
		1	0.00005	
		4	0.01	
		16	0.01	
		40	0.001	
		80	0.001	
		200	0.00001	
	Frames 6 and 7	Meets International Safe Transit Association (ISTA) test procedure 2B.		
Required airflow	Frame	Total fan airflow	Frame	Total fan airflow
	1 and 2	84.95 m^3/h (50 CFM)	5	883.49 m^3/h (520 CFM)
	3	135.92 m^3/h (80 CFM)	6	856.30 m^3/h (504 CFM)
	4	543.68 m^3/h (320 CFM)	7	1284.45 m^3/h (756 CFM)
Sound **IMPORTANT**: Sound pressure level is measured at 2 m (6.7 ft).	Frame	Sound level	Frame	Sound level
	1 and 2	63 dB	5	77 dB
	3	64 dB	6	73 dB
	4	72 dB	7	74 dB
Surrounding environment pollution degree Pollution Degree 1 and 2 Pollution Degree 3 and 4	 All enclosures acceptable. Enclosure that meets or exceeds IP54, NEMA/UL Type 12 required. See page 72 for descriptions of each pollution degree rating.			

Technical Specifications

Category	Specification		
Protection		**Motor Voltage**	
		380/400V	**480V**
	AC input overvoltage trip	576V AC	576V AC
	AC input undervoltage trip	250V AC	300V AC
	Bus overvoltage trip	815V DC	815V DC
	Bus undervoltage shutoff Frames 1...7	200V DC	200V DC
	Nominal bus voltage (full load)	540V DC	648V DC
	Drive overcurrent trip Software overcurrent trip Instantaneous current limit Hardware overcurrent trip	200% of drive rated 100% of 3 s rating (158...210%) 143% of 3 s rating (215...287%)	
	Line transients	Up to 6000V peak per IEEE C62.41-1991	
	Control logic noise immunity	Showering arc transients up to 1500V peak	
	Power ride-through	15 ms at full load	
	Logic control ride-through	0.5 s min, 2 s typical	
	Ground fault trip	Phase-to-ground on drive output	
	Short circuit trip	Phase-to-phase on drive output	
Electrical	AC input voltage tolerance	See Input Voltage Tolerance on page 18 for full power and operating range.	
	Frequency tolerance	47...63 Hz	
	Input phases	Three-phase input provides full rating for all drives. For single-phase operation, see Single-Phase Drive Ratings on page 17 for rated current at 25 °C (77 °F) surrounding air temperature.	
	DC input voltage tolerance	±10% of nominal bus voltage (see Nominal bus voltage (full load) on page 15)	
	Displacement power factor	0.98 across entire speed range	
	DC link impedance	≤ 4%	
	Efficiency	97.5% at rated amps, nominal line volts	
	Maximum short circuit rating	100,000 A RMS symmetrical	
	Actual short circuit rating	Determined by AIC rating of installed fuse/circuit breaker.	
	Drive to motor power ratio Min Max	Recommended not less than 1:2 ratio Recommended not greater than 2:1 ratio	
	Brake IGBT rating	100% of motor-rated torque	
	Control POD current draw	5 A	
	Digital inputs Nominal Maximum High state Low state	DC 24V DC 30V DC 20...24V DC 0...5V DC	AC 120V AC 132V AC 100...132V AC 0...30V AC
	PTC inputs Standard Trip resistance Nominal resistance Reset resistance Short circuit trip resistance	PowerFlex 755TS MCB N/A (1) 3.1 kΩ 1.8 kΩ 2.2 kΩ N/A(2)	22-Series I/O option module DIN 44082 3.1 kΩ 1.8 kΩ 2.2 kΩ 80 Ω
			ATEX option module for 11-Series I/O option module IEC 6094-8 3.2 kΩ 1.6 kΩ N/A(3) 100 Ω

(1) Not designed to a standard.
(2) No short circuit fault.
(3) No hysteresis, fault is latched.

Technical Specifications (Continued)

Category	Specification	
Control	Method	Sine coded PWM with programmable carrier frequency. Ratings apply to all drives.
	Carrier frequency	Default settings Frames 1...3 4 kHz Frames 4...7 2 kHz Settings Frames 1...6 2, 4, 8, and 12 kHz Frame 7 2, 4, and 8 kHz
	Output voltage range	0 to rated motor voltage
	Output frequency range	0...325 Hz at 2 kHz carrier 0...590 Hz at 4 kHz carrier
	Frequency accuracy Digital input Analog input	 Within ±0.01% of set output frequency Within ±0.4% of maximum output frequency
	Open-Loop (0 dB crossing) Velocity Loop Bandwidth	Load Ratio Bandwidth 5:1 54
	Open-Loop (0 dB crossing) Position Loop Bandwidth	Load Ratio Bandwidth 5:1 23
	Closed-Loop (-3 dB crossing) Velocity Loop Bandwidth	Load Ratio Bandwidth 5:1 82
	Closed-Loop (-3 dB crossing) Position Loop Bandwidth	Load Ratio Bandwidth 5:1 61
	Velocity Tracking Error for 1 Hz Oscillating Command	Load Ratio Bandwidth 5:1 -51
	Position Tracking Error for 1 Hz Oscillating Command	Load Ratio Bandwidth 5:1 -42
	Velocity Disturbance Rejection for 1 Hz Oscillating Command	Load Ratio Bandwidth 5:1 -62
	Position Disturbance Rejection for 1 Hz Oscillating Command	Load Ratio Bandwidth 5:1 41
	Frequency control	Speed regulation — with slip compensation (V/Hz and Sensorless Vector modes) 0.5% of base speed across 40:1 speed range, 40:1 operating range
	Speed control	Without feedback (Flux Vector mode), 0.1% of base speed across 100:1 speed range, 120:1 operating range, 50 rad/s bandwidth
		With feedback (Flux Vector mode), 0.001% of base speed across 100:1 speed range, 1000:1 operating range, 190 rad/s bandwidth
	Torque accuracy	1.2% motor rated torque with encoder feedback and optional torque accuracy module, Cat. No. 20-750-TSTAM-CD-XT
	Selectable motor control	• Flux vector (with and without encoder feedback) for induction motors, surface permanent magnet (SPM) motors, and Interior permanent magnet (IPM) motors. • Sensorless vector for induction motors, permanent magnet motors (both IPM and SPM), and synchronous reluctance motors. • Volts per hertz for induction motors, permanent magnet motors (both IPM and SPM), and synchronous reluctance motors. • Economizer for induction motors.
	Stop modes	Multiple programmable stop modes including: Ramp, Coast, DC-Brake, Ramp-to-Hold, Fast Braking, and Current Limit Stop.
	Accel/Decel	Two independently programmable accel and decel times. Each time can be programmed from 0...3600 seconds in 0.1 second increments (0 to motor nameplate speed).
	S-curve time	Adjustable from 0...100% of ramp time (normal duty rating)
	Intermittent overload Normal duty Heavy duty	 110% overload capability for up to 1 minute out of 10 minutes 150% overload capability for up to 3 seconds out of 60 seconds 150% overload capability for up to 1 minute out of 10 minutes 180% overload capability for up to 3 seconds out of 60 seconds
	Current limit capability	Proactive current limit programmable from 20...160% of rated output current. Independently programmable proportional and integral gain.
	Electronic motor overload protection	Class 1 to class 60 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A)(2). UL File E59272.

Single-Phase Drive Ratings

400V AC Input Single-Phase Ratings at 25 °C (77 °F) Surrounding Air Temperature

Drive		Without AC Line Reactor			With AC Line Reactor			AC Line Reactor
Frame	Cat. No.	Output Power [kW]	Output Current [A]	Input Current [A]	Output Power [kW]	Output Current [A]	Input Current [A]	Cat. No.
1	20G...C2P1	0.18	0.6	1.1	0.18	0.6	1	1321-3R2-B
1, 2	20G...C2P1	0.37	1	1.8	0.37	1	1.6	1321-3R2-B
1, 2	20G...C3P5	0.75	1.7	3.1	0.75	1.7	2.8	1321-3R4-D
1, 2	20G...C5P0	1.1	2.5	4.6	1.1	2.5	4.1	1321-3R8-D
1, 2	20G...C8P7	2	4.3	7.9	2	4.3	7	1321-3R12-C
1, 2	20G...C011	2.75	5.7	10.5	2.75	5.7	9.3	1321-3R12-C
1, 2	20G...C015	4	8.7	16	4	8.7	14.1	1321-3R18-C
2	20G...C021	5.5	11.5	21	5.5	11.5	18.8	1321-3R25-C
3	20G...C030	7.5	15.4	28	7.5	15.4	25.3	1321-3R25-C
3	20G...C037	9.25	18.5	33	9.25	18.5	30.5	1321-3R35-C
3	20G...C043	11	22	40	11	22	36.0	1321-3R45-C
3	20G...C061	15	30	54	15	30	50.0	1321-3R55-C
4	20G...C060							
4	20G...C072	18.5	37	67	18.5	37	62.0	1321-3R80-C
4	20G...C086	22	43	80	22	43	72.0	1321-3R80-C
5	20G...C085							
5	20G...C104	30	60	111	30	60	101.5	1321-3R100-C
6	20G...C140	37	72	133	37	72	121.8	1321-3R130-C
6	20G...C170	45	85	157	45	85	143.8	1321-3R160-C
6	20G...C205	55	104	192	55	104	176.6	1321-3R200-C
6	20G...C260	55	104	192	55	104	176.6	1321-3R200-C
7	20G...C302	75	140	261	75	140	236.9	1321-3R320-C
7	20G...C367	90	170	317	90	170	287.9	1321-3R320-C
7	20G...C456	110	205	383	110	205	349.7	1321-3R400-C
7	20G...C477	110	205	383	132	260	443.5	1321-3R500-C

480V AC Input Single-Phase Ratings at 25 °C (77 °F) Surrounding Air Temperature

Drive		Without AC Line Reactor			With AC Line Reactor			AC Line Reactor
Frame	Cat. No.	Output Power [Hp]	Output Current [A]	Input Current [A]	Output Power [Hp]	Output Current [A]	Input Current [A]	Cat. No.
1	20G...D2P1	0.25	0.5	1	0.25	0.5	0.8	1321-3R2-B
1, 2	20G...D2P1	0.5	1.1	2.1	0.5	1.1	1.8	1321-3R4-D
1, 2	20G...D3P4	1	1.7	3.2	1	1.7	2.8	1321-3R4-D
1, 2	20G...D5P0	1.5	2.5	4.7	1.5	2.5	4.1	1321-3R8-D
1, 2	20G...D8P0	2.5	4	7.5	2.5	4	6.5	1321-3R12-C
1, 2	20G...D011	3.75	5.5	10.3	3.75	5.5	8.9	1321-3R12-C
1, 2	20G...D014	5	8	15	5	8	13	1321-3R18-C
2	20G...D022	7.5	11	20	7.5	11	18	1321-3R25-C
3	20G...D027	10	14	25	10	14	23	1321-3R25-C
3	20G...D034	12.5	17	31	12.5	17	28	1321-3R35-C
3	20G...D040	15	22	40	15	22	36	1321-3R45-C
3	20G...D053	20	27	49	20	27	45	1321-3R55-C
4	20G...D052							
4	20G...D065	25	34	62	25	34	57	1321-3R80-C
4	20G...D078	30	40	75	30	40	67	1321-3R80-C
5	20G...D077							
5	20G...D096	40	52	97	40	52	88	1321-3R100-C
6	20G...D125	50	65	121	50	65	110	1321-3R130-C
6	20G...D156	60	78	146	60	78	132	1321-3R160-C
6	20G...D186	75	96	179	75	96	163	1321-3R200-C
6	20G...D248	75	96	179	75	96	163	1321-3R200-C
7	20G...D302	125	156	291	125	156	264	1321-3R320-C
7	20G...D361	150	186	347	150	186	315	1321-3R320-C
7	20G...D415	150	186	347	200	248	423	1321-3R500-C
7	20G...D477	150	186	347	200	248	423	1321-3R500-C

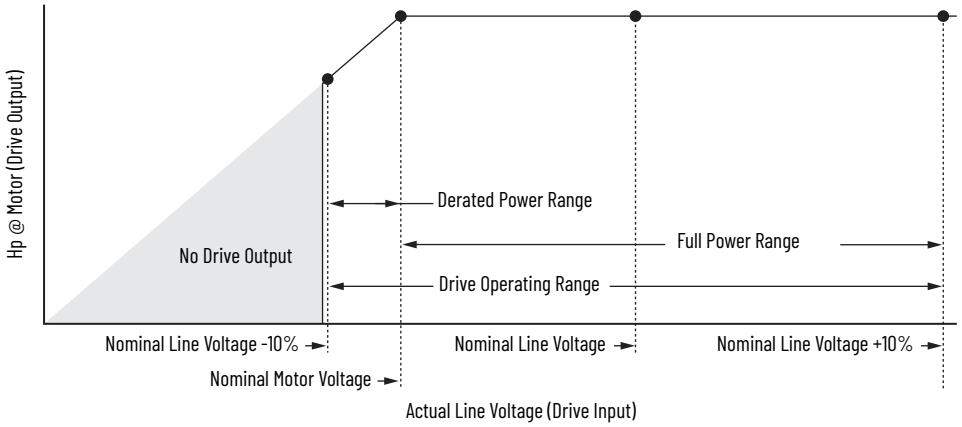
Design Considerations

This section provides information for design considerations.

Input Voltage Tolerance

Drive Rating	Nominal Line Voltage	Nominal Motor Voltage	Drive Full Power Range	Drive Operating Range
380...480	380	361	380...528	342...528
	400	380	400...528	
	480	460	460...528	

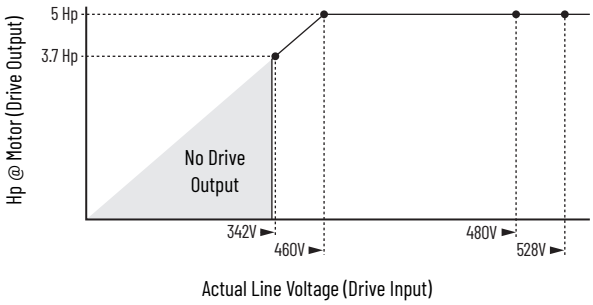
Drive Full Power Range =	Nominal Motor Voltage to Nominal Line Voltage + 10%. Rated current is available across the entire Drive Full Power Range
Drive Operating Range =	Nominal Line Voltage - 10% to Drive Rated Voltage + 10%. Drive Output is linearly derated when Actual Line Voltage is less than the Nominal Motor Voltage



EXAMPLE Calculate the maximum power of a 5.0 Hp, 460V motor connected to a 480V-rated drive supplied with 342V Actual Line Voltage input.

- Actual Line Voltage / Nominal Motor Voltage = 74.3%
- 74.3% x 5.0 Hp = 3.7 Hp
- 74.3% x 60 Hz = 44.6 Hz

At 342V Actual Line Voltage, the maximum power the 5.0 Hp, 460V motor can produce is 3.7 Hp at 44.6 Hz.



Approximate Watts Loss

The following table lists watts loss data for PowerFlex 755TS drives running at full load, full speed, and default carrier frequency.

Internal watts are the watts that the control structure of the drive dissipates into the cabinet, regardless of mounting style. External watts are the watts that are dissipated directly through the heatsink and are outside the cabinet for flange mount, and inside the cabinet for other mounting types.

Watts Loss for 400/480V Drives

Cat. No.[1]	Normal Duty		Frame	External Watts	Internal Watts	Total Watts	Cat. No.[1]	Normal Duty		Frame	External Watts	Internal Watts	Total Watts
	kW	Continuous Output Amps						Hp	Continuous Output Amps				
400 Volt							**480 Volt**						
20G...C2P1	0.75	2.1	2 (1)	16 (16)	55 (56)	71 (72)	20G...D2P1	1.0	2.1	2 (1)	17 (21)	60 (61)	77 (82)
20G...C3P5	1.5	3.5	2 (1)	26 (33)	57 (60)	83 (93)	20G...D3P4	2.0	3.4	2 (1)	27 (39)	61 (64)	88 (103)
20G...C5P0	2.2	5	2 (1)	39 (44)	58 (62)	97 (106)	20G...D5P0	3.0	5	2 (1)	41 (54)	63 (67)	104 (121
20G...C8P7	4.0	8.7	2 (1)	75 (79)	64 (80)	139 (159)	20G...D8P0	5.0	8	2 (1)	71 (91)	68 (82)	139 (173)
20G...C011	5.5	11.5	2 (1)	108 (107)	70 (80)	178 (187)	20G...D011	7.5	11	2 (1)	108 (118)	74 (88)	182 (206)
20G...C015	7.5	15.4	2 (1)	161 (166)	80 (80)	241 (246)	20G...D014	10	14	2 (1)	149 (152)	81 (81)	230 (233)
20G...C022	11	22	2	225	86	311	20G...D022	15	22	2	237	91	328
20G...C030	15	30	3	300	103	403	20G...D027	20	27	3	273	101	374
20G...C037	18.5	37	3	362	115	477	20G...D034	25	34	3	368	115	483
20G...C043	22	43	3	505	126	631	20G...D040	30	40	3	503	126	629
20G...C060	30	60	4	540	152	692	20G...D052	40	52	4	455	135	590
20G...C061	30	61	3	619	158	777	20G...D053	40	53	3	537	142	679
20G...C072	37	72	5 (4)	549 (615)	162 (151)	711 (766)	20G...D065	50	65	5 (4)	502 (559)	155 (148)	657 (707)
20G...C073	37	73	4	487	134	621	20G...D066	50	66	4	422	129	551
20G...C085	45	85	5	705	166	871	20G...D077	60	77	5	646	162	808
20G...C086	45	86	4	661	177	838	20G...D078	60	78	4	596	162	758
20G...C104	55	104	6 (5)	825 (928)	261 (205)	1086 (1133)	20G...D096	75	96	6 (5)	781 (855)	248 (193)	1029 (1048)
20G...C140	75	140	6	1239	329	1568	20G...D125	100	125	6	1109	309	1418
20G...C170	90	170	6	1381	310	1691	20G...D156	125	156	6	1299	304	1603
20G...C205	110	205	6	1893	391	2284	20G...D186	150	186	6	1718	368	2086
20G...C260	132	260	7 (6)	2061 (2449)	437 (512)	2498 (2961)	20G...D248	200	248	7 (6)	2058 (2384)	464 (501)	2522 (2885)
20G...C302	160	302	7	2566	471	3037	20G...D302	250	302	7	2704	501	3205
20G...C367	200	367	7	3322	596	3918	20G...D361	300	361	7	3409	616	4025
20G...C456	250	456	7	3472	765	4237	20G...D415	350	415	7	3232	693	3925
20G...C477	270	477	7	3647	808	4455	20G...D477	400	477	7	3823	822	4645

(1) Select the watts loss based on the catalog number.

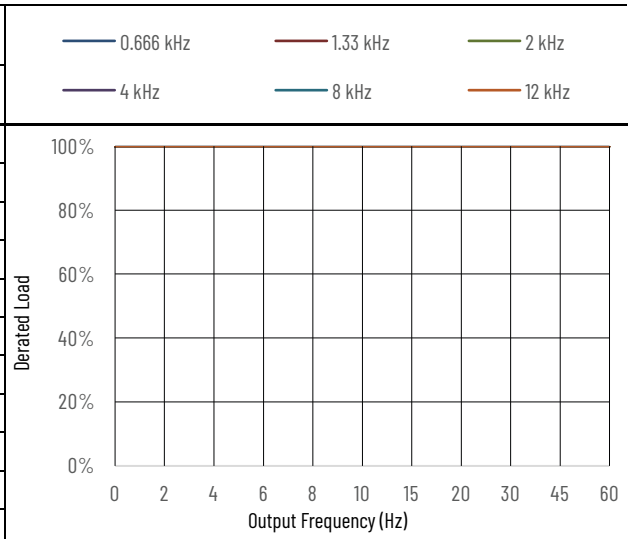
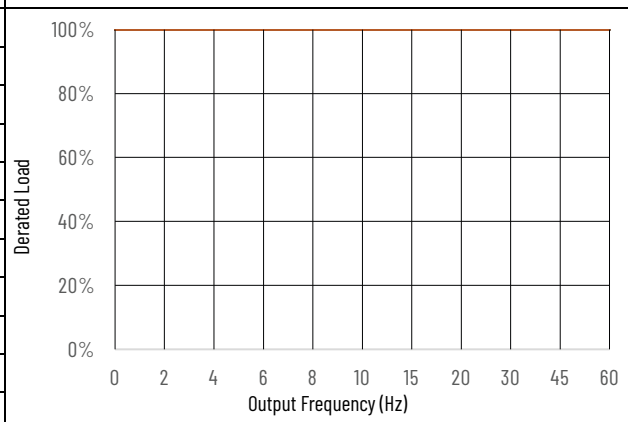
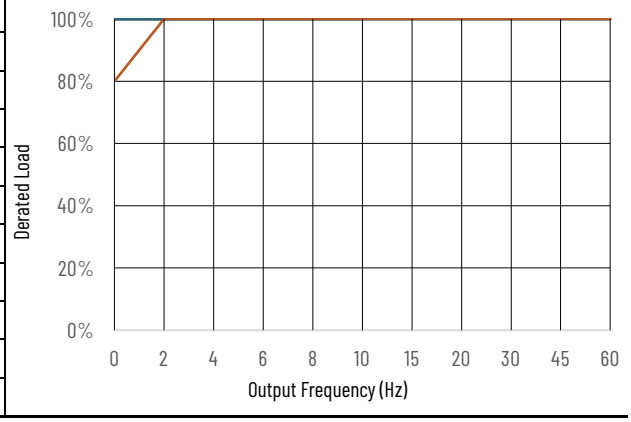
Derating Guidelines

The following sections describe conditional derating guidelines.

Low Frequency Derating—400V

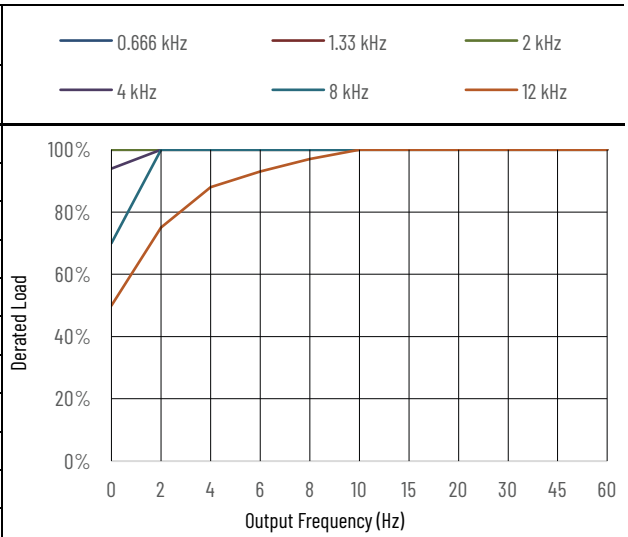
The following graphs show the low frequency deratings for 400V PowerFlex 755TS drives.

Low Frequency Derating Cuves—400V AC Frames 1...7

Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C2P1	1	0.75	2.1	0.75	2.1	0	100	100	100	100	100	100	
						2	100	100	100	100	100	100	
						4	100	100	100	100	100	100	
						6	100	100	100	100	100	100	
						8	100	100	100	100	100	100	
						10	100	100	100	100	100	100	
						15	–	–	100	100	100	100	
						20	–	–	100	100	100	100	
						30	–	–	100	100	100	100	
						45	–	–	100	100	100	100	
						60	–	–	100	100	100	100	
C3P5	1	1.5	3.5	1.5	3.5	0	100	100	100	100	100	100	
						2	100	100	100	100	100	100	
						4	100	100	100	100	100	100	
						6	100	100	100	100	100	100	
						8	100	100	100	100	100	100	
						10	100	100	100	100	100	100	
						15	–	–	100	100	100	100	
						20	–	–	100	100	100	100	
						30	–	–	100	100	100	100	
						45	–	–	100	100	100	100	
						60	–	–	100	100	100	100	
C5P0	1	2.2	5	1.5	3.5	0	100	100	100	100	100	80	
						2	100	100	100	100	100	100	
						4	100	100	100	100	100	100	
						6	100	100	100	100	100	100	
						8	100	100	100	100	100	100	
						10	100	100	100	100	100	100	
						15	–	–	100	100	100	100	
						20	–	–	100	100	100	100	
						30	–	–	100	100	100	100	
						45	–	–	100	100	100	100	
						60	–	–	100	100	100	100	

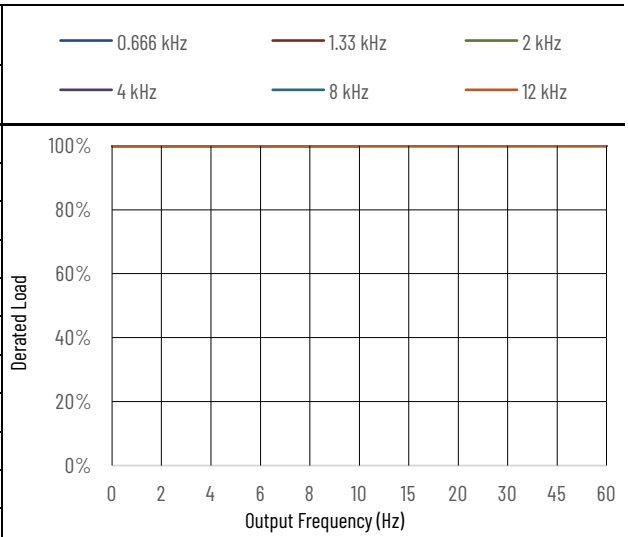
Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

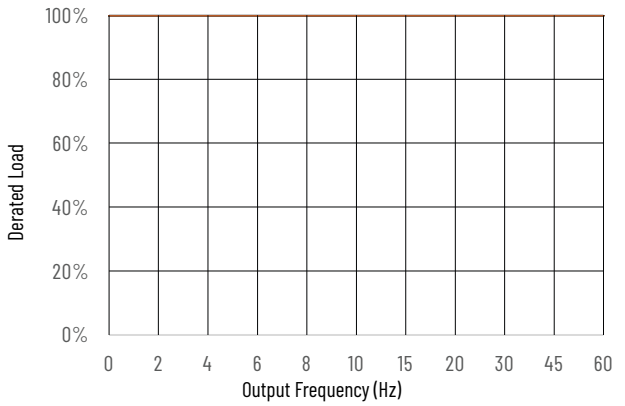
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12
C8P7	1	4	8.7	2.2	5	0	100	100	100	94	70	50
						2	100	100	100	100	100	75
						4	100	100	100	100	100	88
						6	100	100	100	100	100	93
						8	100	100	100	100	100	97
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
C011	1	5.5	11.5	4	8.7	0	100	100	100	100	100	77
						2	100	100	100	100	100	82
						4	100	100	100	100	100	88
						6	100	100	100	100	100	92
						8	100	100	100	100	100	95
						10	100	100	100	100	100	98
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
C015	1	7.5	15.4	5.5	11.5	0	100	100	100	100	80	60
						2	100	100	100	100	83	65
						4	100	100	100	100	88	69
						6	100	100	100	100	92	72
						8	100	100	100	100	95	75
						10	100	100	100	100	97	77
						15	–	–	100	100	100	80
						20	–	–	100	100	100	82
						30	–	–	100	100	100	85
						45	–	–	100	100	100	86
						60	–	–	100	100	100	87

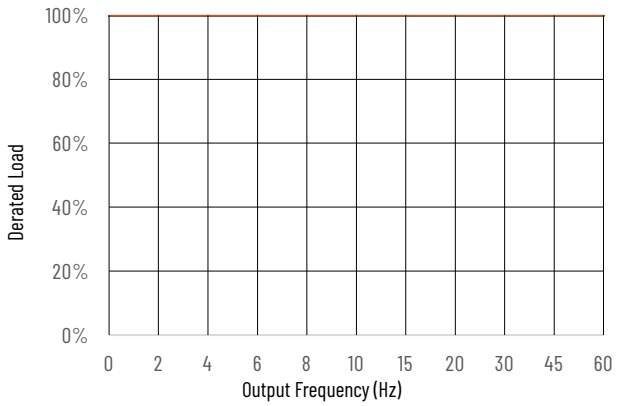


Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

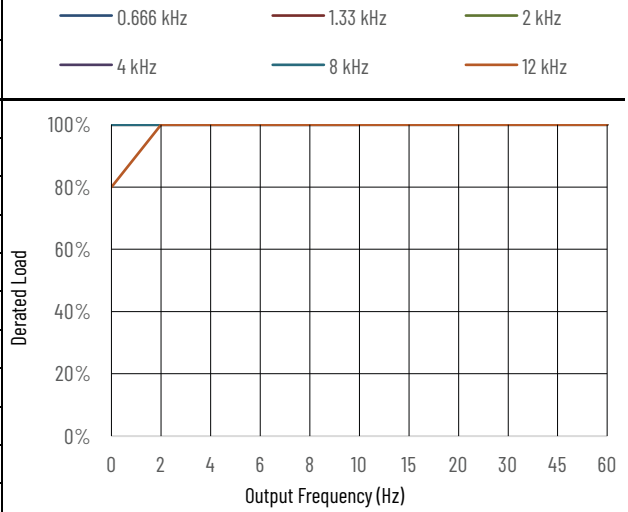
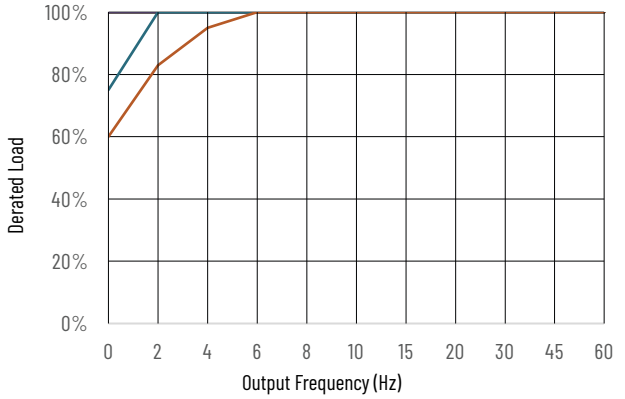
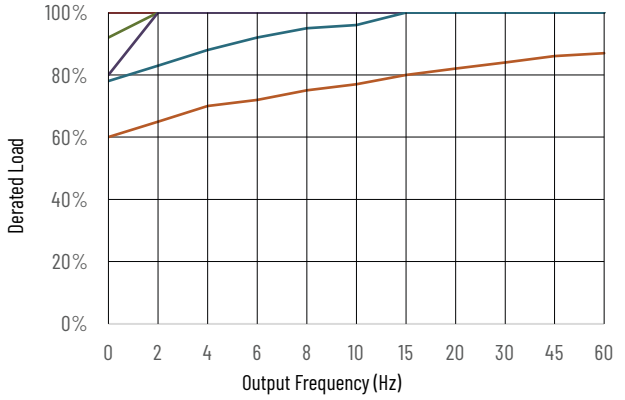
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12
C2P1	2	0.75	2.1	0.75	2.1	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
C3P5	2	1.5	3.5	1.5	3.5	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
C5P0	2	2.2	5	2.2	5	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100



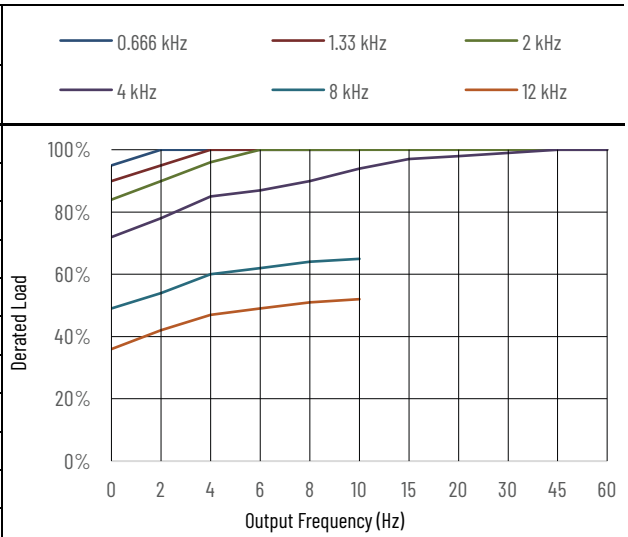
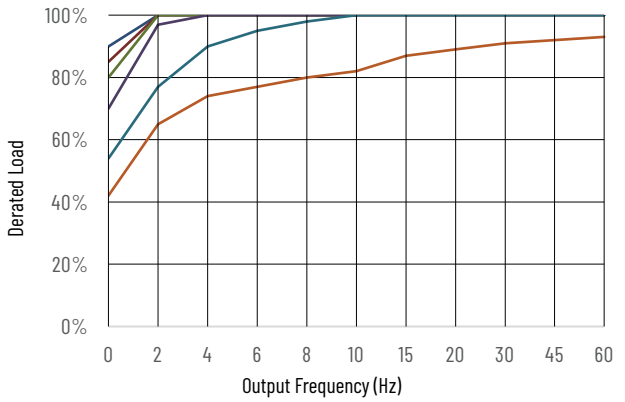
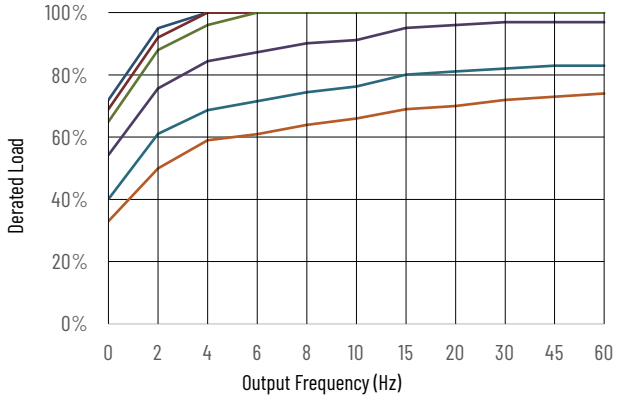




Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

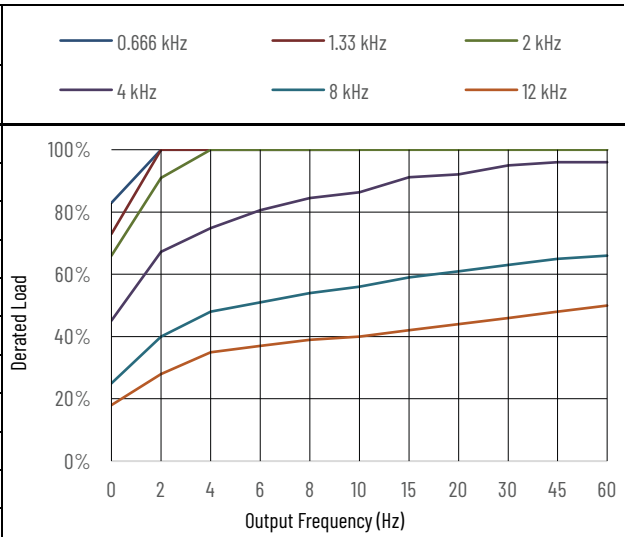
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C8P7	2	4	8.7	4	8.7	0	100	100	100	100	100	80	
						2	100	100	100	100	100	100	
						4	100	100	100	100	100	100	
						6	100	100	100	100	100	100	
						8	100	100	100	100	100	100	
						10	100	100	100	100	100	100	
						15	–	–	100	100	100	100	
						20	–	–	100	100	100	100	
						30	–	–	100	100	100	100	
						45	–	–	100	100	100	100	
						60	–	–	100	100	100	100	
C011	2	5.5	11.5	5.5	11.5	0	100	100	100	100	75	60	
						2	100	100	100	100	100	83	
						4	100	100	100	100	100	95	
						6	100	100	100	100	100	100	
						8	100	100	100	100	100	100	
						10	100	100	100	100	100	100	
						15	–	–	100	100	100	100	
						20	–	–	100	100	100	100	
						30	–	–	100	100	100	100	
						45	–	–	100	100	100	100	
						60	–	–	100	100	100	100	
C015	2	7.5	15.4	5.5	11.5	0	100	100	92	80	78	60	
						2	100	100	100	100	83	65	
						4	100	100	100	100	88	70	
						6	100	100	100	100	92	72	
						8	100	100	100	100	95	75	
						10	100	100	100	100	100	77	
						15	–	–	100	100	100	80	
						20	–	–	100	100	100	82	
						30	–	–	100	100	100	84	
						45	–	–	100	100	100	86	
						60	–	–	100	100	100	87	

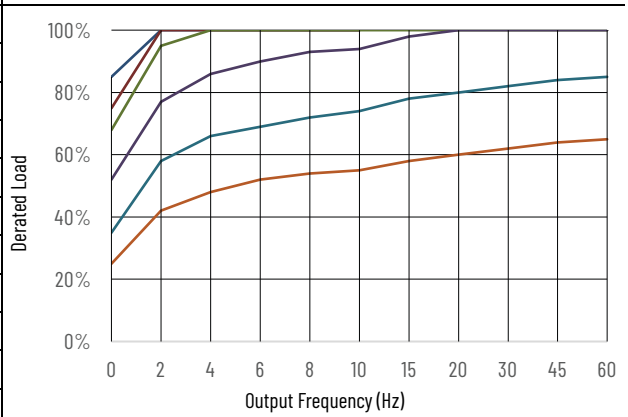
Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

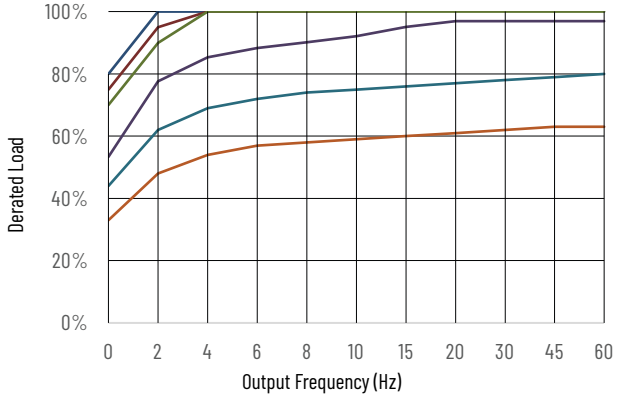
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C022	2	11	22	7.5	15.4	0	95	90	84	72	49	36	
						2	100	95	90	78	54	42	
						4	100	100	96	85	60	47	
						6	100	100	100	87	62	49	
						8	100	100	100	90	64	51	
						10	100	100	100	94	65	52	
						15	–	–	100	97	–	–	
						20	–	–	100	98	–	–	
						30	–	–	100	99	–	–	
						45	–	–	100	100	–	–	
						60	–	–	100	100	–	–	
C030	3	15	30	11	22	0	90	85	80	70	54	42	
						2	100	100	100	97	77	65	
						4	100	100	100	100	90	74	
						6	100	100	100	100	95	77	
						8	100	100	100	100	98	80	
						10	100	100	100	100	100	82	
						15	–	–	100	100	100	87	
						20	–	–	100	100	100	89	
						30	–	–	100	100	100	91	
						45	–	–	100	100	100	92	
						60	–	–	100	100	100	93	
C037	3	18.5	37	15	30	0	72	69	65	54	40	33	
						2	95	92	88	76	61	50	
						4	100	100	96	84	69	59	
						6	100	100	100	87	72	61	
						8	100	100	100	90	74	64	
						10	100	100	100	91	76	66	
						15	–	–	100	95	80	69	
						20	–	–	100	96	81	70	
						30	–	–	100	97	82	72	
						45	–	–	100	97	83	73	
						60	–	–	100	97	83	74	

Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

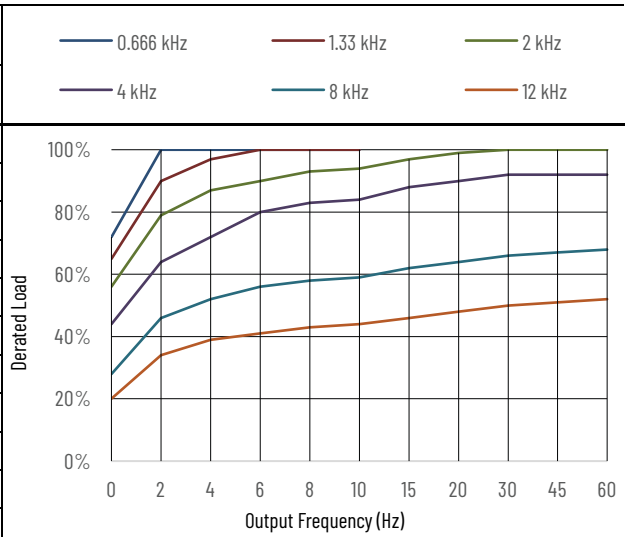
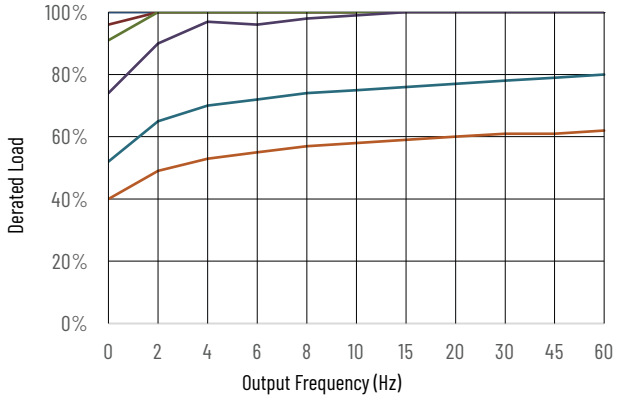
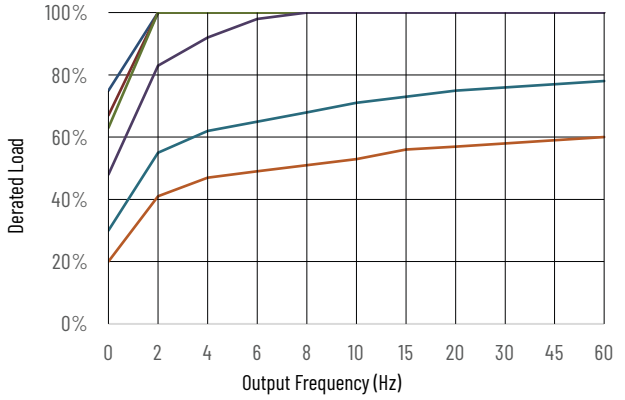
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12
C043	3	22	43	18.5	37	0	83	73	66	45	25	18
						2	100	100	91	67	40	28
						4	100	100	100	75	48	35
						6	100	100	100	81	51	37
						8	100	100	100	84	54	39
						10	100	100	100	86	56	40
						15	–	–	100	91	59	42
						20	–	–	100	92	61	44
						30	–	–	100	95	63	46
						45	–	–	100	96	65	48
						60	–	–	100	96	66	50
C060	4	30	60	22	43	0	85	75	68	52	35	25
						2	100	100	95	77	58	42
						4	100	100	100	86	66	48
						6	100	100	100	90	69	52
						8	100	100	100	93	72	54
						10	100	100	100	94	74	55
						15	–	–	100	98	78	58
						20	–	–	100	100	80	60
						30	–	–	100	100	82	62
						45	–	–	100	100	84	64
						60	–	–	100	100	85	65
C061	3	30	61	22	43	0	80	75	70	53	44	33
						2	100	95	90	78	62	48
						4	100	100	100	85	69	54
						6	100	100	100	88	72	57
						8	100	100	100	90	74	58
						10	100	100	100	92	75	59
						15	–	–	100	95	76	60
						20	–	–	100	97	77	61
						30	–	–	100	97	78	62
						45	–	–	100	97	79	63
						60	–	–	100	97	80	63





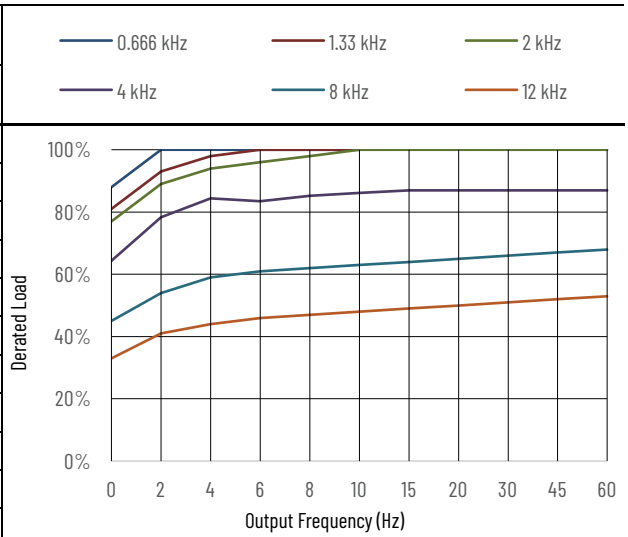


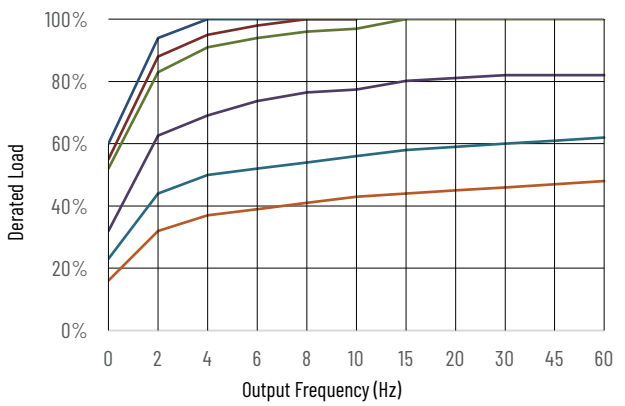
Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

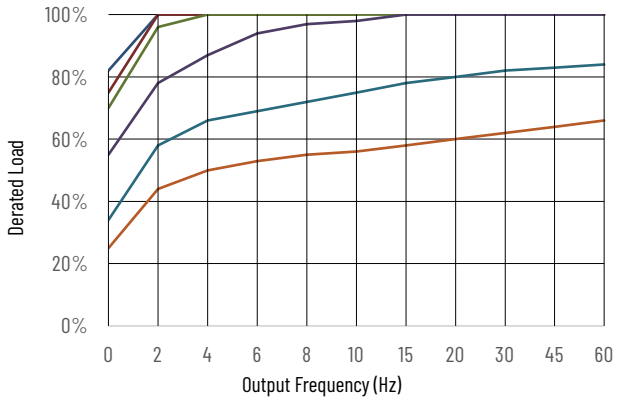
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C072	4	37	72	30	60	0	72	65	56	44	28	20	
						2	100	90	79	64	46	34	
						4	100	97	87	72	52	39	
						6	100	100	90	80	56	41	
						8	100	100	93	83	58	43	
						10	100	100	94	84	59	44	
						15	–	–	97	88	62	46	
						20	–	–	99	90	64	48	
						30	–	–	100	92	66	50	
						45	–	–	100	92	67	51	
						60	–	–	100	92	68	52	
C073	4	37	73	30	60	0	100	96	91	74	52	40	
						2	100	100	100	90	65	49	
						4	100	100	100	97	70	53	
						6	100	100	100	96	72	55	
						8	100	100	100	98	74	57	
						10	100	100	100	99	75	58	
						15	–	–	100	88	76	59	
						20	–	–	100	90	77	60	
						30	–	–	100	92	78	61	
						45	–	–	100	92	79	61	
						60	–	–	100	92	80	62	
C085	5	45	85	37	72	0	75	67	63	48	30	20	
						2	100	100	100	83	55	41	
						4	100	100	100	92	62	47	
						6	100	100	100	98	65	49	
						8	100	100	100	100	68	51	
						10	100	100	100	100	71	53	
						15	–	–	100	100	73	56	
						20	–	–	100	100	75	57	
						30	–	–	100	100	76	58	
						45	–	–	100	100	77	59	
						60	–	–	100	100	78	60	

Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

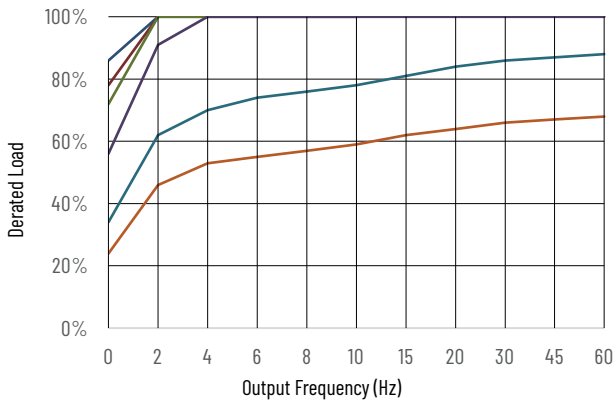
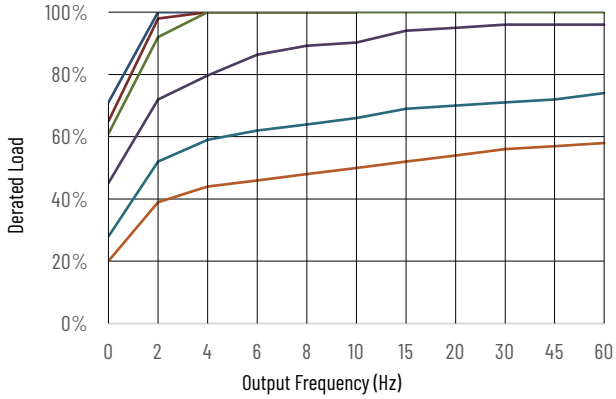
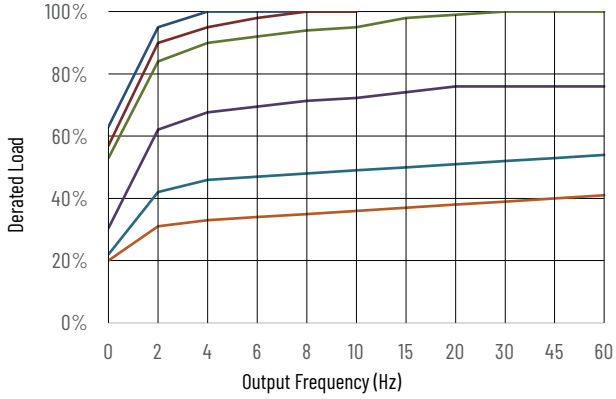
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12
C086	4	45	86	37	72	0	88	81	77	64	45	33
						2	100	93	89	78	54	41
						4	100	98	94	84	59	44
						6	100	100	96	84	61	46
						8	100	100	98	85	62	47
						10	100	100	100	86	63	48
						15	–	–	100	87	64	49
						20	–	–	100	87	65	50
						30	–	–	100	87	66	51
						45	–	–	100	87	67	52
						60	–	–	100	87	68	53
C104	5	55	104	45	85	0	60	55	52	32	23	16
						2	94	88	83	63	44	32
						4	100	95	91	69	50	37
						6	100	98	94	74	52	39
						8	100	100	96	76	54	41
						10	100	100	97	77	56	43
						15	–	–	100	80	58	44
						20	–	–	100	81	59	45
						30	–	–	100	82	60	46
						45	–	–	100	82	61	47
						60	–	–	100	82	62	48
C140	6	75	140	55	104	0	82	75	70	55	34	25
						2	100	100	96	78	58	44
						4	100	100	100	87	66	50
						6	100	100	100	94	69	53
						8	100	100	100	97	72	55
						10	100	100	100	98	75	56
						15	–	–	100	100	78	58
						20	–	–	100	100	80	60
						30	–	–	100	100	82	62
						45	–	–	100	100	83	64
						60	–	–	100	100	84	66



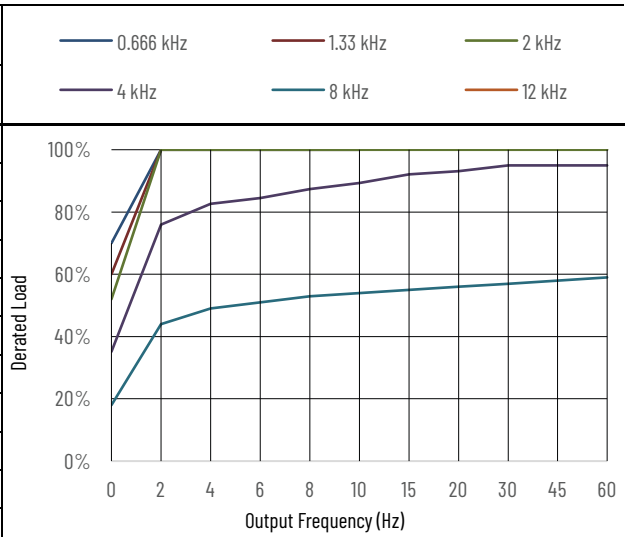
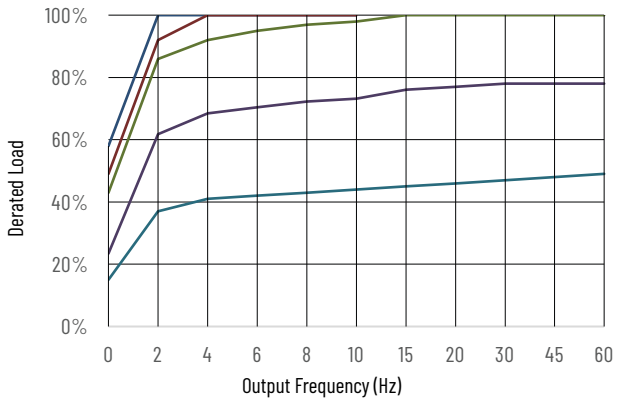
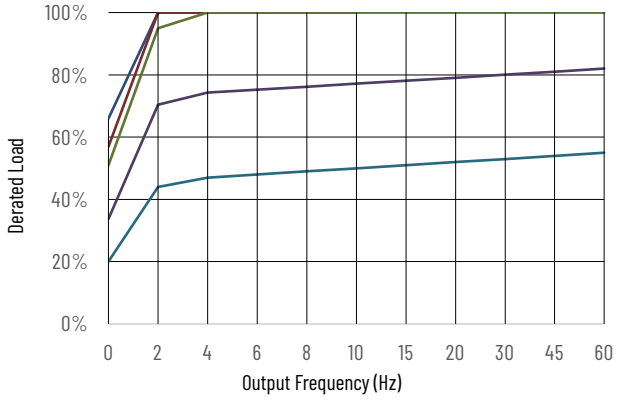




Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

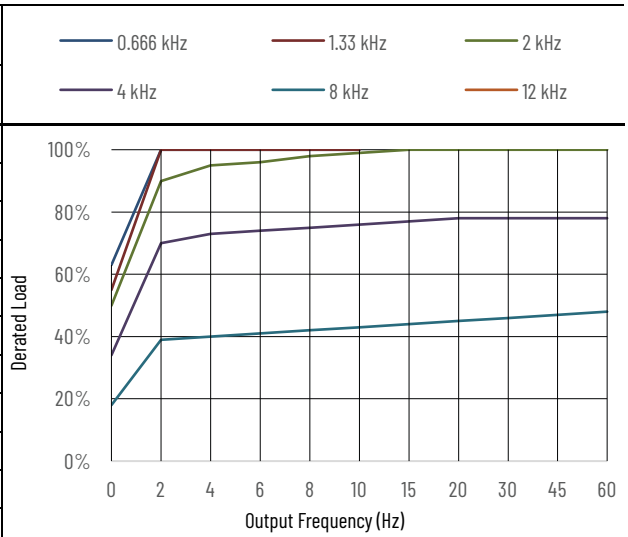
Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C170	6	90	170	75	140	0	86	78	72	56	34	24	
						2	100	100	100	91	62	46	
						4	100	100	100	100	70	53	
						6	100	100	100	100	74	55	
						8	100	100	100	100	76	57	
						10	100	100	100	100	78	59	
						15	–	–	100	100	81	62	
						20	–	–	100	100	84	64	
						30	–	–	100	100	86	66	
						45	–	–	100	100	87	67	
						60	–	–	100	100	88	68	
C205	6	110	205	90	170	0	71	65	61	45	28	20	
						2	100	98	92	72	52	39	
						4	100	100	100	80	59	44	
						6	100	100	100	86	62	46	
						8	100	100	100	89	64	48	
						10	100	100	100	90	66	50	
						15	–	–	100	94	69	52	
						20	–	–	100	95	70	54	
						30	–	–	100	96	71	56	
						45	–	–	100	96	72	57	
						60	–	–	100	96	74	58	
C260	6	132	260	110	205	0	63	57	53	30	22	20	
						2	95	90	84	62	42	31	
						4	100	95	90	68	46	33	
						6	100	98	92	70	47	34	
						8	100	100	94	71	48	35	
						10	100	100	95	72	49	36	
						15	–	–	98	74	50	37	
						20	–	–	99	76	51	38	
						30	–	–	100	76	52	39	
						45	–	–	100	76	53	40	
						60	–	–	100	76	54	41	

Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
C302	7	160	302	132	260	0	70	60	52	35	18	–	
						2	100	100	100	76	44	–	
						4	100	100	100	83	49	–	
						6	100	100	100	85	51	–	
						8	100	100	100	87	53	–	
						10	100	100	100	89	54	–	
						15	–	–	100	92	55	–	
						20	–	–	100	93	56	–	
						30	–	–	100	95	57	–	
						45	–	–	100	95	58	–	
						60	–	–	100	95	59	–	
C367	7	200	367	160	302	0	58	49	43	23	15	–	
						2	100	92	86	62	37	–	
						4	100	100	92	68	41	–	
						6	100	100	95	70	42	–	
						8	100	100	97	72	43	–	
						10	100	100	98	73	44	–	
						15	–	–	100	76	45	–	
						20	–	–	100	77	46	–	
						30	–	–	100	78	47	–	
						45	–	–	100	78	48	–	
						60	–	–	100	78	49	–	
C456	7	250	456	200	367	0	66	57	51	34	20	–	
						2	100	100	95	70	44	–	
						4	100	100	100	74	47	–	
						6	100	100	100	75	48	–	
						8	100	100	100	76	49	–	
						10	100	100	100	77	50	–	
						15	–	–	100	78	51	–	
						20	–	–	100	79	52	–	
						30	–	–	100	80	53	–	
						45	–	–	100	81	54	–	
						60	–	–	100	82	55	–	

Low Frequency Derating Cuves—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		kW	Cont. Amps	kW	Cont. Amps	Hz	0.666	1.33	2	4	8	12
C477	7	270	477	200	367	0	63	55	50	34	18	–
						2	100	100	90	70	39	–
						4	100	100	95	73	40	–
						6	100	100	96	74	41	–
						8	100	100	98	75	42	–
						10	100	100	99	76	43	–
						15	–	–	100	77	44	–
						20	–	–	100	78	45	–
						30	–	–	100	78	46	–
						45	–	–	100	78	47	–
						60	–	–	100	78	48	–

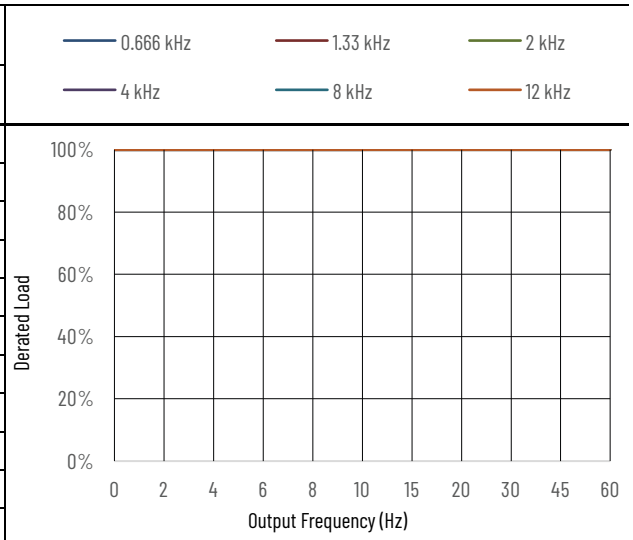


Low Frequency Derating—480V

The following graphs show the low frequency deratings for 480V PowerFlex 755TS drives. If a catalog number is not shown, that drive can be operated without derating as long as the limits specified on page 20 are followed.

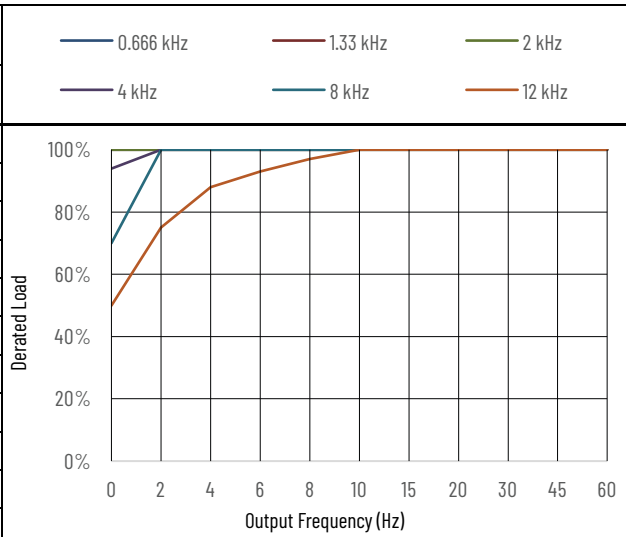
Low Frequency Drating Curves—480V AC Frames 1...7

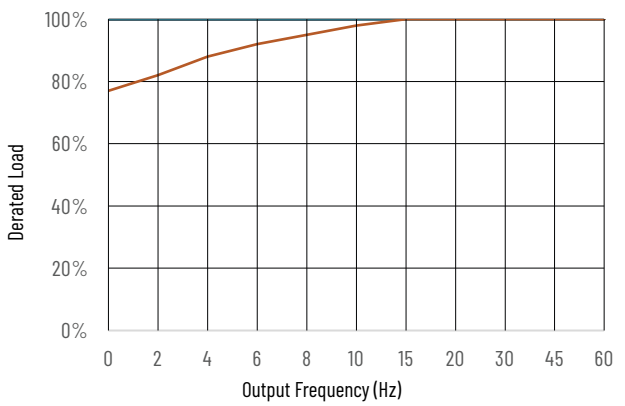
Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D2P1	1	1	2.1	0.5	1.1	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D3P4	1	2	3.4	1	2.1	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D5P0	1	3	5	2	3.4	0	100	100	100	100	100	80
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100

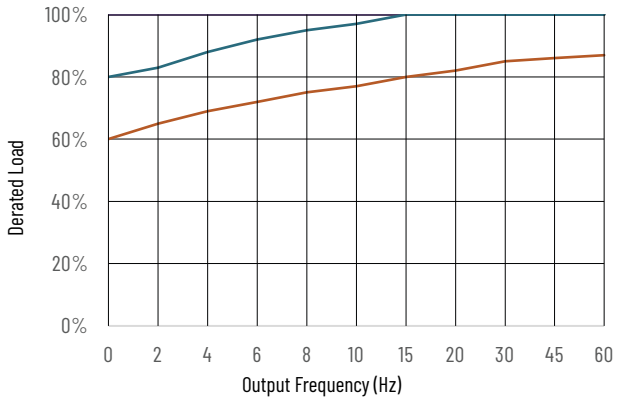


Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D8P0	1	5	8	3	5	0	100	100	100	94	70	50
						2	100	100	100	100	100	75
						4	100	100	100	100	100	88
						6	100	100	100	100	100	93
						8	100	100	100	100	100	97
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D011	1	7.5	11	5	8	0	100	100	100	100	100	77
						2	100	100	100	100	100	82
						4	100	100	100	100	100	88
						6	100	100	100	100	100	92
						8	100	100	100	100	100	95
						10	100	100	100	100	100	98
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D014	1	10	14	7.5	11	0	100	100	100	100	80	60
						2	100	100	100	100	83	65
						4	100	100	100	100	88	69
						6	100	100	100	100	92	72
						8	100	100	100	100	95	75
						10	100	100	100	100	97	77
						15	–	–	100	100	100	80
						20	–	–	100	100	100	82
						30	–	–	100	100	100	85
						45	–	–	100	100	100	86
						60	–	–	100	100	100	87

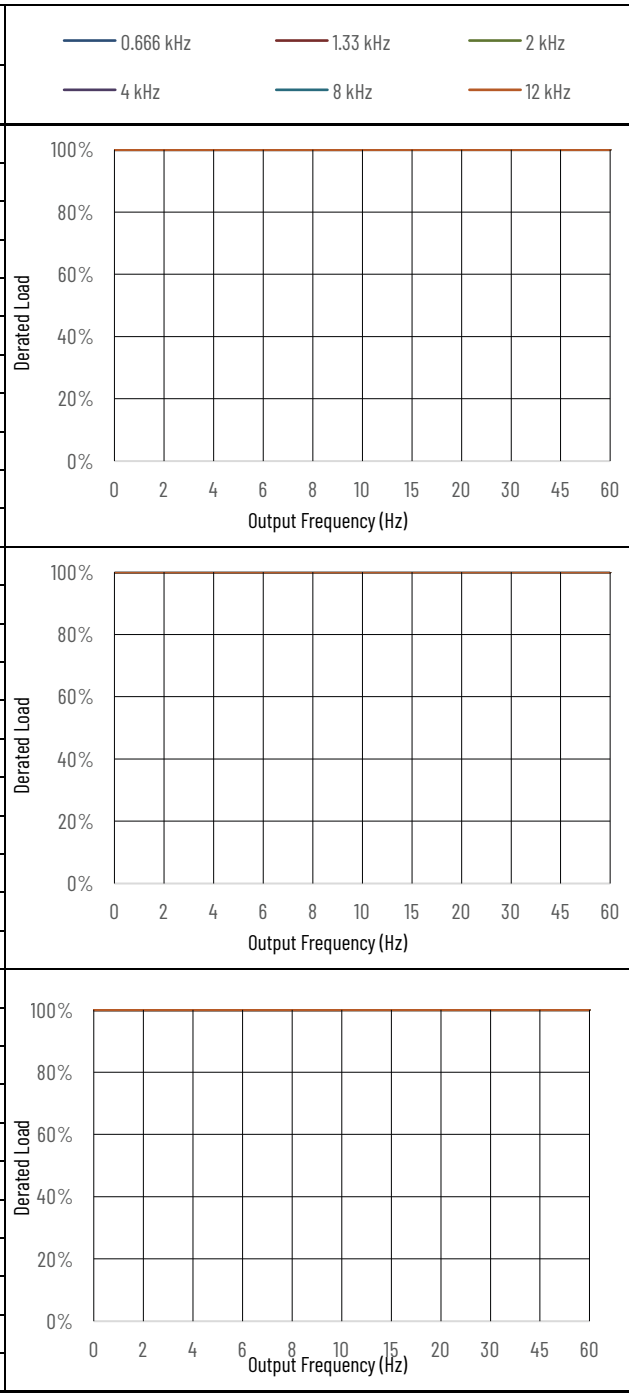






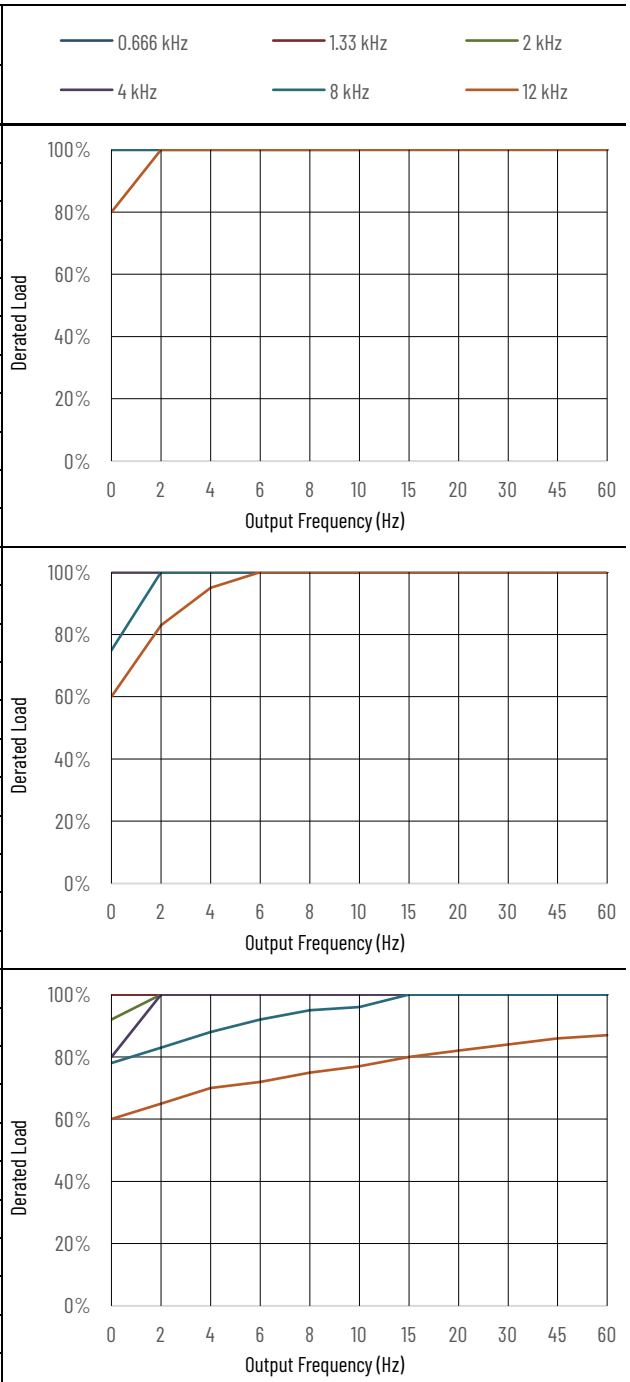
Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D2P1	2	1	2.1	1	2.1	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D3P4	2	2	3.4	2	3.4	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D5P0	2	3	5	3	5	0	100	100	100	100	100	100
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100



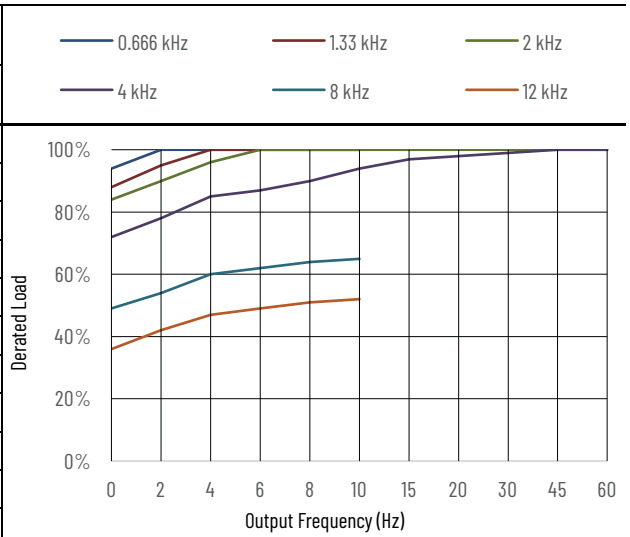
Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

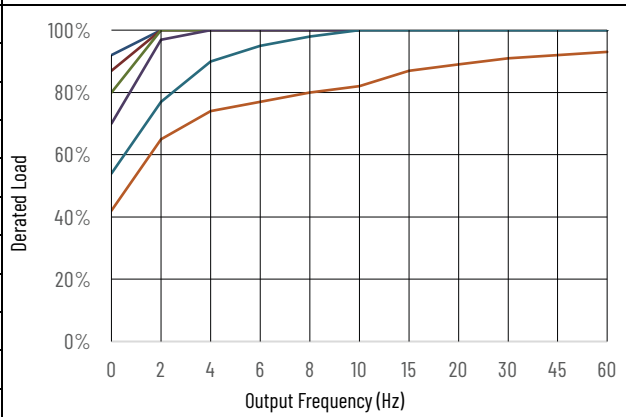
Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D8P0	2	5	8	5	8	0	100	100	100	100	100	80
						2	100	100	100	100	100	100
						4	100	100	100	100	100	100
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D011	2	7.5	11	7.5	11	0	100	100	100	100	75	60
						2	100	100	100	100	100	83
						4	100	100	100	100	100	95
						6	100	100	100	100	100	100
						8	100	100	100	100	100	100
						10	100	100	100	100	100	100
						15	–	–	100	100	100	100
						20	–	–	100	100	100	100
						30	–	–	100	100	100	100
						45	–	–	100	100	100	100
						60	–	–	100	100	100	100
D014	2	10	14	7.5	11	0	100	100	92	80	78	60
						2	100	100	100	100	83	65
						4	100	100	100	100	88	70
						6	100	100	100	100	92	72
						8	100	100	100	100	95	75
						10	100	100	100	100	96	77
						15	–	–	100	100	100	80
						20	–	–	100	100	100	82
						30	–	–	100	100	100	84
						45	–	–	100	100	100	86
						60	–	–	100	100	100	87

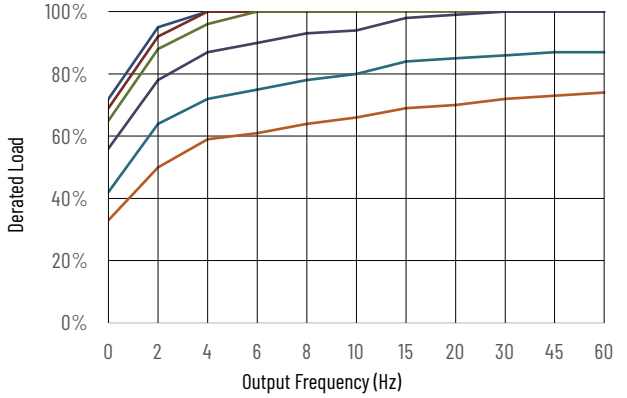


Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D022	2	15	22	10	14	0	94	88	84	72	49	36
						2	100	95	90	78	54	42
						4	100	100	96	85	60	47
						6	100	100	100	87	62	49
						8	100	100	100	90	64	51
						10	100	100	100	94	65	52
						15	–	–	100	97	–	–
						20	–	–	100	98	–	–
						30	–	–	100	99	–	–
						45	–	–	100	100	–	–
						60	–	–	100	100	–	–
D027	3	20	27	15	22	0	92	87	80	70	54	42
						2	100	100	100	97	77	65
						4	100	100	100	100	90	74
						6	100	100	100	100	95	77
						8	100	100	100	100	98	80
						10	100	100	100	100	100	82
						15	–	–	100	100	100	87
						20	–	–	100	100	100	89
						30	–	–	100	100	100	91
						45	–	–	100	100	100	92
						60	–	–	100	100	100	93
D034	3	25	34	20	27	0	72	69	65	56	42	33
						2	95	92	88	78	64	50
						4	100	100	96	87	72	59
						6	100	100	100	90	75	61
						8	100	100	100	93	78	64
						10	100	100	100	94	80	66
						15	–	–	100	98	84	69
						20	–	–	100	99	85	70
						30	–	–	100	100	86	72
						45	–	–	100	100	87	73
						60	–	–	100	100	87	74

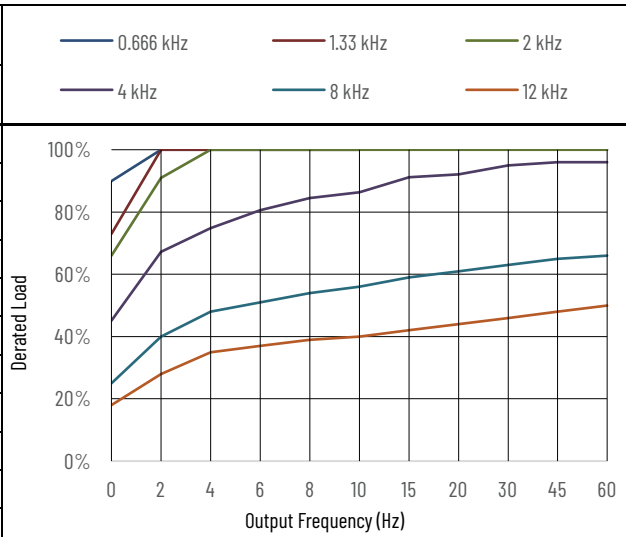


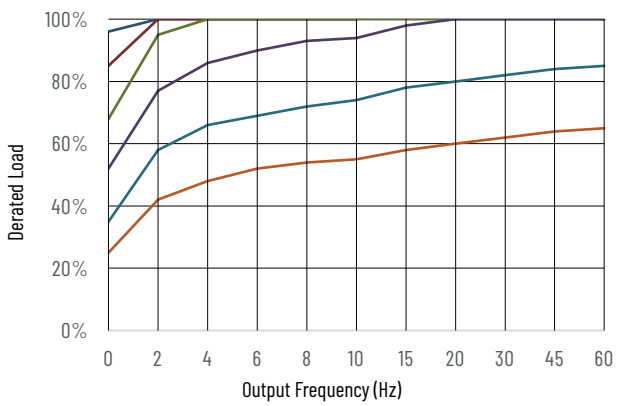


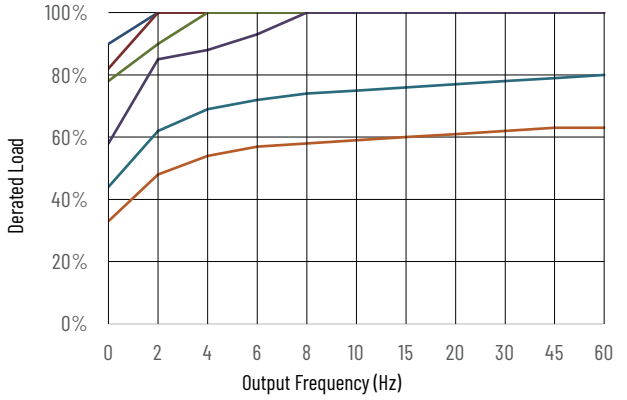


Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D040	3	30	40	25	34	0	90	73	66	45	25	18
						2	100	100	67	67	40	28
						4	100	100	75	75	48	35
						6	100	100	81	81	51	37
						8	100	100	84	84	54	39
						10	100	100	86	86	56	40
						15	–	–	91	91	59	42
						20	–	–	92	92	61	44
						30	–	–	95	95	63	46
						45	–	–	96	96	65	48
						60	–	–	96	96	66	50
D052	4	40	52	30	40	0	96	85	68	52	35	25
						2	100	100	95	77	58	42
						4	100	100	100	86	66	48
						6	100	100	100	90	69	52
						8	100	100	100	93	72	54
						10	100	100	100	94	74	55
						15	–	–	100	98	78	58
						20	–	–	100	100	80	60
						30	–	–	100	100	82	62
						45	–	–	100	100	84	64
						60	–	–	100	100	85	65
D053	3	40	53	30	40	0	90	82	78	58	44	33
						2	100	100	90	85	62	48
						4	100	100	100	88	69	54
						6	100	100	100	93	72	57
						8	100	100	100	100	74	58
						10	100	100	100	100	75	59
						15	–	–	100	100	76	60
						20	–	–	100	100	77	61
						30	–	–	100	100	78	62
						45	–	–	100	100	79	63
						60	–	–	100	100	80	63

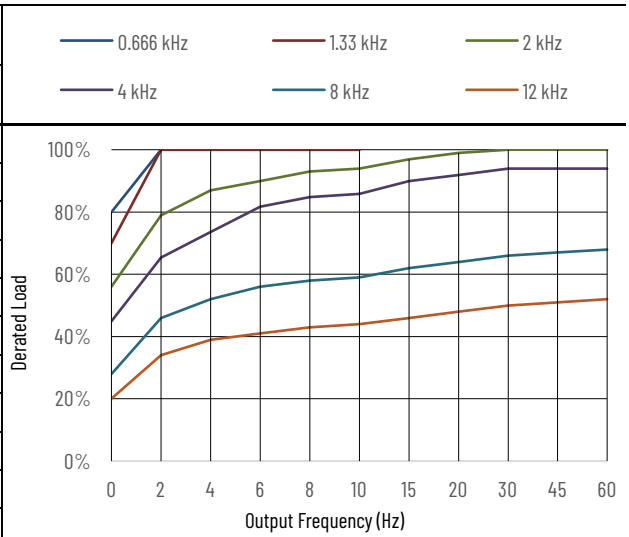


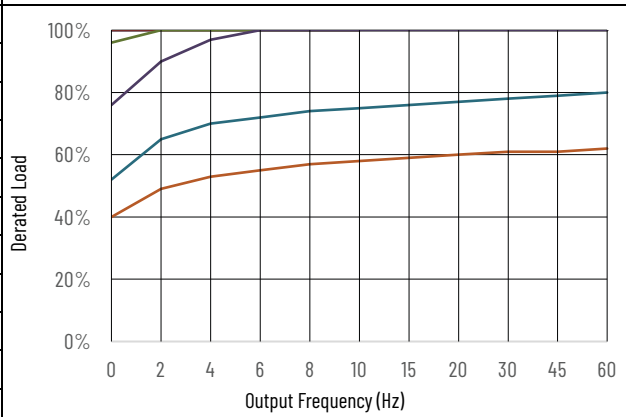


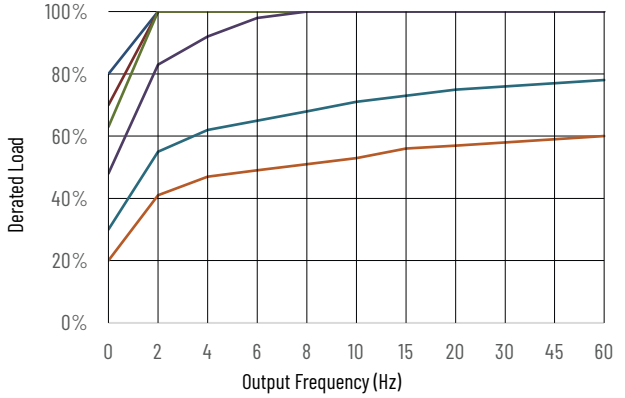


Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D065	4	50	65	40	52	0	80	70	56	45	28	20
						2	100	100	79	65	46	34
						4	100	100	87	74	52	39
						6	100	100	90	82	56	41
						8	100	100	93	85	58	43
						10	100	100	94	86	59	44
						15	–	–	97	90	62	46
						20	–	–	99	92	64	48
						30	–	–	100	94	66	50
						45	–	–	100	94	67	51
						60	–	–	100	94	68	52
D066	4	50	66	40	52	0	100	100	96	76	52	40
						2	100	100	100	90	65	49
						4	100	100	100	97	70	53
						6	100	100	100	100	72	55
						8	100	100	100	100	74	57
						10	100	100	100	100	75	58
						15	–	–	100	100	76	59
						20	–	–	100	100	77	60
						30	–	–	100	100	78	61
						45	–	–	100	100	79	61
						60	–	–	100	100	80	62
D077	5	60	77	50	65	0	80	70	63	48	30	20
						2	100	100	100	83	55	41
						4	100	100	100	92	62	47
						6	100	100	100	98	65	49
						8	100	100	100	100	68	51
						10	100	100	100	100	71	53
						15	–	–	100	100	73	56
						20	–	–	100	100	75	57
						30	–	–	100	100	76	58
						45	–	–	100	100	77	59
						60	–	–	100	100	78	60

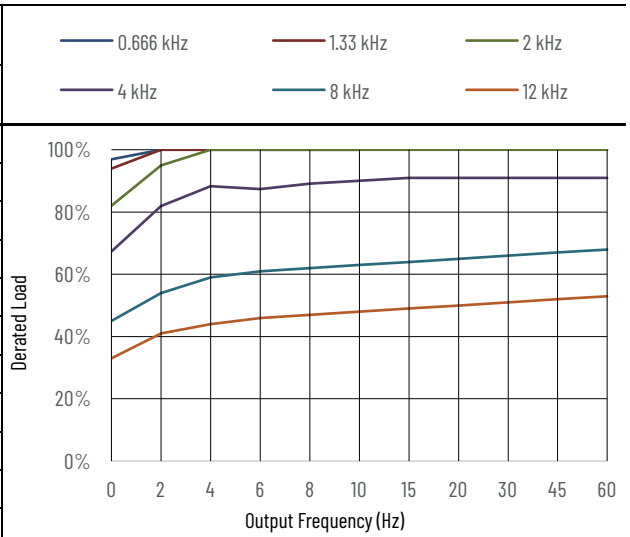


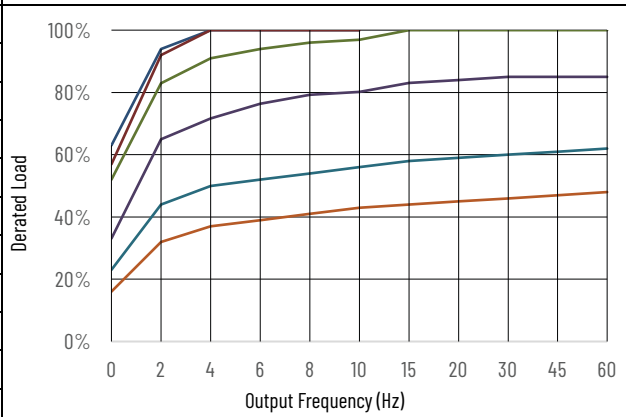


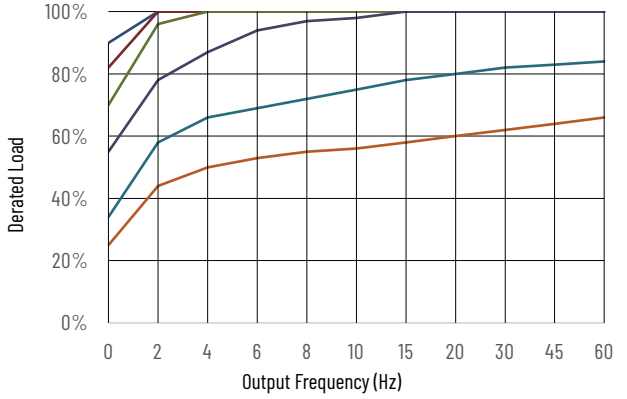


Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

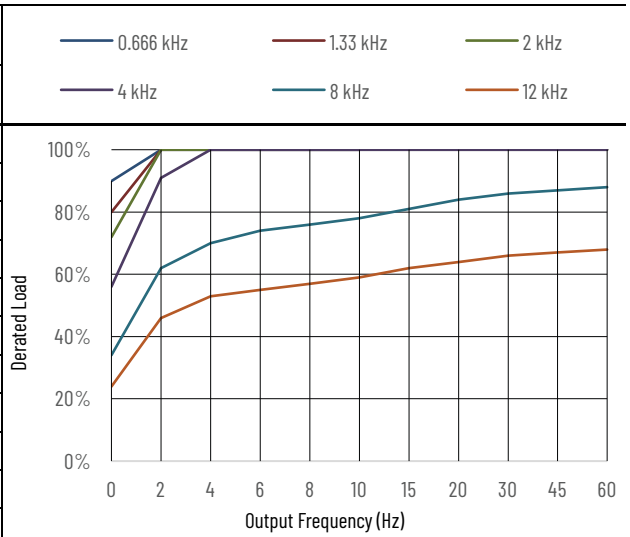
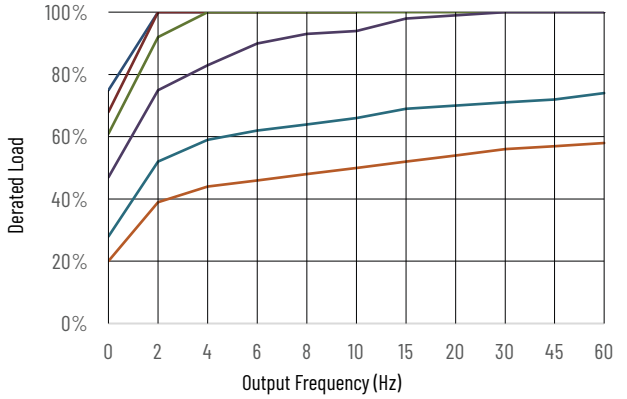
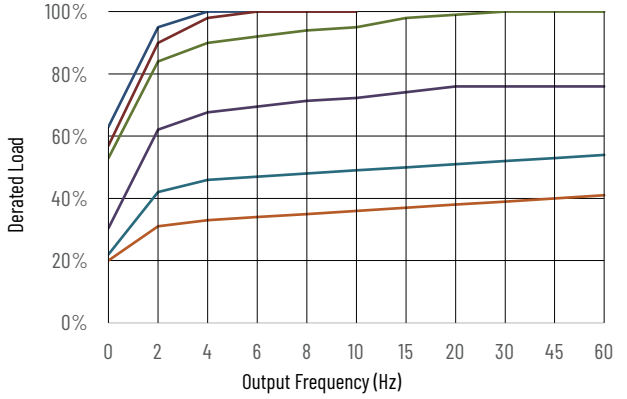
Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D078	4	60	78	50	65	0	97	94	82	67	45	33
						2	100	100	95	82	54	41
						4	100	100	100	88	59	44
						6	100	100	100	87	61	46
						8	100	100	100	89	62	47
						10	100	100	100	90	63	48
						15	–	–	100	91	64	49
						20	–	–	100	91	65	50
						30	–	–	100	91	66	51
						45	–	–	100	91	67	52
						60	–	–	100	91	68	53
D096	5	75	96	60	77	0	63	57	52	33	23	16
						2	94	92	83	65	44	32
						4	100	100	91	72	50	37
						6	100	100	94	76	52	39
						8	100	100	96	79	54	41
						10	100	100	97	80	56	43
						15	–	–	100	83	58	44
						20	–	–	100	84	59	45
						30	–	–	100	85	60	46
						45	–	–	100	85	61	47
						60	–	–	100	85	62	48
D125	6	100	125	75	96	0	90	82	70	55	34	25
						2	100	100	96	78	58	44
						4	100	100	100	87	66	50
						6	100	100	100	94	69	53
						8	100	100	100	97	72	55
						10	100	100	100	98	75	56
						15	–	–	100	100	78	58
						20	–	–	100	100	80	60
						30	–	–	100	100	82	62
						45	–	–	100	100	83	64
						60	–	–	100	100	84	66



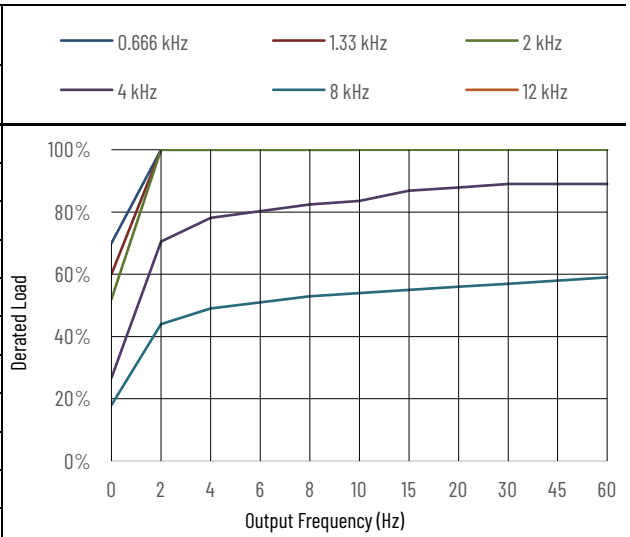
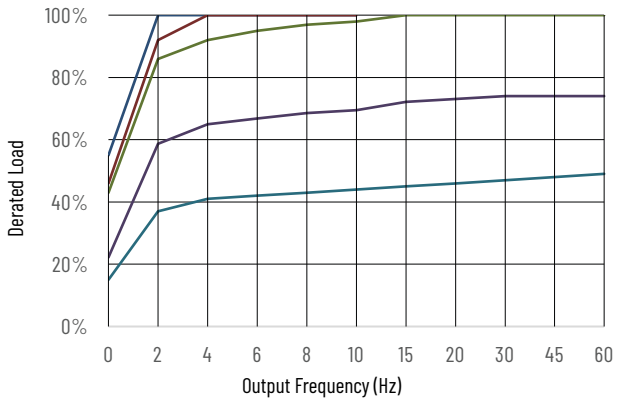
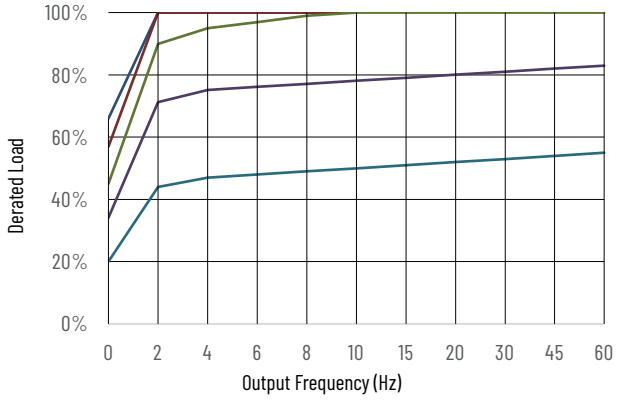




Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

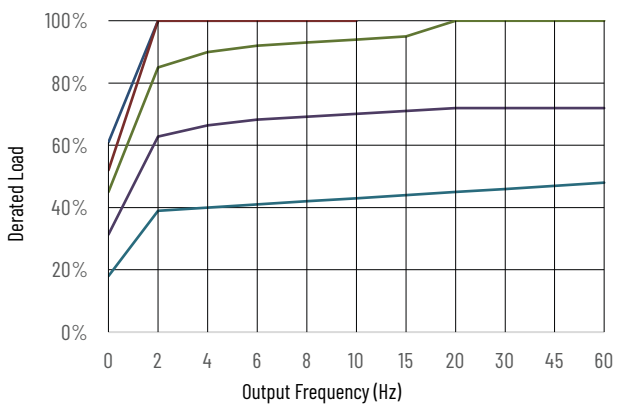
Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
D156	6	125	156	100	125	0	90	80	72	56	34	24	
						2	100	100	100	91	62	46	
						4	100	100	100	100	70	53	
						6	100	100	100	100	74	55	
						8	100	100	100	100	76	57	
						10	100	100	100	100	78	59	
						15	–	–	100	100	81	62	
						20	–	–	100	100	84	64	
						30	–	–	100	100	86	66	
						45	–	–	100	100	87	67	
						60	–	–	100	100	88	68	
D186	6	150	186	125	156	0	75	68	61	47	28	20	
						2	100	100	92	75	52	39	
						4	100	100	100	83	59	44	
						6	100	100	100	90	62	46	
						8	100	100	100	93	64	48	
						10	100	100	100	94	66	50	
						15	–	–	100	98	69	52	
						20	–	–	100	99	70	54	
						30	–	–	100	100	71	56	
						45	–	–	100	100	72	57	
						60	–	–	100	100	74	58	
D248	6	200	248	150	186	0	63	57	53	30	22	20	
						2	95	90	84	62	42	31	
						4	100	98	90	68	46	33	
						6	100	100	92	70	47	34	
						8	100	100	94	71	48	35	
						10	100	100	95	72	49	36	
						15	–	–	98	74	50	37	
						20	–	–	99	76	51	38	
						30	–	–	100	76	52	39	
						45	–	–	100	76	53	40	
						60	–	–	100	76	54	41	

Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type							
		ND		HD		Output Freq.	PWM Frequency kHz						
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12	
D302	7	250	302	200	248	0	70	60	52	27	18	–	
						2	100	100	100	71	44	–	
						4	100	100	100	78	49	–	
						6	100	100	100	80	51	–	
						8	100	100	100	82	53	–	
						10	100	100	100	84	54	–	
						15	–	–	100	87	55	–	
						20	–	–	100	88	56	–	
						30	–	–	100	89	57	–	
						45	–	–	100	89	58	–	
						60	–	–	100	89	59	–	
D361	7	300	361	250	302	0	55	46	43	22	15	–	
						2	100	92	86	59	37	–	
						4	100	100	92	65	41	–	
						6	100	100	95	67	42	–	
						8	100	100	97	69	43	–	
						10	100	100	98	69	44	–	
						15	–	–	100	72	45	–	
						20	–	–	100	73	46	–	
						30	–	–	100	74	47	–	
						45	–	–	100	74	48	–	
						60	–	–	100	74	49	–	
D415	7	350	415	300	361	0	66	57	45	34	20	–	
						2	100	100	90	71	44	–	
						4	100	100	95	75	47	–	
						6	100	100	97	76	48	–	
						8	100	100	99	77	49	–	
						10	100	100	100	78	50	–	
						15	–	–	100	79	51	–	
						20	–	–	100	80	52	–	
						30	–	–	100	81	53	–	
						45	–	–	100	82	54	–	
						60	–	–	100	83	55	–	

Low Frequency Drating Curves—480V AC Frames 1...7 (Continued)

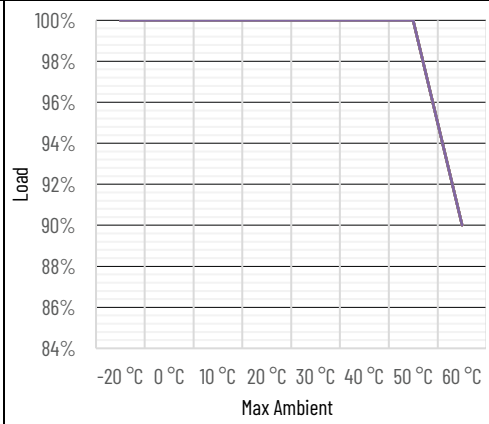
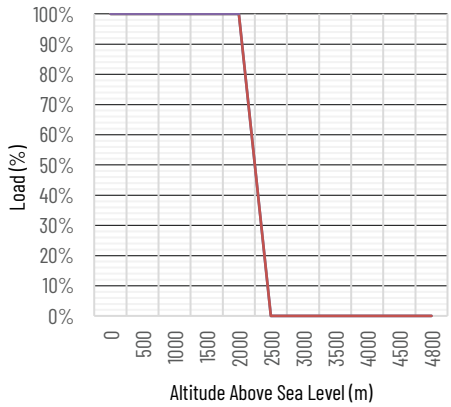
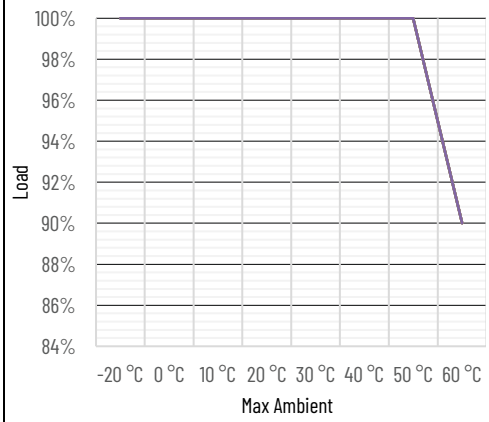
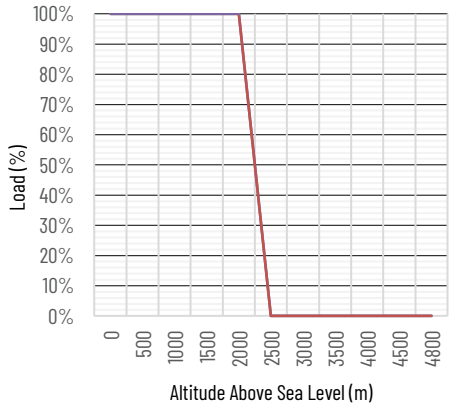
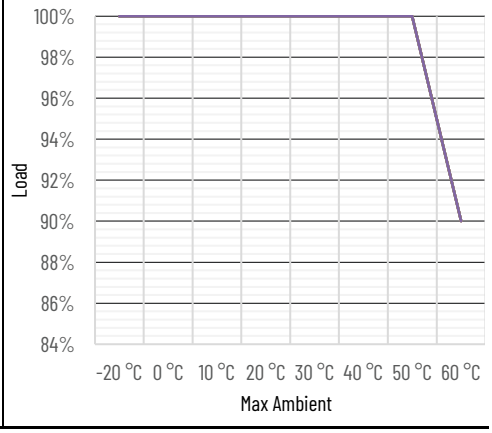
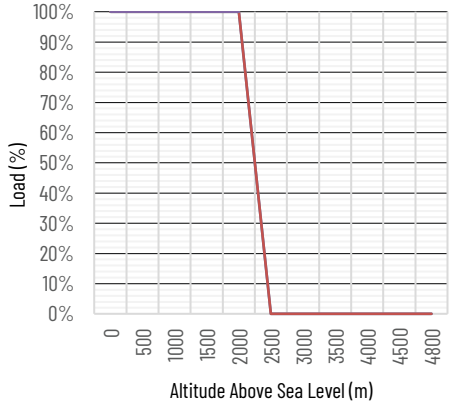
Cat. No. 20G...	Frame	480V AC Power Rating				Low Frequency Derating for IP00, NEMA/UL Open Type						
		ND		HD		Output Freq.	PWM Frequency kHz					
		Hp	Cont. Amps	Hp	Cont. Amps	Hz	0.666	1.33	2	4	8	12
D477	7	400	477	300	361	0	61	52	45	31	18	–
						2	100	100	85	63	39	–
						4	100	100	90	66	40	–
						6	100	100	92	68	41	–
						8	100	100	93	69	42	–
						10	100	100	94	70	43	–
						15	–	–	95	71	44	–
						20	–	–	100	72	45	–
						30	–	–	100	72	46	–
						45	–	–	100	72	47	–
						60	–	–	100	72	48	–



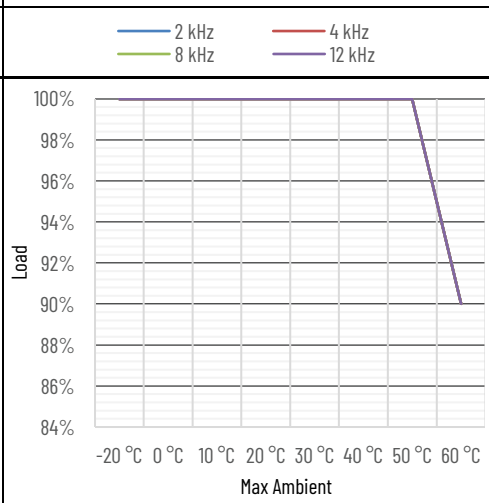
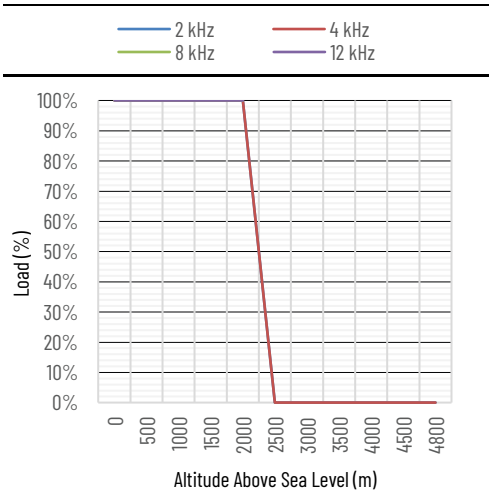
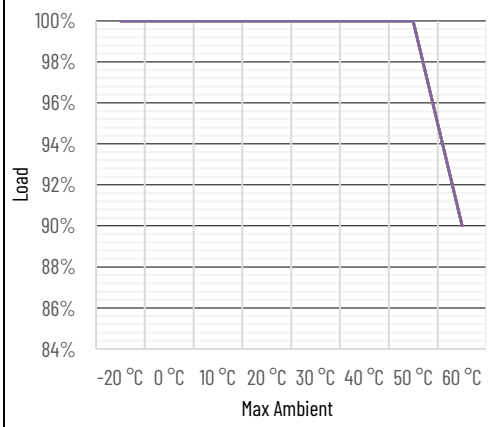
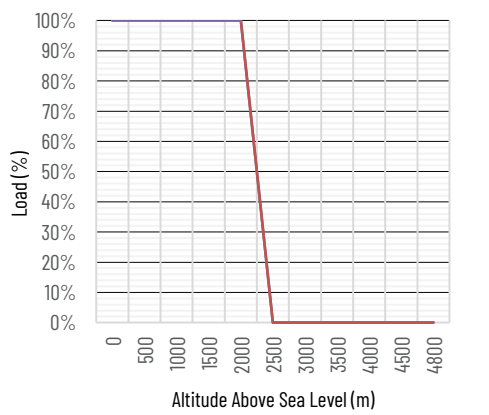
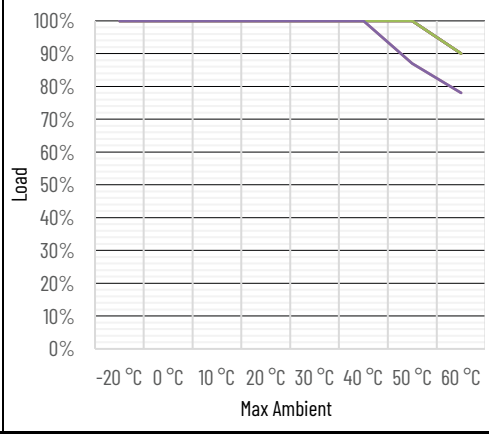
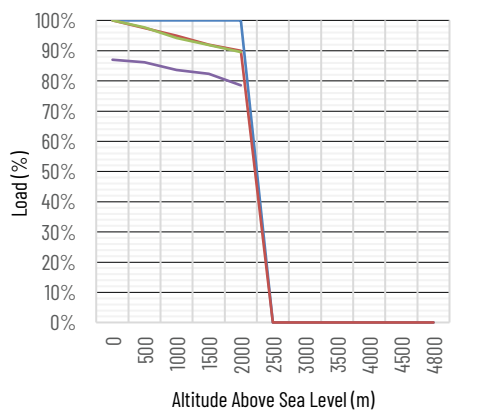
Temperature and Altitude Derating—400V

The following graphs show the ambient temperature and altitude deratings for 400V PowerFlex 755TS products.

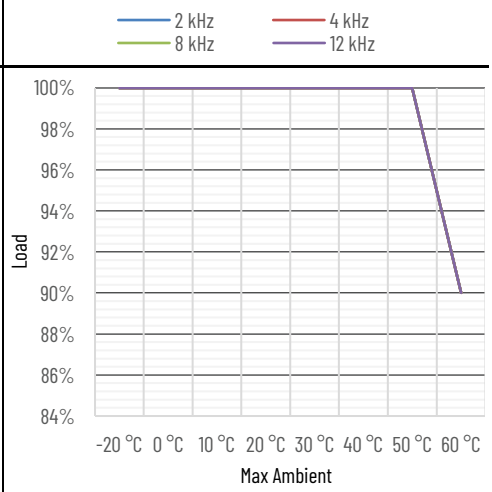
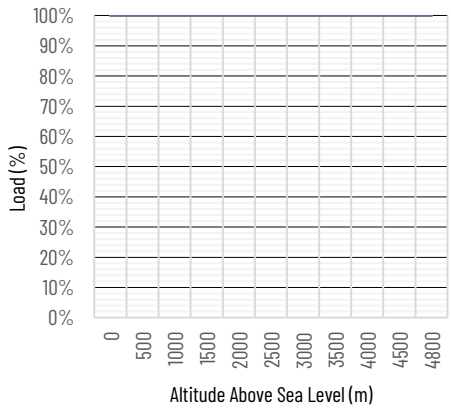
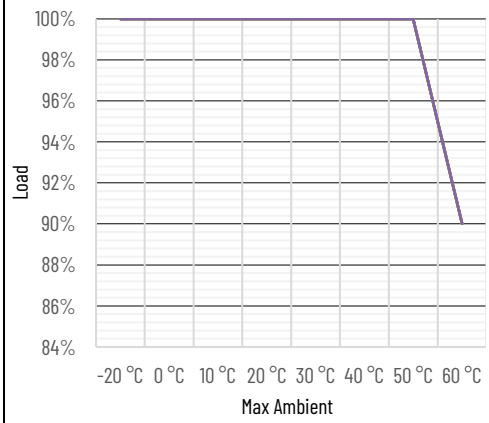
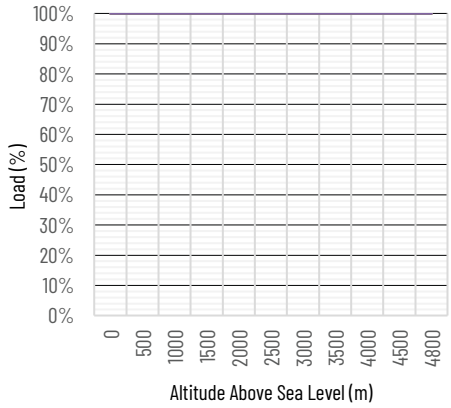
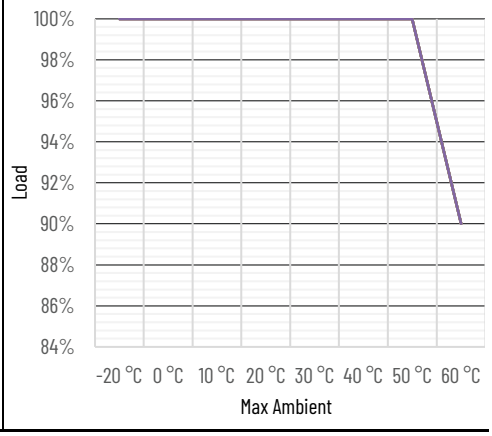
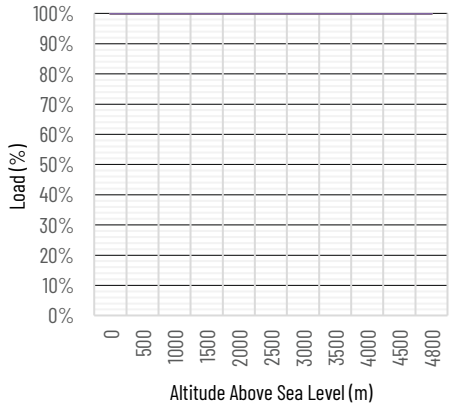
Temperature and Altitude Derating—400V AC Frames 1...7

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps	2 kHz, 4 kHz, 8 kHz, 12 kHz	2 kHz, 4 kHz, 8 kHz, 12 kHz
C2P1	1	0.75	2.1	0.37	1.3		
C3P5	1	1.5	3.5	0.75	3.5		
C5P0	1	2.2	5	1.5	3.5		

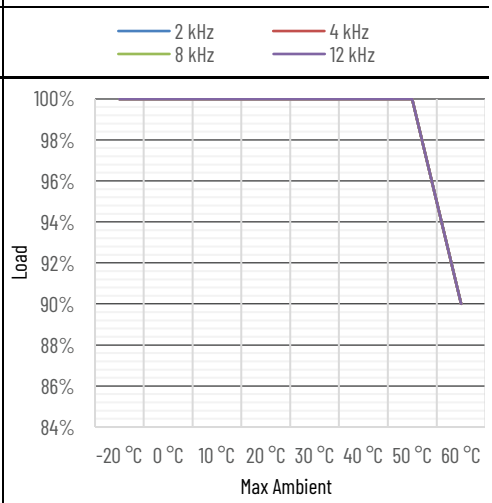
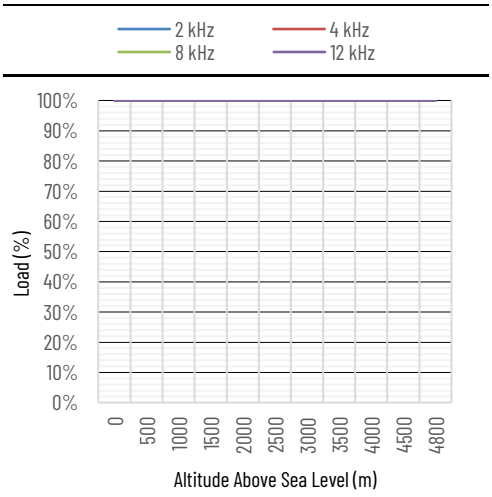
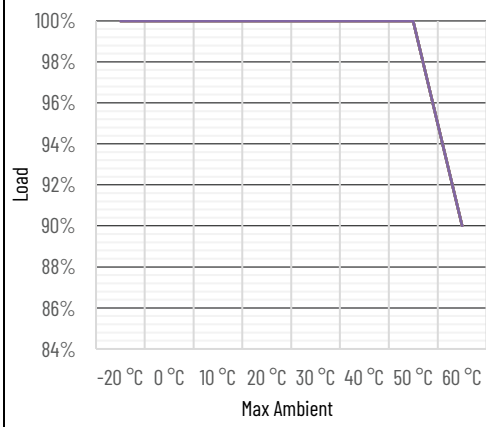
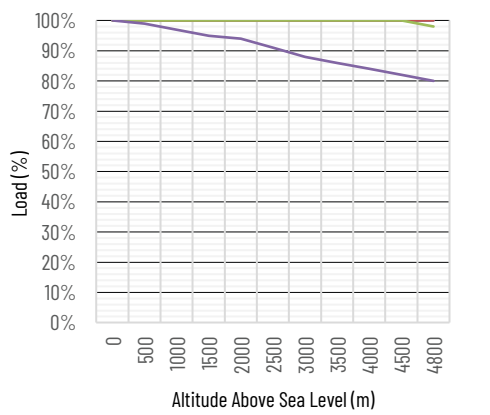
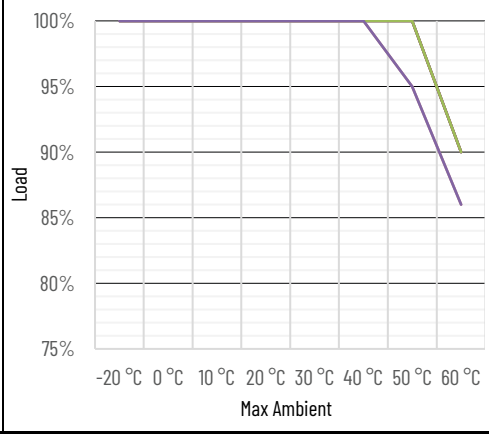
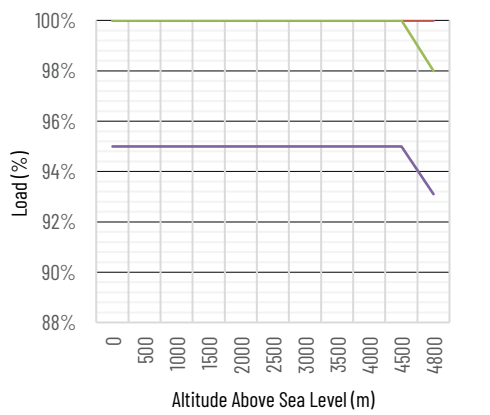
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C8P7	1	4	8.7	2.2	5		
C011	1	5.5	11.5	4	8.7		
C015	1	7.5	15.4	5.5	11.5		

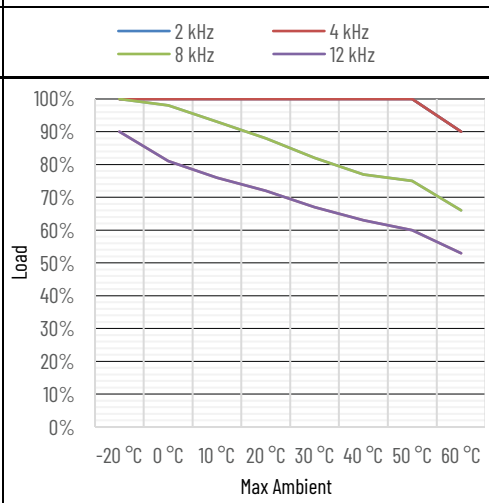
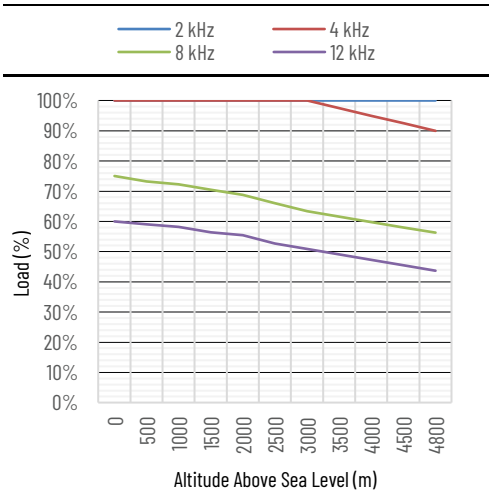
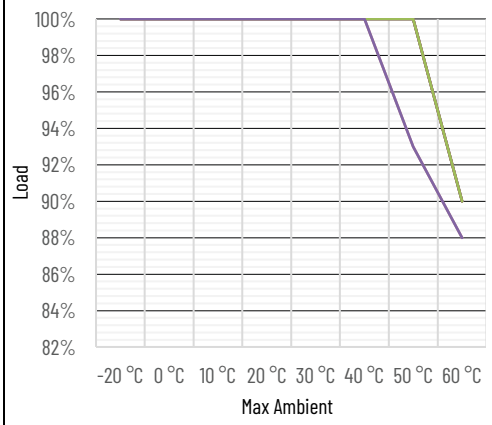
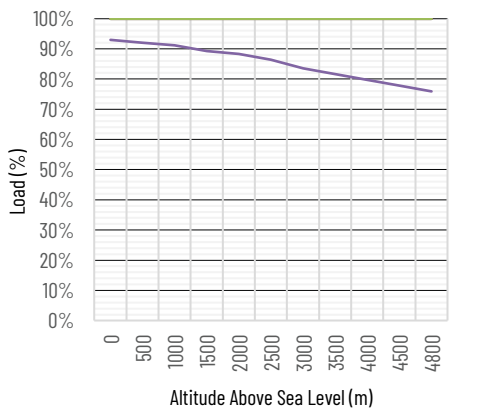
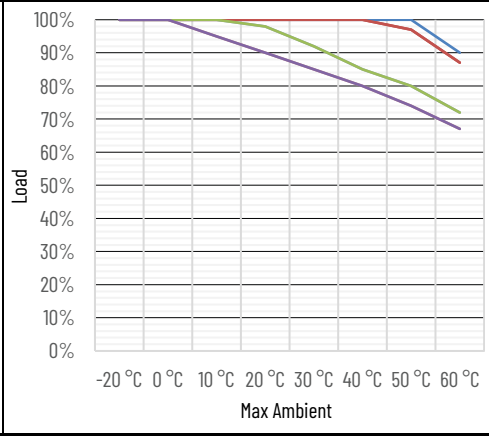
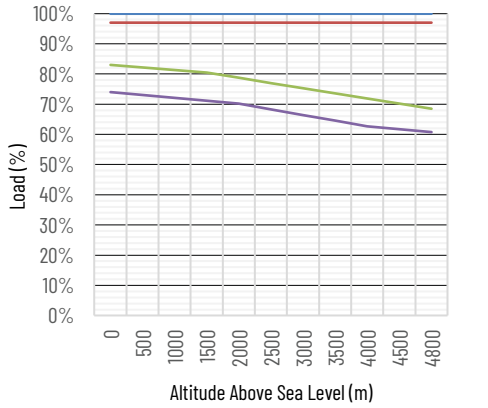
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C2P1	2	0.75	2.1	0.75	2.1		
C3P5	2	1.5	3.5	1.5	3.5		
C5P0	2	2.2	5	2.2	5		

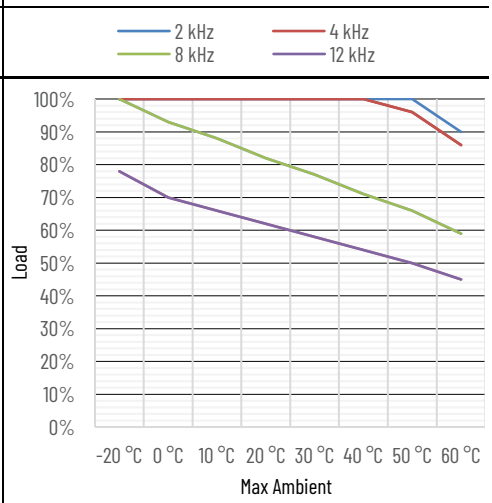
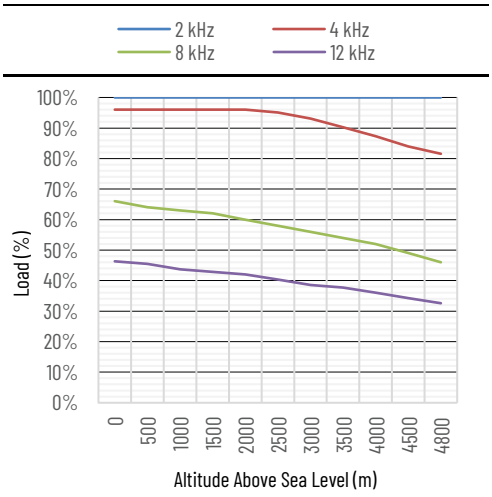
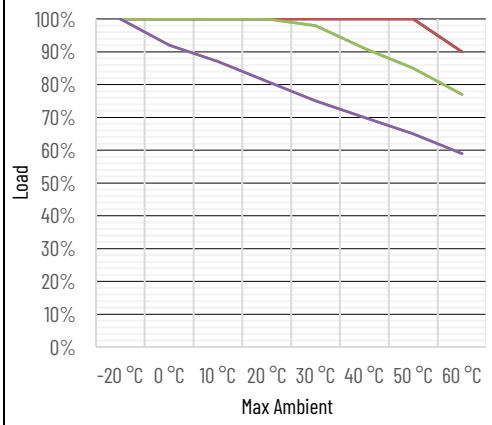
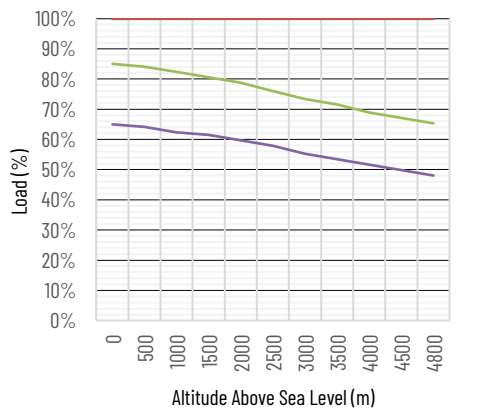
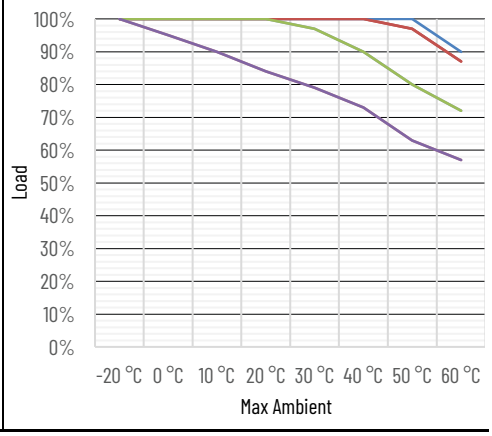
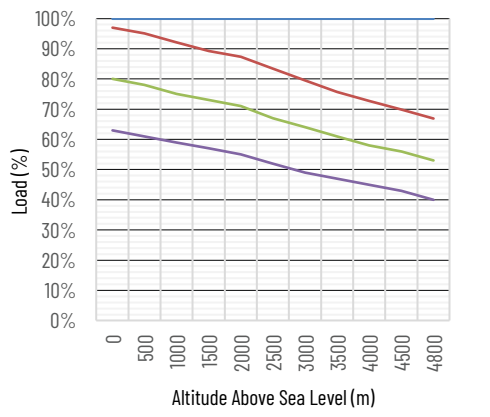
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C8P7	2	4	8.7	4	8.7		
C011	2	5.5	11.5	5.5	11.5		
C015	2	7.5	15.4	5.5	11.5		

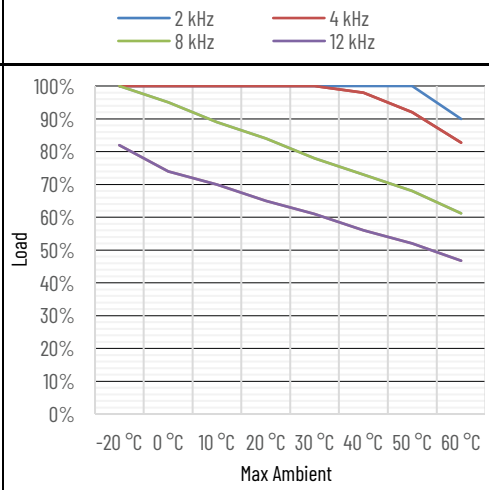
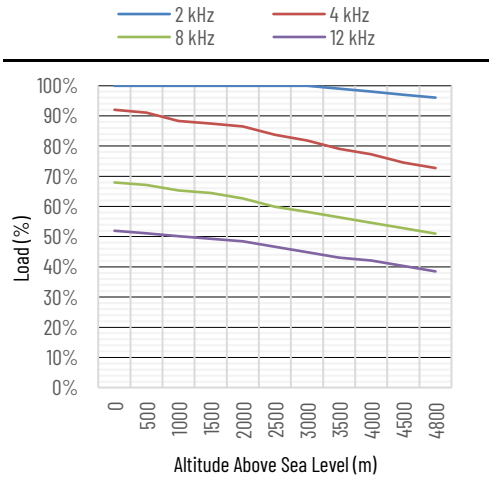
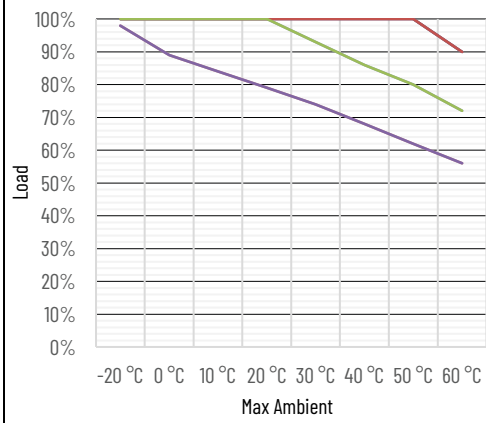
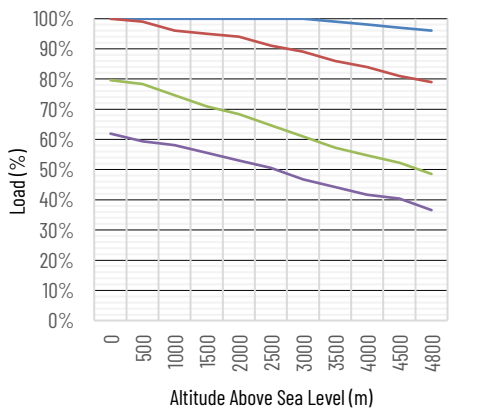
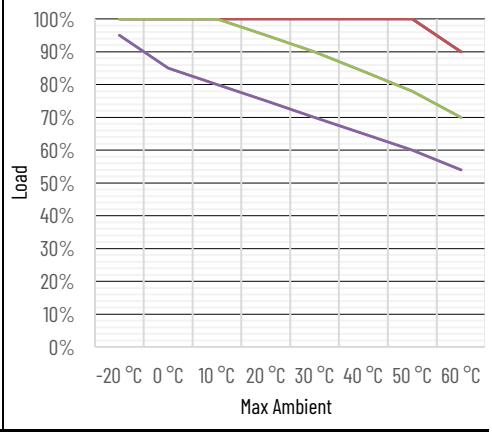
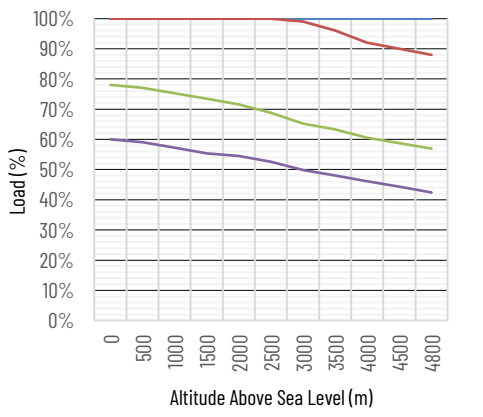
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C022	2	11	22	7.5	15.4		
C030	3	15	30	11	22		
C037	3	18.5	37	15	30		

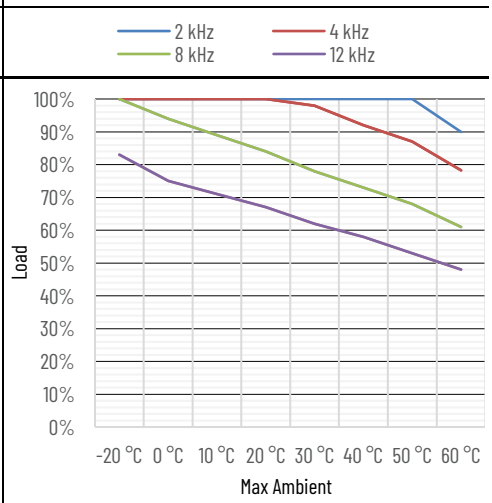
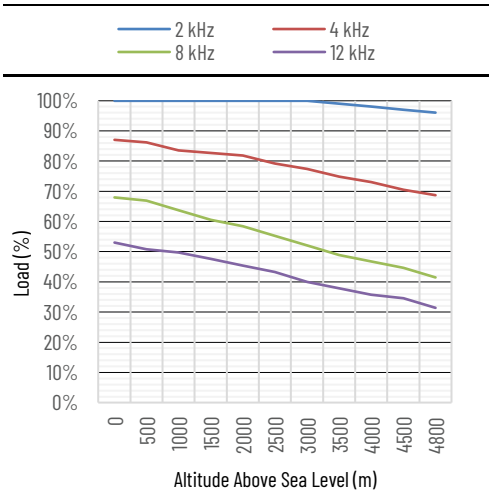
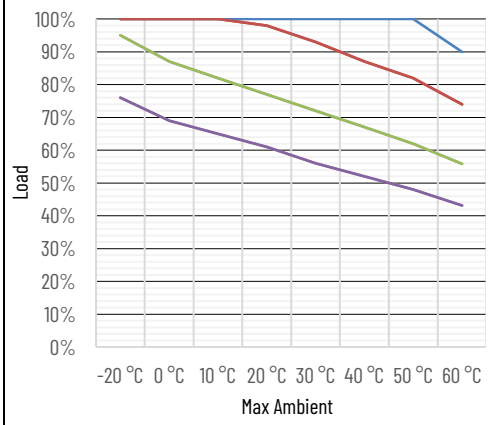
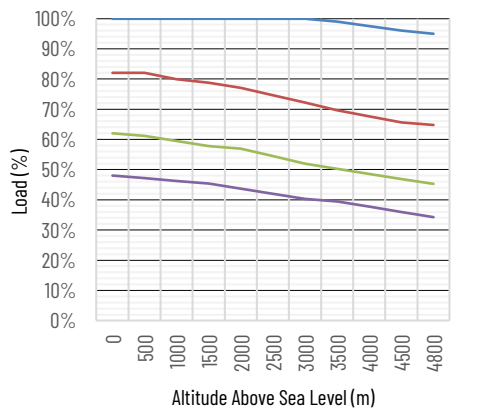
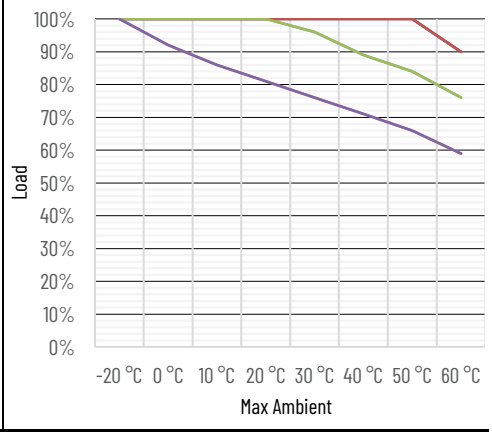
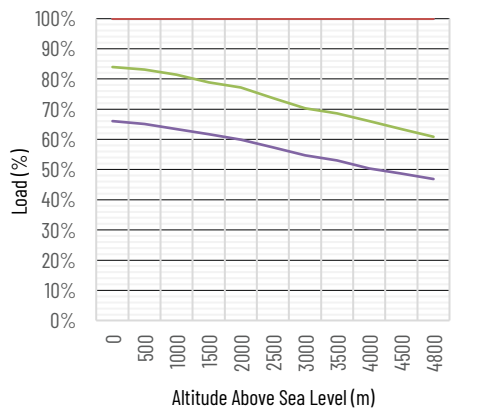
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C043	3	22	43	18.5	37		
C060	4	30	60	22	43		
C061	3	30	61	22	43		

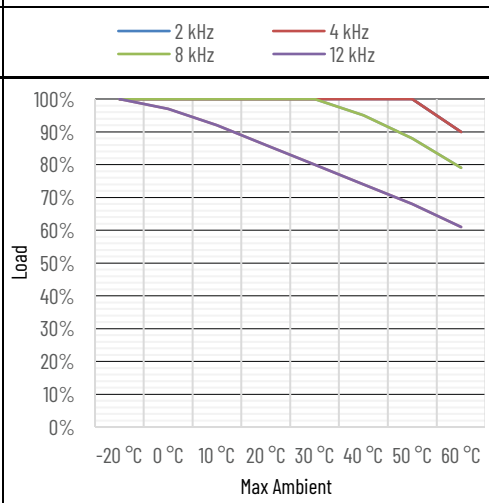
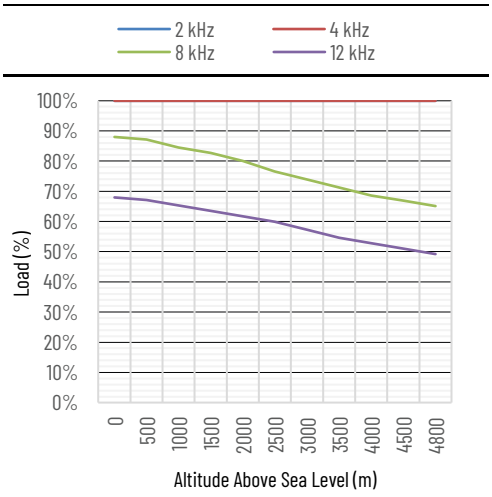
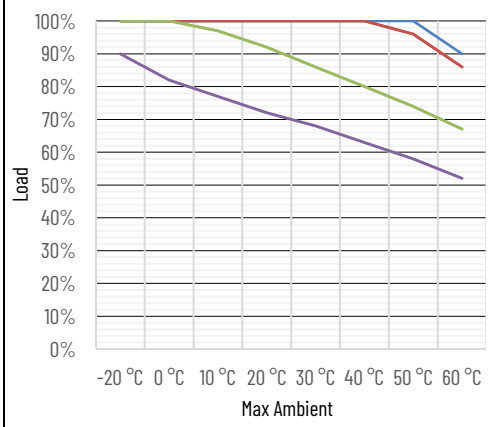
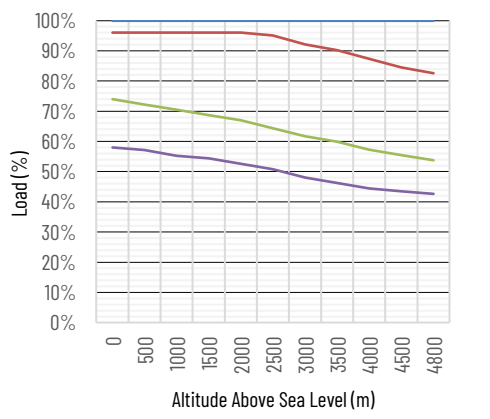
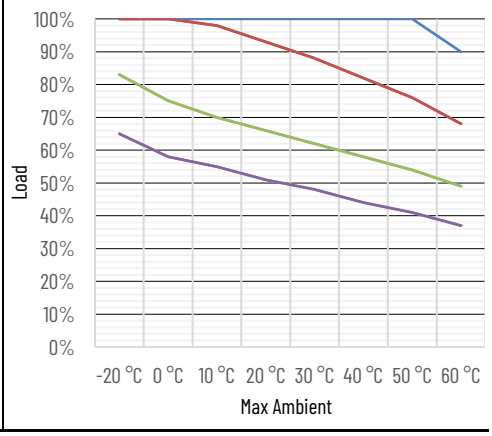
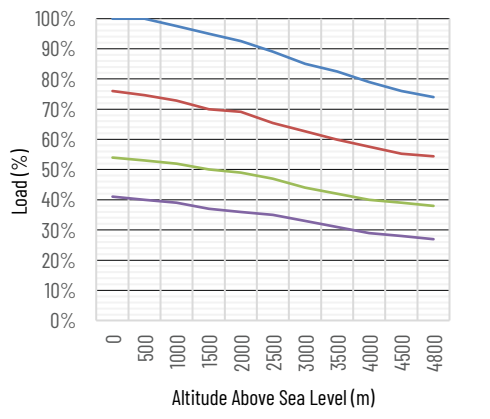
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C072	4	37	72	30	60		
C073	4	37	73	30	60		
C085	5	45	85	37	72		

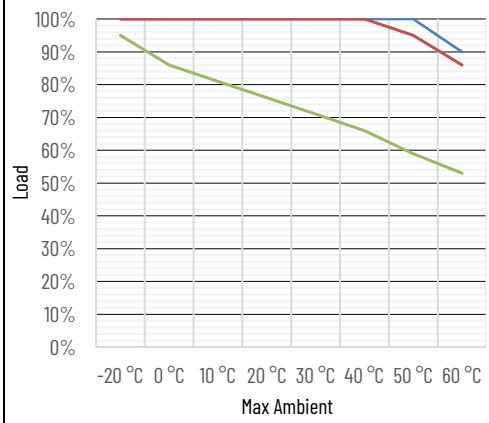
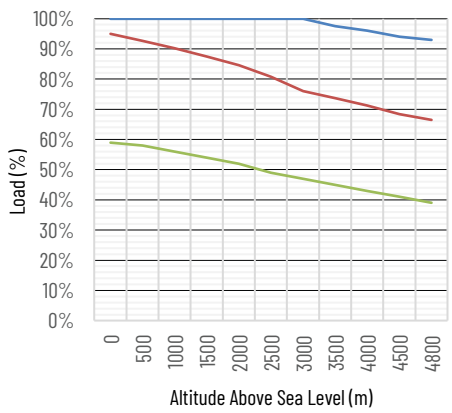
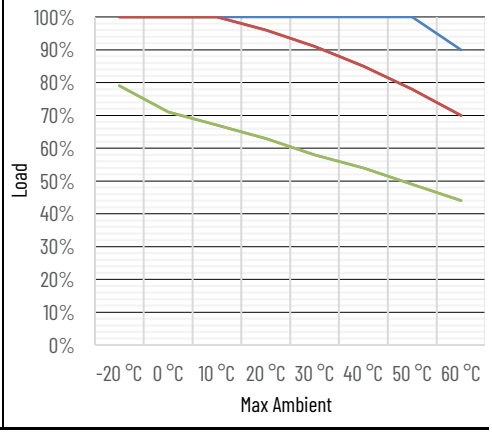
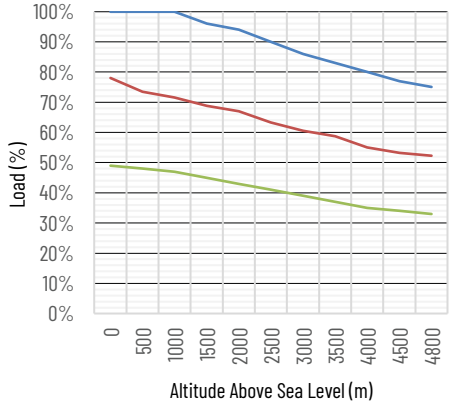
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C086	4	45	86	37	72		
C104	5	55	104	45	85		
C140	6	75	140	55	104		

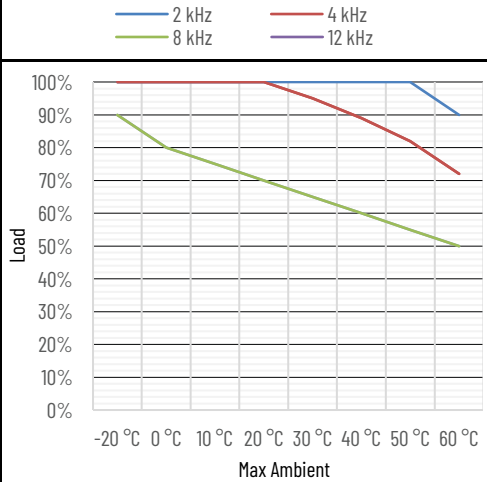
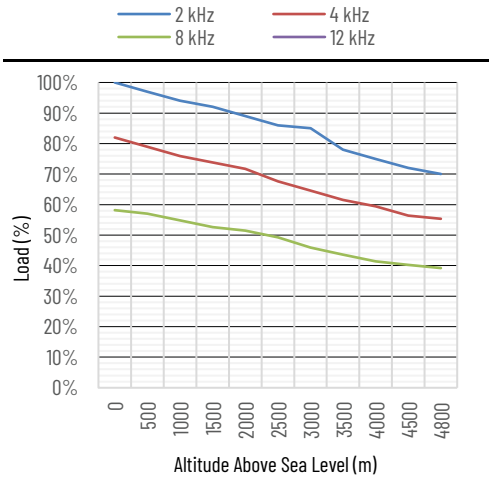
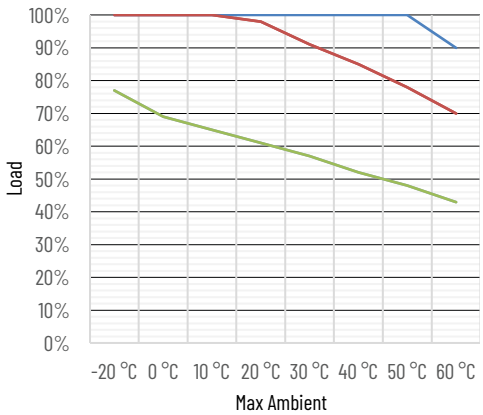
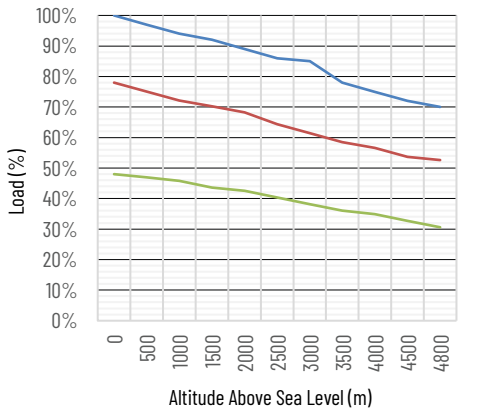
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C170	6	90	170	75	140		
C205	6	110	205	90	170		
C260	6	132	260	110	205		

Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C302	7	160	302	132	260		
C367	7	200	367	160	302		

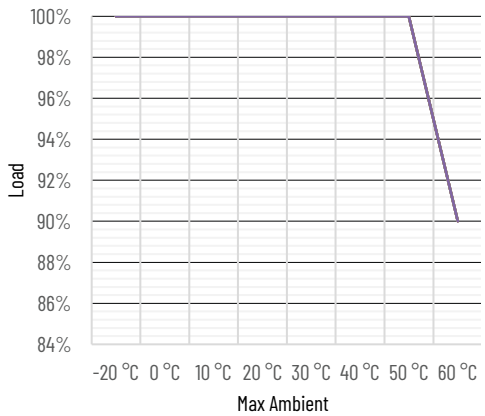
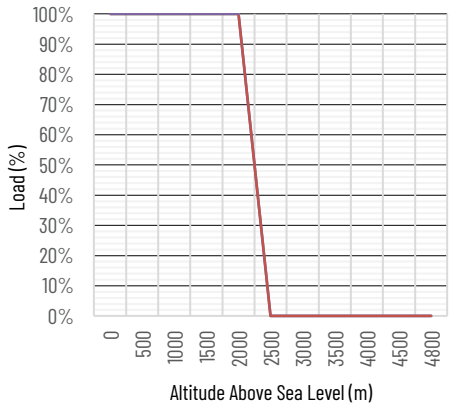
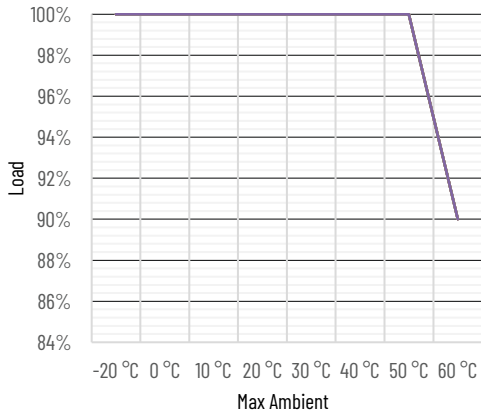
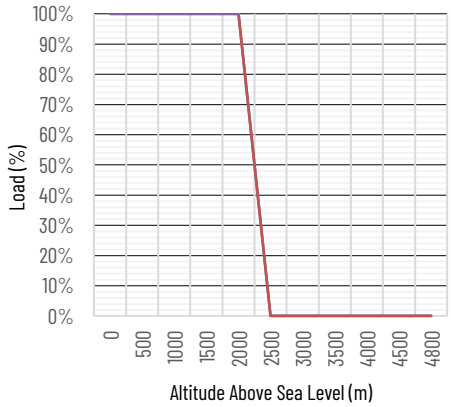
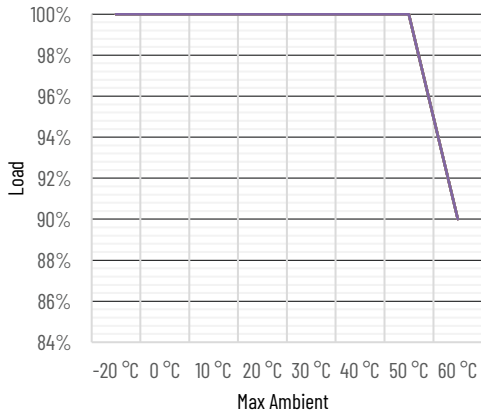
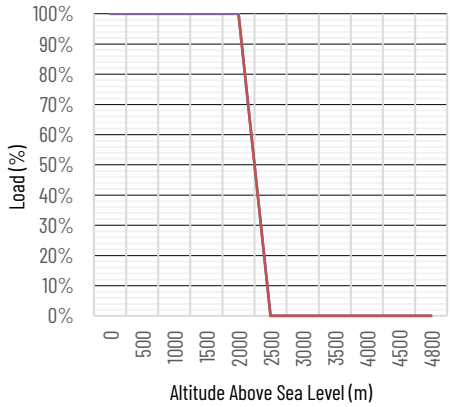
Temperature and Altitude Derating—400V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	400V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		kW	Cont. Amps	kW	Cont. Amps		
C456	7	250	456	200	367		
C477	7	270	477	200	367		

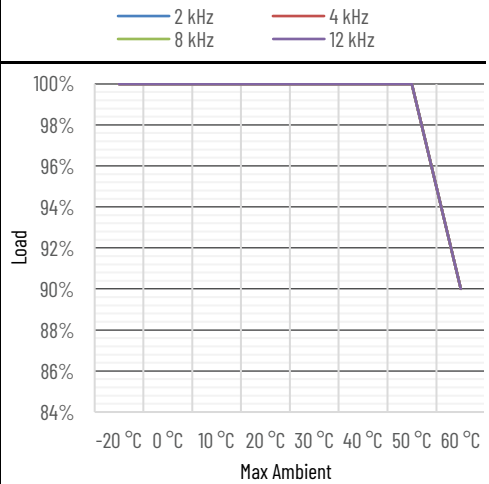
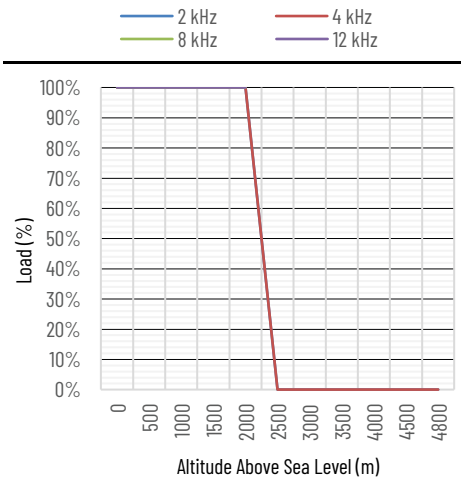
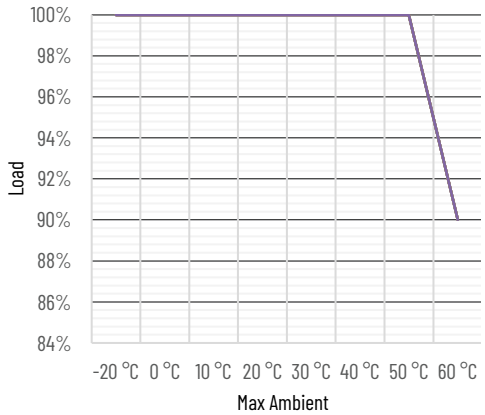
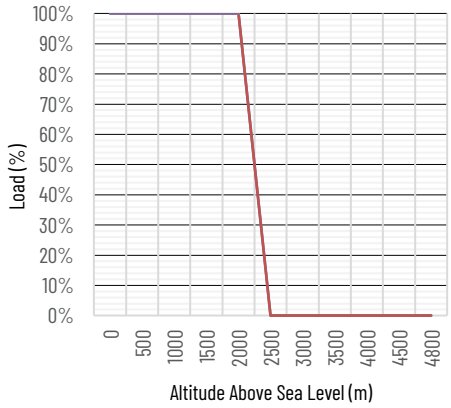
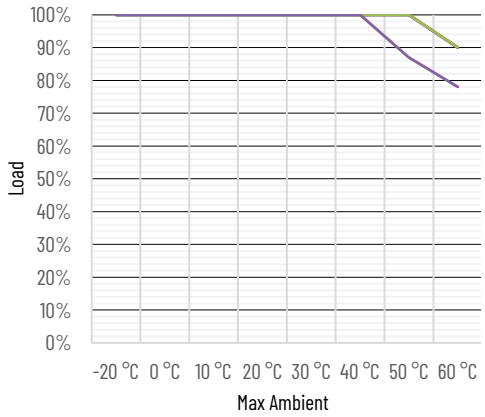
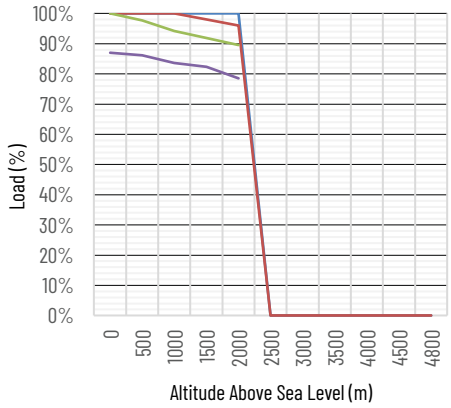
Temperature and Altitude Derating—480V

The following graphs show the ambient temperature and altitude deratings for 480V PowerFlex 755TS products.

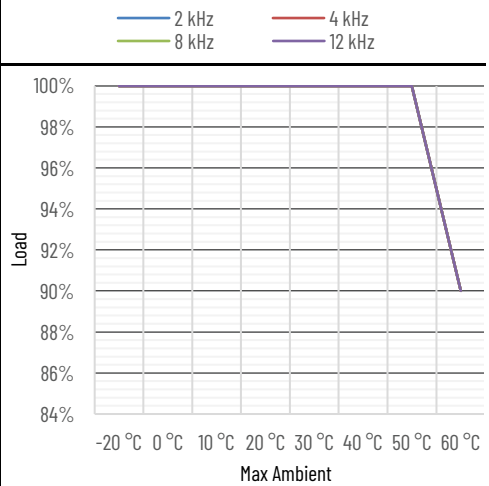
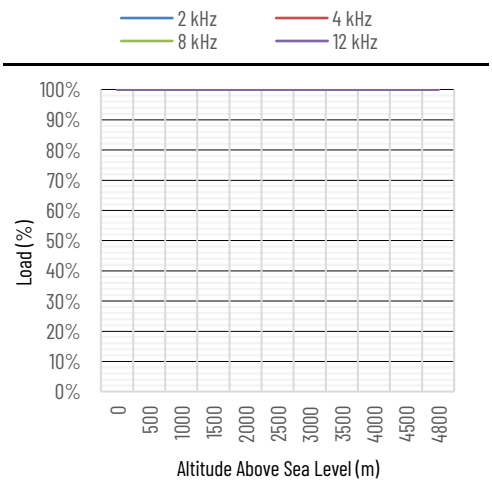
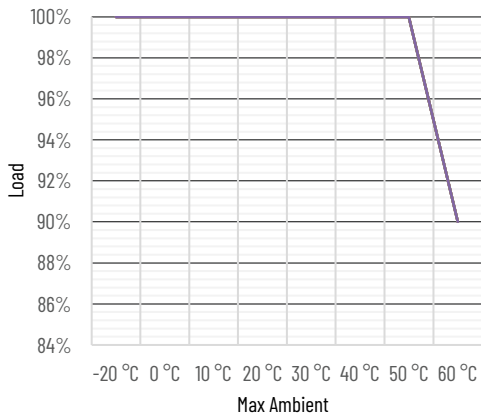
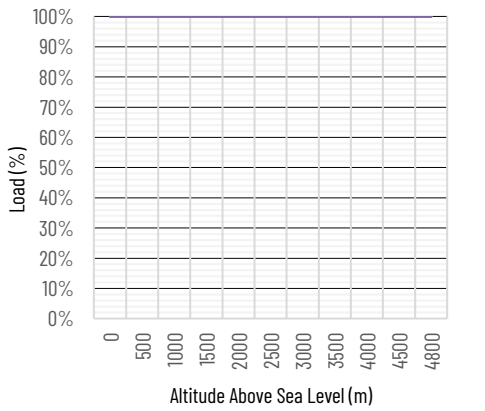
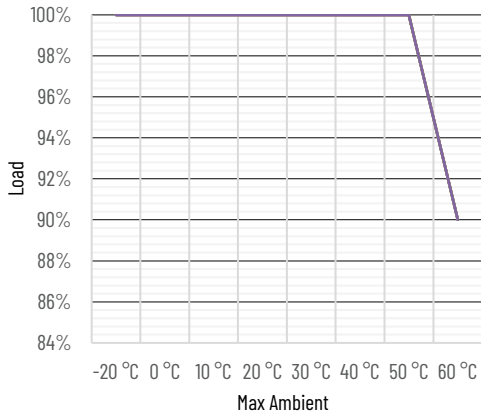
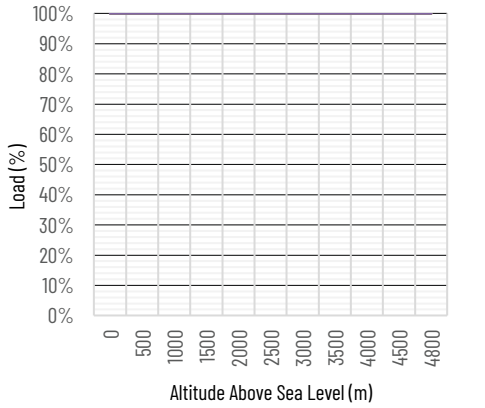
Temperature and Altitude Derating—480V AC Frames 1...7

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps	2 kHz, 4 kHz, 8 kHz, 12 kHz	2 kHz, 4 kHz, 8 kHz, 12 kHz
D2P1	1	1	2.1	0.5	1.1		
D3P4	1	2	3.4	1	2.1		
D5P0	1	3	5	2	3.4		

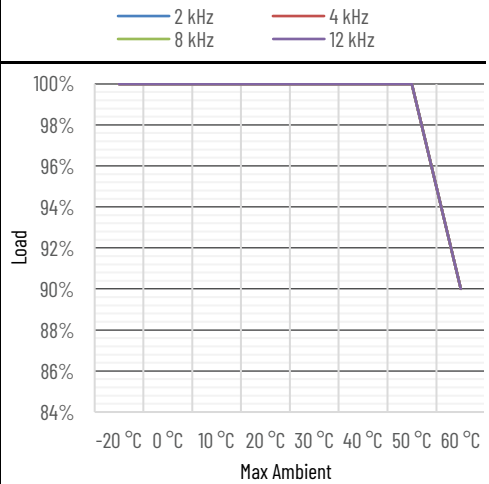
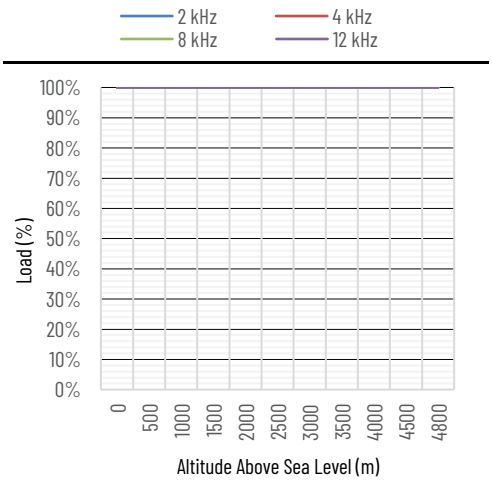
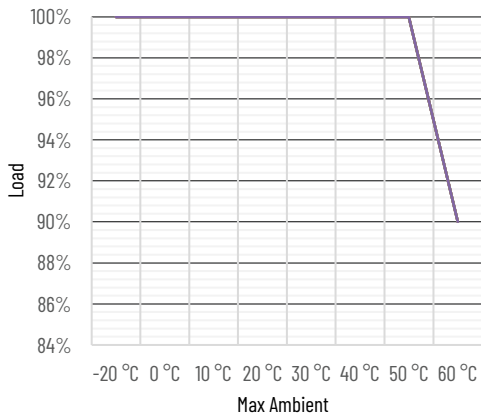
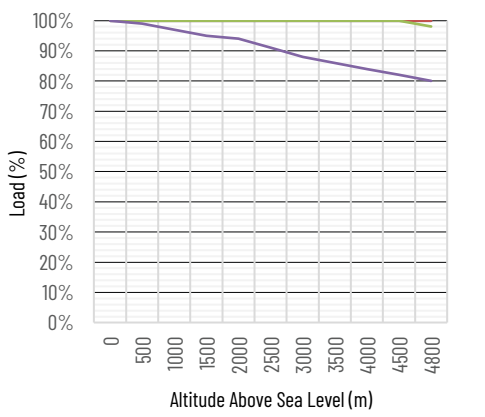
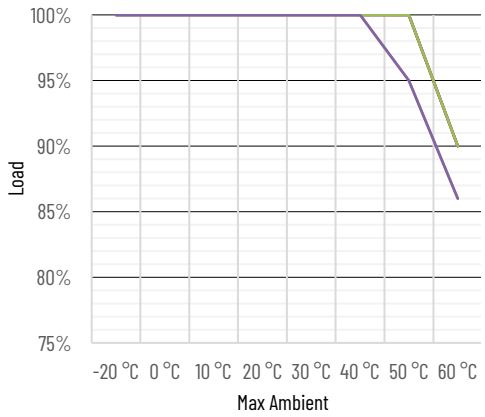
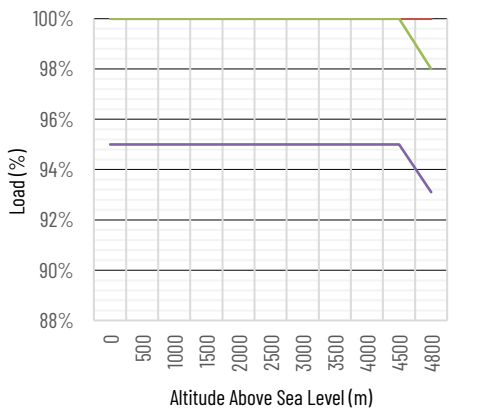
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D8P0	1	5	8	3	5		
D011	1	7.5	11	5	8		
D014	1	10	14	7.5	11		

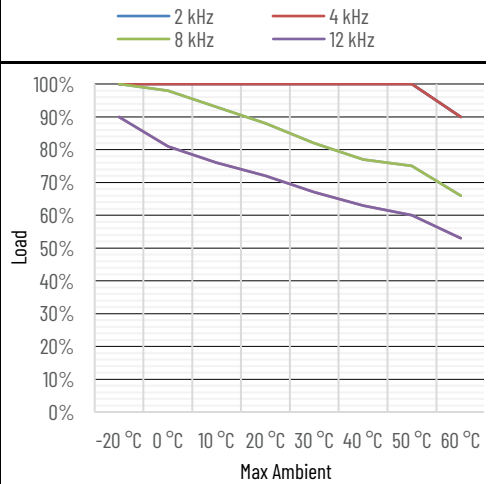
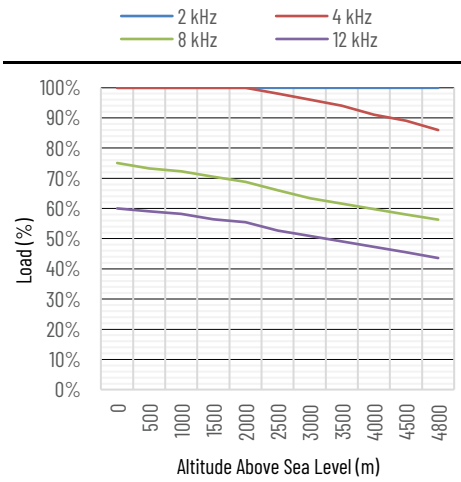
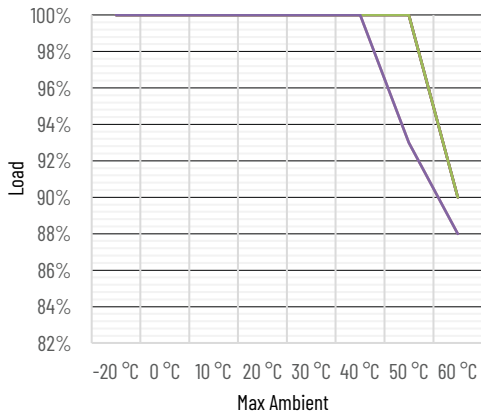
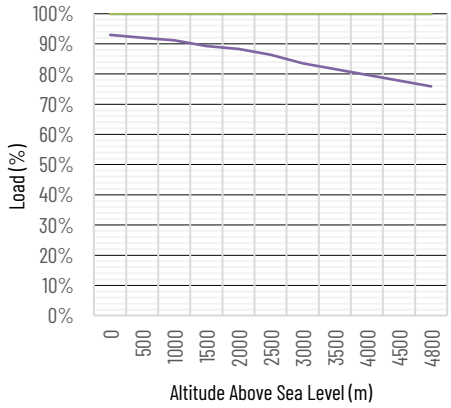
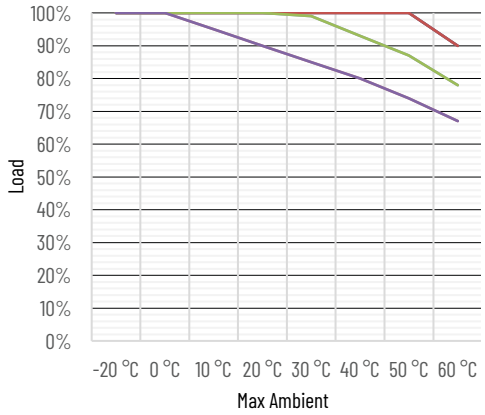
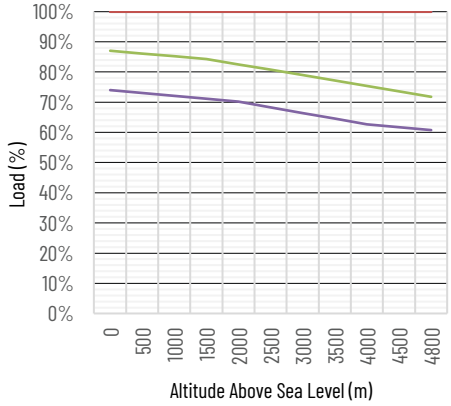
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D2P1	2	1	2.1	1	2.1		
D3P4	2	2	3.4	2	3.4		
D5P0	2	3	5	3	5		

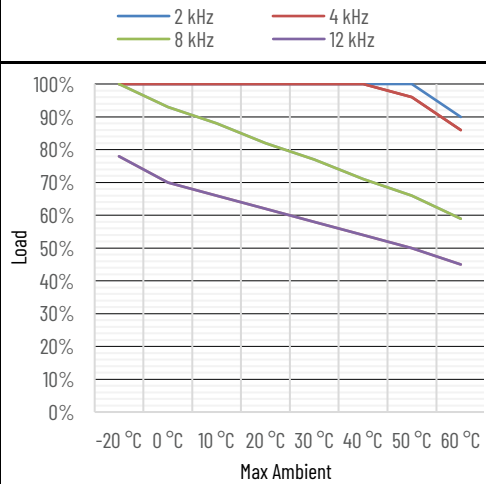
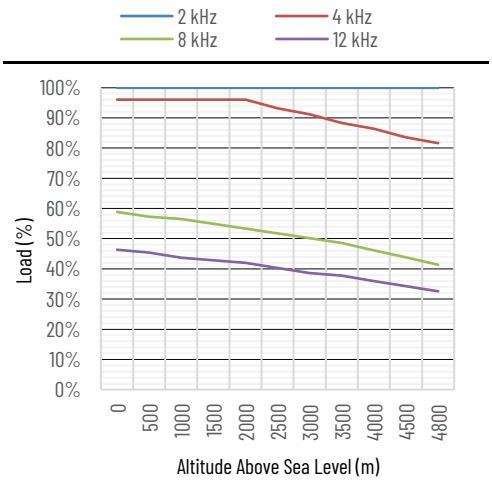
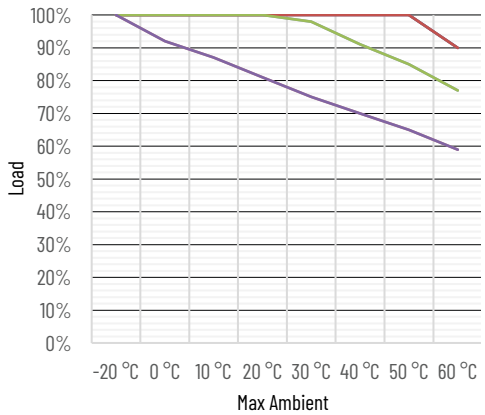
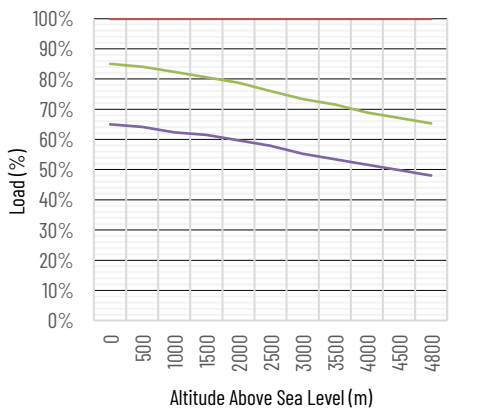
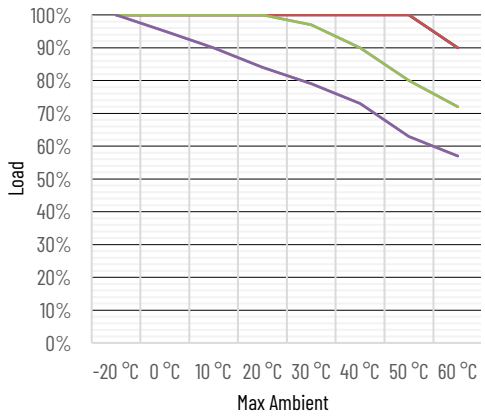
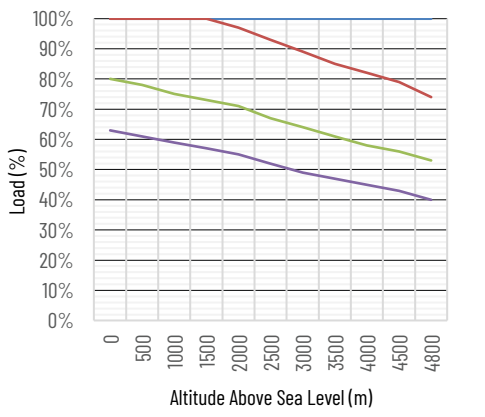
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D8P0	2	5	8	5	8		
D011	2	7.5	11	7.5	11		
D014	2	10	14	7.5	11		

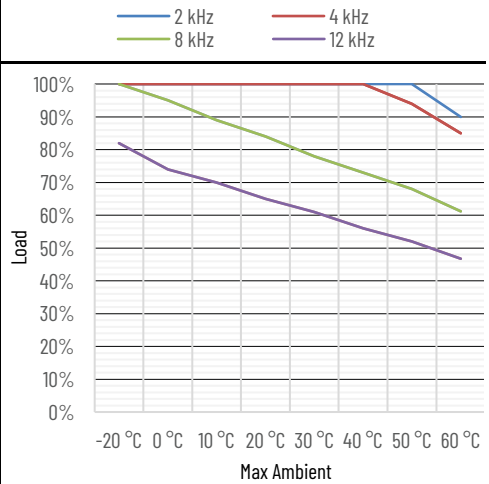
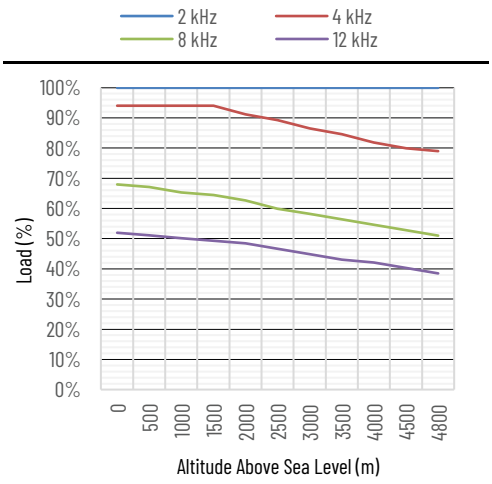
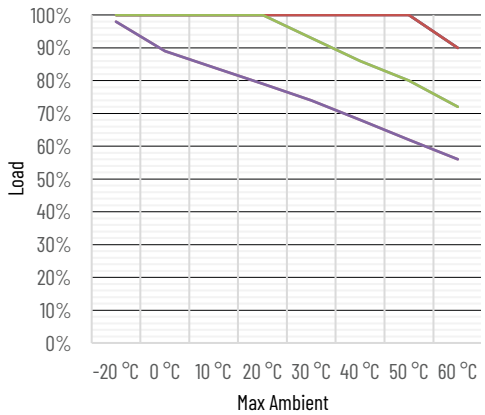
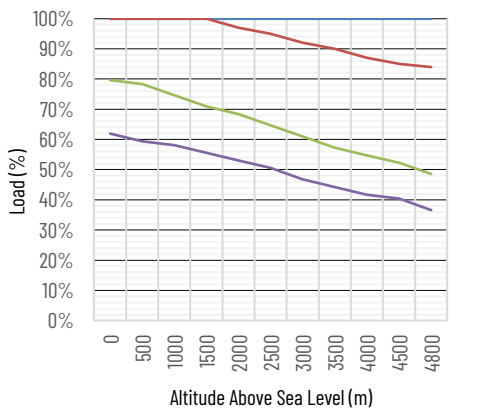
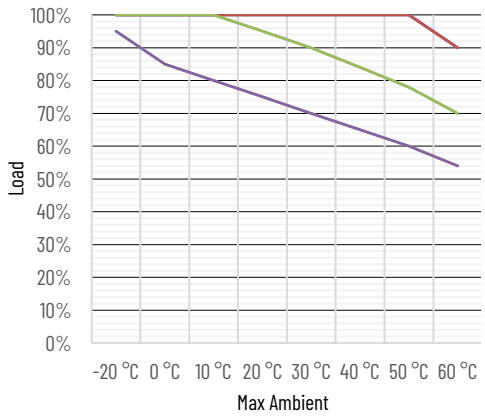
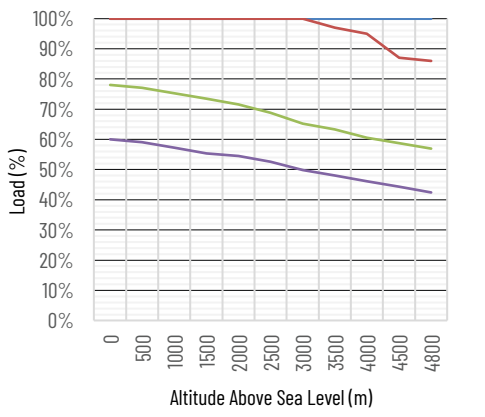
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D022	2	15	22	10	14		
D027	3	20	27	15	22		
D034	3	25	34	20	27		

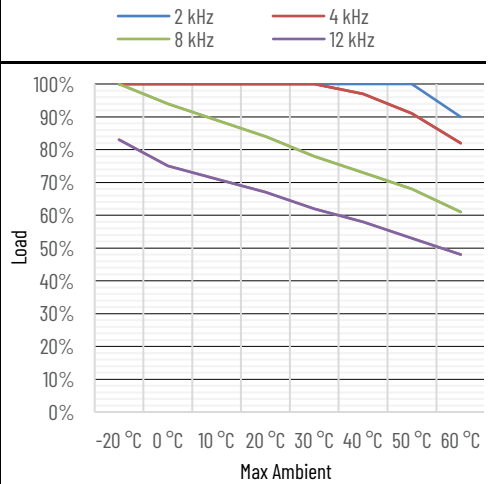
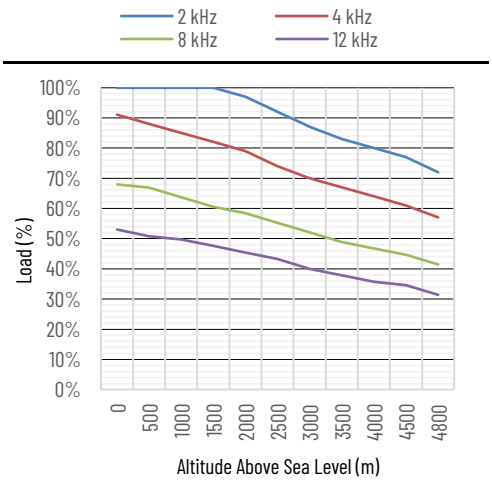
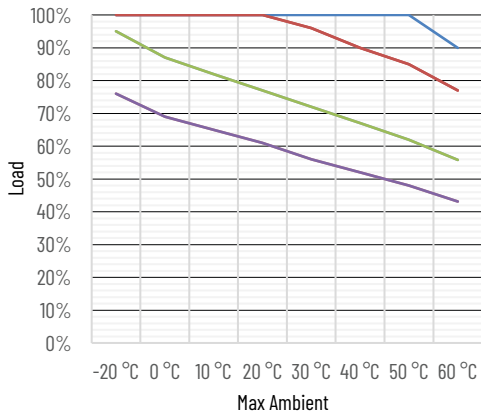
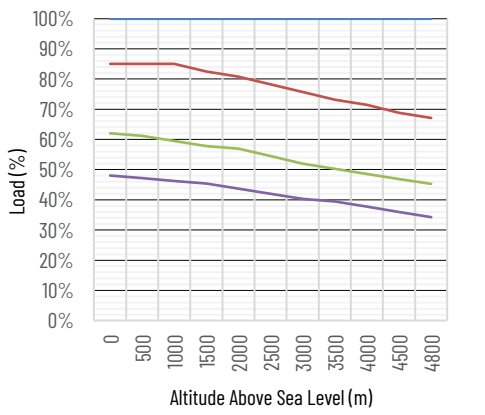
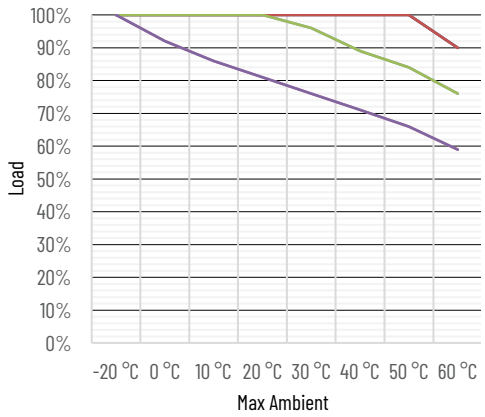
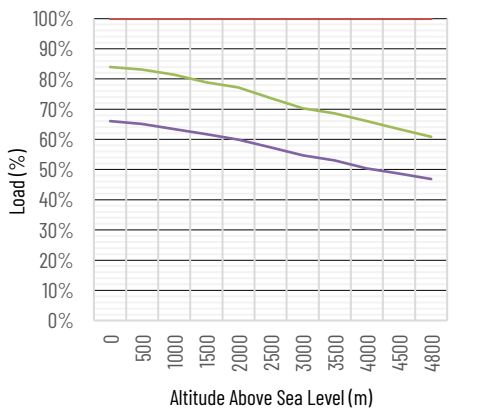
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D040	3	30	40	25	34		
D052	4	40	52	30	40		
D053	3	40	53	30	40		

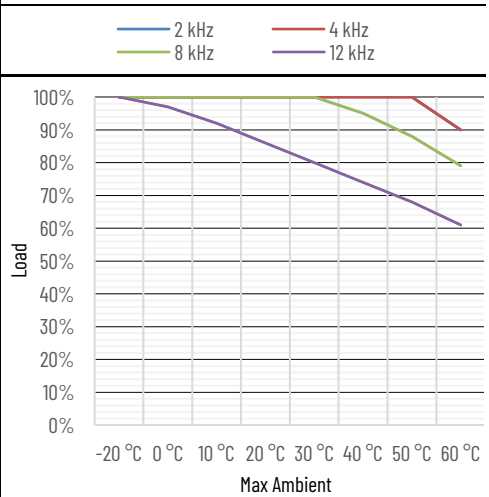
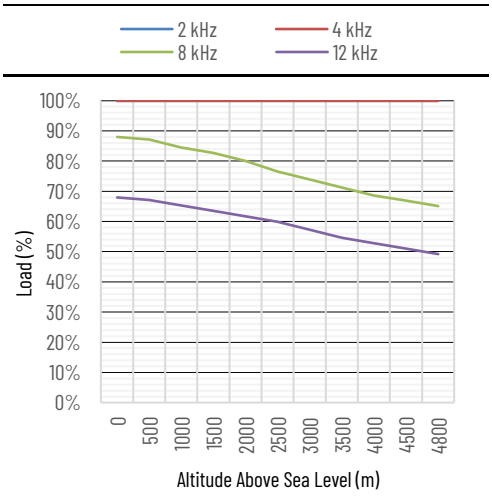
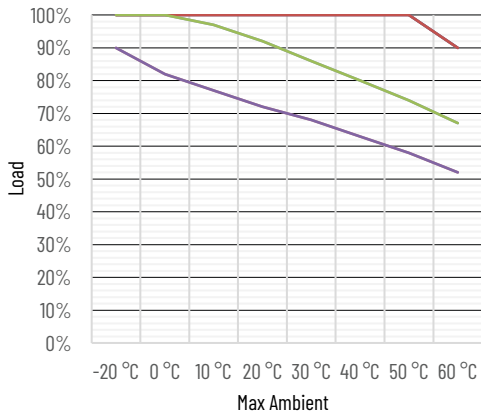
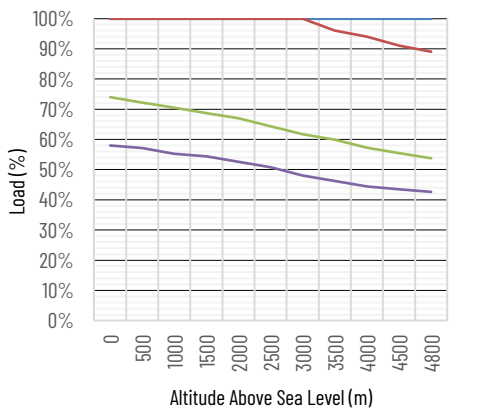
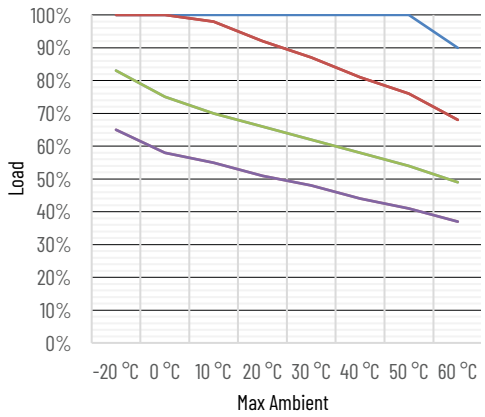
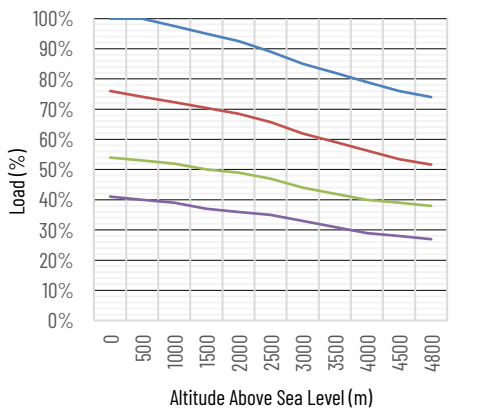
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D065	4	50	65	40	52		
D066	4	50	66	40	52		
D077	5	60	77	50	65		

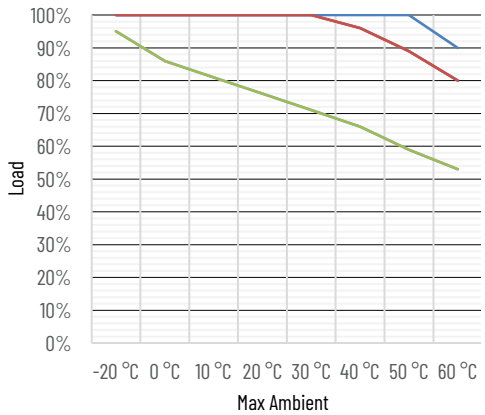
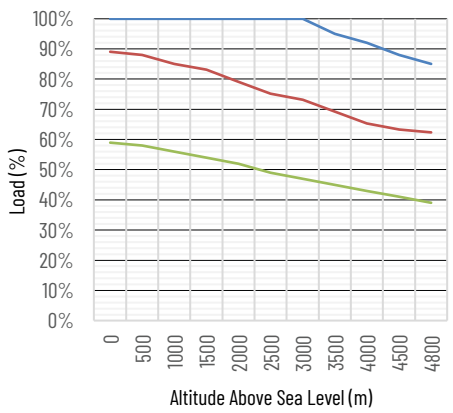
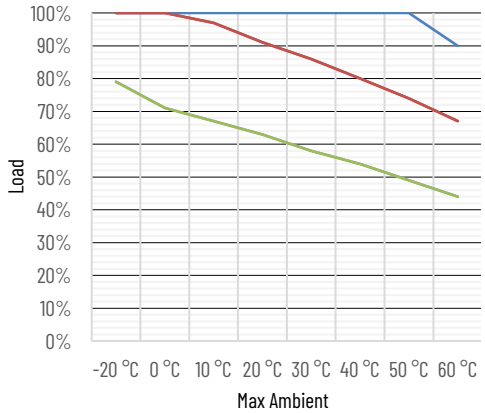
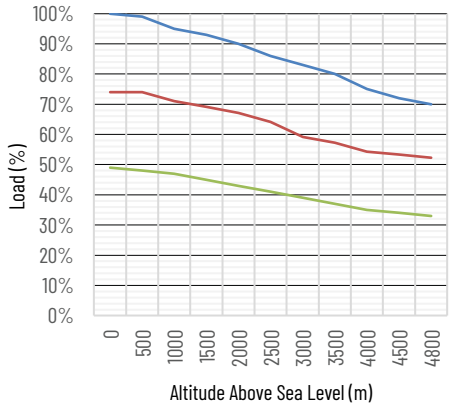
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D078	4	60	78	50	65		
D096	5	75	96	60	77		
D125	6	100	125	75	96		

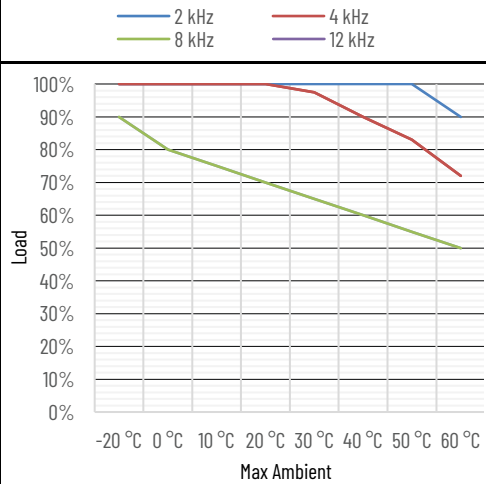
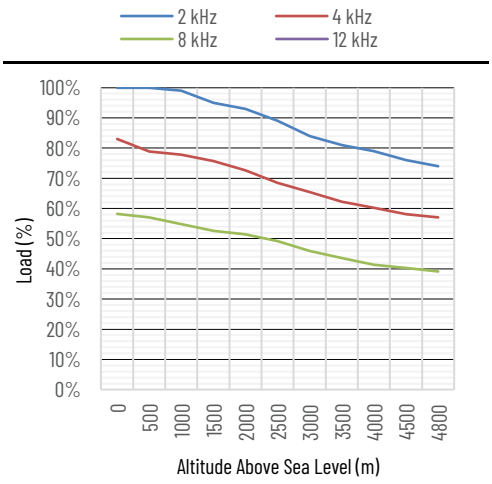
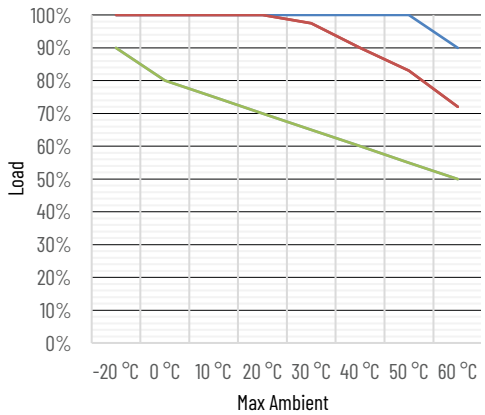
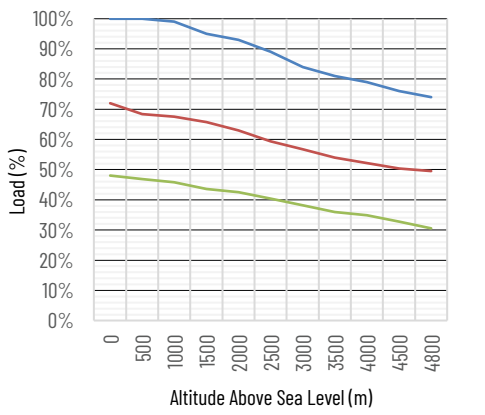
Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D156	6	125	156	100	125		
D186	6	150	186	125	156		
D248	6	200	248	150	186		

Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D302	7	250	302	200	248		
D361	7	300	361	250	302		

Temperature and Altitude Derating—480V AC Frames 1...7 (Continued)

Cat. No. 20G...	Frame	480V AC Power Rating				Derating for IP00, NEMA/UL Open Type	
		Normal Duty		Heavy Duty		Ambient Temperature/Load	Altitude/Load
		Hp	Cont. Amps	Hp	Cont. Amps		
D415	7	350	415	300	361		
D477	7	400	477	300	361		

Minimum Dynamic Brake Resistance

The tables in this section show the minimum dynamic brake resistance when you use the internal dynamic braking transistor.

Brake Resistance for 400/480V Drives

Frame	400V					480V				
	ND kW	Catalog Code	Min Resistance	Max DB Current	Max Duty Cycle	ND Hp	Catalog Code	Min Resistance	Max DB Current	Max Duty Cycle
1	0.75	C2P1	79.0	10	0.453	1.0	D2P1	79.0	10	0.453
	1.5	C3P5	79.0	10	0.453	2.0	D3P4	79.0	10	0.453
	2.2	C5P0	79.0	10	0.453	3.0	D5P0	79.0	10	0.453
	4	C8P7	52.7	15	0.453	5.0	D8P0	52.7	15	0.453
	5.5	C011	31.6	25	0.453	7.5	D011	31.6	25	0.453
	7.5	C015	31.6	25	0.453	10	D014	31.6	25	0.453
2	0.75	C2P1	31.6	25	0.4844	1.0	D2P1	31.6	25	0.4844
	1.5	C3P5	31.6	25	0.4844	2.0	D3P4	31.6	25	0.4844
	2.2	C5P0	31.6	25	0.4844	3.0	D5P0	31.6	25	0.4844
	4	C8P7	31.6	25	0.4844	5.0	D8P0	31.6	25	0.4844
	5.5	C011	31.6	25	0.4844	7.5	D011	31.6	25	0.4844
	7.5	C015	31.6	25	0.4844	10	D014	31.6	25	0.4844
	11	C022	22.6	34.9	0.5603	15	D022	22.6	34.9	0.5603
3	15	C030	31.6	25	0.9857	20	D027	31.6	25	0.9857
	18.5	C037	31.6	25	0.9857	25	D034	31.6	25	0.9857
	22	C043	16.6	47.6	0.9857	30	D040	16.6	47.6	0.9857
	30(1)	C061(1)	15.8	50	0.9857	40(1)	D053(1)	15.8	50	0.9857
4	30	C060	15.8	50	0.9392	40	D052	15.8	50	0.9392
	37	C072	15.8	50	0.9392	50	D065	15.8	50	0.9392
	37(2)	C073(2)	12	65.8	0.9392	50(2)	D066(2)	12	65.8	0.9392
	45	C086	12	65.8	0.9288	60	D078	12	65.8	0.9288
5	37(2)	C075(2)	7.9	100	0.8279	50(2)	D065(2)	7.9	100	0.8279
	45	C085	7.9	100	0.8279	60	D077	7.9	100	0.8279
	55	C104	7.9	100	0.8279	75	D096	7.9	100	0.8279
6	55(2)	C104(2)	3.3	239.4	0.912	75(2)	D096(2)	3.3	239.4	0.912
	75	C140	3.3	239.4	0.912	100	D125	3.3	239.4	0.912
	90	C170	3.3	239.4	0.912	125	D156	3.3	239.4	0.912
	110	C205	3.3	239.4	0.912	150	D186	3.3	239.4	0.912
	132	C260	3.3	239.4	0.912	200	D248	3.3	239.4	0.912
7	132(2)	C260(2)	2.4	329	0.78	200(2)	D248(2)	2.4	329	0.78
	160	C302	2.4	329	0.78	250	D302	2.4	329	0.78
	200	C367	2.4	329	0.78	300	D361	2.4	329	0.78
	250	C456	1.65	478.8	0.78	350	D415	1.65	478.8	0.78
	270	C477	1.65	478.8	0.78	400	D477	1.65	478.8	0.78

(1) IP20/IP00, NEMA/UL Open Type (enclosure code N).
(2) IP54, NEMA/UL Type 12 (enclosure code G).

Fuse and Circuit Breaker Ratings

The tables in this section provide recommended AC line input fuse and circuit breaker information. See the following Fuses and Circuit Breakers sections for CE and UL requirements. The size recommendations are based on 40 °C (104 °F) and the U.S. NEC. Other country, state, or local codes can require different ratings. DC link fuse recommendations for DC input drives are also provided.

Fuses

The recommended fuse types are listed here. Select a fuse rating within the range specified in the tables starting on page 66

- CE — Type gG fuses
- UL — Fast-acting Class J, T

IMPORTANT For maximum protection of the drive and its internal components, we recommend the use of fuses to other methods of circuit protection. Fuses reduce the risk of drive damage from power quality events and improves machine and process utilization.

Circuit Breakers

The non-fuse listings in the following tables include inverse time circuit breakers, and 140M/140MT self-protected combination motor controllers. If one of these methods are chosen for protection, the following requirements apply, for both UL and CE installations:

- 140M/140MT self-protected combination motor controllers are acceptable if the installation conforms with the requirements specified in the tables.
- Inverse time circuit breakers shall only be used with a fuse specified in the tables.

400 Volt AC and 540 Volt DC Input Protection Devices—Drive Frames 1...7

Applied Rating [1]	Frame [2]	Cont. Output Amps	Sized For Normal Duty			Sized For Heavy Duty			Input Quantities		AC Input Protection Devices						Input Quantities	DC Input Protection [12]	
			Cat. No.	Output Overload Amps		Cat. No.	Output Overload Amps		Cont. AC Input		Fuse		Circuit Breaker [6]		140M/140MT Type E Combination Motor Controller with Adjustable Current Range [7] [8]		Cont. DC Input	Fuse Cat. No. 20-750-...	Fuse Holder Cat. No. 20-750-...
kW				1 Min	3 s		1 Min	3 s	kVA	Amps	Min [A] [4]	Max [A] [5]	Max [A]	Min. Encl. Vol. [in.^{3}]	Cat. No.	Min Enclosure Volume [in.^{3}] [11]	Amps		
400 Volt AC Input																	**540 Volt DC Input**		
0.37	1	1.3				20G...C2P1	2.3	3.2	0.8	1.2	2	4	15	–	M-xxx-B25 [9]	3242	1.4	DCFUSE1-10A	DCFH-51
0.75	1	2.1	20G...C2P1	2.3	3.2	20G...C3P5	3.9	5.3	1.3	1.9	3	6	15	–	M-xxx-B25 [9]	3242	2.2	DCFUSE1-10A	DCFH-51
1.5	1	3.5	20G...C3P5	3.9	5.3	20G...C5P0	5.5	7.5	2.1	3.1	4	10	15	–	M-xxx-B40 [9]	3242	3.7	DCFUSE1-10A	DCFH-51
2.2	1	5.0	20G...C5P0	5.5	7.5				3.1	4.5	6	10	20	–	M-xxx-B63 [9]	3242	5.3	DCFUSE1-10A	DCFH-51
						20G...C8P7	9.6	13.1	3.1	4.5	6	15	20	–	M-xxx-B63 [9]	3242	5.3	DCFUSE1-10A	DCFH-51
4.0	1	8.7	20G...C8P7	9.6	13.1	20G...C011	13.1	17.3	5.4	7.8	10	20	30	–	M-xxx-C10 [9]	3242	9.2	DCFUSE1-16A	DCFH-51
5.5	1	11.5	20G...C011	12.7	17.3	20G...C015	17.3	23.1	7.1	10.3	15	25	45	–	M-xxx-C16 [10]	3242	12.2	DCFUSE1-20A	DCFH-51
7.5	1	15.4	20G...C015	16.9	23.1				9.6	13.8	20	30	60	–	M-xxx-C20 [10]	3242	16.3	DCFUSE1-25A	DCFH-51
0.75	2	2.1	20G...C2P1	3.1	3.7	20G...C2P1	3.1	3.7	1.3	1.9	3	4	15	–	M-xxx-B25 [9]	3242	2.2	DCFUSE1-10A	DCFH-51
1.5	2	3.5	20G...C3P5	5.2	6.3	20G...C3P5	5.2	6.3	2.1	3.1	4	7	15	–	M-xxx-B40 [9]	3242	3.7	DCFUSE1-10A	DCFH-51
2.2	2	5.0	20G...C5P0	7.5	9.0	20G...C5P0	7.5	9.0	3.1	4.5	6	10	20	–	M-xxx-B63 [9]	3242	5.3	DCFUSE1-10A	DCFH-51
4.0	2	8.7	20G...C8P7	13.0	15.6	20G...C8P7	13.0	15.6	5.4	7.8	10	15	30	–	M-xxx-C10 [10]	3242	9.2	DCFUSE1-16A	DCFH-51
5.5	2	11.5	20G...C011	17.2	20.7	20G...C011	17.2	20.7	7.1	10.3	15	20	45	–	M-xxx-C16 [10]	3242	12.2	DCFUSE1-20A	DCFH-51
						20G...C015	17.3	23.1	7.1	10.3	15	20	45	–	M-xxx-C16 [10]	3242	12.2	DCFUSE1-20A	DCFH-51
7.5	2	15.4	20G...C015	16.9	23.1	20G...C022	24.3	33.0	9.6	13.8	20	30	60	–	M-xxx-C20 [10]	3242	16.3	DCFUSE1-25A	DCFH-51
11	2	22	20G...C022	24.2	33.0				13.6	19.7	25	45	80	–	M-F8E-C25	3242	23.2	DCFUSE1-40A	DCFH-NH1
	3					20G...C030	33.0	45.0	13.6	19.7	25	45	80	–	M-F8E-C25	4052	23.2	DCFUSE1-40A	DCFH-NH1
15	3	30	20G...C030	33.0	45.0	20G...C037	45.0	55.5	18.6	26.9	35	60	100	–	M-F8E-C32	4052	31.7	DCFUSE3-63A	DCFH-NH1
18.5	3	37	20G...C037	40.7	55.5	20G...C043	55.5	66.6	22.9	33.1	45	70	110	–	M-F8E-C45	4052	39.1	DCFUSE3-63A	DCFH-NH1
22	3	43	20G...C043	47.3	64.5	20G...C060 [3]	66.0	90.0	26.7	38.5	50	90	120	–	–	–	45.4	DCFUSE3-80A	DCFH-NH1
						20G...C061	66.0	90.0	26.7	38.5	50	90	120	–	–	–	45.4	DCFUSE3-125A	DCFH-NH1
30	4	60	20G...C060	66.0	90.0	20G...C072	90.0	108.0	37.2	53.7	70	100	180	–	–	–	63.4	DCFUSE3-125A	DCFH-NH1
						20G...C073	90.0	108.0	37.2	53.7	70	100	180	–	–	–	63.4	DCFUSE3-125A	DCFH-NH1
	3	61	20G...C061	67.1	91.5				37.8	54.6	70	100	180	–	–	–	64.5	DCFUSE3-125A	DCFH-NH1
37	4	72	20G...C072	79.2	108.0	20G...C086	108.0	129.6	44.6	64.4	80	125	200	–	–	–	76.1	DCFUSE3-125A	DCFH-NH1
	5					20G...C085	108.0	129.6	44.6	64.4	80	125	200	–	–	–	76.1	DCFUSE3S-160A	DCFH-NH1
	4	73	20G...C073	80.3	109.5				45.2	65.3	80	125	200	–	–	–	77.1	DCFUSE3-125A	DCFH-NH1
45	5	85	20G...C085	93.5	127.5	20G...C104	127.5	156.0	52.7	76.1	100	150	250	–	–	–	89.8	DCFUSE3S-160A	DCFH-NH1
	4	86	20G...C086	94.6	129.0				53.3	77.0	100	150	250	–	–	–	90.9	DCFUSE3-160A	DCFH-NH1
55	5	104	20G...C104	114.4	156.0	20G...C140 [3]	156.0	210.0	64.5	93.1	125	200	300	–	–	–	109.9	DCFUSE3S-200A	DCFH-NH1

400 Volt AC and 540 Volt DC Input Protection Devices—Drive Frames 1...7 (Continued)

Applied Rating (1)	Frame (2)	Cont. Output Amps	Sized For Normal Duty			Sized For Heavy Duty			Input Quantities		AC Input Protection Devices						Input Quantities	DC Input Protection (12)	
			Cat. No.	Output Overload Amps		Cat. No.	Output Overload Amps		Cont. AC Input		Fuse		Circuit Breaker (6)		140M/140MT Type E Combination Motor Controller with Adjustable Current Range (7) (8)		Cont. DC Input	Fuse Cat. No. 20-750-...	Fuse Holder Cat. No. 20-750-...
kW				1 Min	3 s		1 Min	3 s	kVA	Amps	Min [A](4)	Max [A](5)	Max [A]	Min. Encl. Vol. [in.3]	Cat. No.	Min Enclosure Volume [in.3] (11)	Amps		
400 Volt AC Input																	**540 Volt DC Input**		
75	6	140	20G...C140	154.0	210.0	20G...C170	210.0	255.0	88.9	128.3	175	300	400	–	–	–	151.4	DCFUSE3S-315A	DCFH-NH1
90	6	170	20G...C170	187.0	255.0	20G...C205	255.0	307.5	107.9	155.8	200	300	500	–	–	–	183.9	DCFUSE3S-315A	DCFH-NH1
110	6	205	20G...C205	225.0	307.5	20G...C260	307.5	390.0	130.1	187.8	250	400	600	–	–	–	221.7	DCFUSE3S-400A	DCFH-NH1
132	6	260	20G...C260	286.0	390.0				165.0	238.2	300	500	700	–	–	–	281.2	DCFUSE5S-500A	DCFH-NH2
	7					20G...C302	390.0	468.0	165.0	238.2	300	500	700	–	–	–	281.2	DCFUSE6S-500A	DCFH-NH3
160	7	302	20G...C302	332.2	453.0	20G...C367	453.0	550.5	191.7	276.7	350	600	900	–	–	–	326.7	DCFUSE6S-550A	DCFH-NH3
200	7	367	20G...C367	403.5	550.5	20G...C456	550.5	684.0	232.9	336.2	450	700	1100	–	–	–	397.0	DCFUSE6S-700A	DCFH-NH3
						20G...C477	550.5	684.0	232.9	336.2	450	700	1100	–	–	–	397.0	DCFUSE6S-700A	DCFH-NH3
250	7	456	20G...C456	501.6	684.0				289.5	417.8	600	800	1300	–	–	–	493.2	DCFUSE6S-900A	DCFH-NH3
270	7	477	20G...C477	524.7	715.5				302.8	437.0	600	800	1300	–	–	–	516.0	DCFUSE6S-900A	DCFH-NH3

(1) Applied rating refers to the motor that is connected to the drive. For example, a C022 drive can be used in Normal Duty mode on an 11 kW motor, or in Heavy Duty mode on a 7.5 kW motor. A C015 drive can be used in Heavy Duty mode on a 5.5 kW motor with the same ratings as a C011 drive. The drive can be programmed for either mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current when compared to Heavy Duty mode. See parameter 0:36 [Duty Rating Cfg].
(2) Only enclosure codes F, N, and R. See Product Rating Cross-reference in PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119, for frame sizes of other enclosure types.
(3) This drive is the next larger frame size.
(4) For UL compliance - fast-acting class J (Bussmann DFJ) or fast-acting class T (Bussmann JJS) fuses only. Equivalent fuses of class J, T may be used if they have lower I_{peak} and I^2t ratings than the Bussmann JJS fuse. For CE compliance - type gR fuses (Bussmann 170M - size 00 to 3, IEC 60269 or DIN 43620, or FWP-_G10F, _G14F, _G22F) only. Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping. Max. source SCCR = 100 kA.
(5) For UL compliance - fast-acting class J (Bussmann DFJ) or fast-acting class T (Bussmann JJS) fuses only. Equivalent fuses of class J, T may be used if they have lower I_{peak} and I^2t ratings than the Bussmann JJS fuse. For CE compliance - type gR fuses (Bussmann 170M - size 00 to 3, IEC 60269 or DIN 43620, or FWP-_G10F, _G14F, _G22F) only. Maximum protection device size is the highest rated device that supplies drive protection. Max. source SCCR = 100 kA.
(6) Circuit breaker - inverse time breaker - must be used with a fuse specified in the table. For US NEC, minimum circuit breaker size is 125% of motor FLA. Ratings that are shown are maximum values.
(7) Bulletin 140M/140MT with adjustable current range must have the current trip set to the minimum range so that the device does not trip.
(8) Bulletin 140M/140MT is UL Listed for 480Y/277V. Not UL Listed for use on 400V or 480V Delta/Delta, corner ground, or high-resistance ground systems.
(9) Bulletin 140M/140MT must be Frame C (140M-C2E-xxx or 140MT-C3E-xxx) or Frame D (140M-D8E-xxx or 140MT-D9E-xxx). Max. source SCCR = 65 kA.
(10) Bulletin 140M/140MT must be Frame D (140M-D8E-xxx or 140MT-D9E-xxx) or Frame F (140M-F8E-xxx). Max. source SCCR = 65 kA.
(11) When using the Bulletin 140M/140MT, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application-specific thermal considerations can require a larger enclosure.
(12) DC fuses specified are UL recognized and CE compliant.

480 Volt AC and 650 Volt DC Input Protection Devices—Drive Frames 1...7

Applied Rating (1)	Frame (2)	Cont. Output Amps	Sized For Normal Duty			Sized For Heavy Duty			Input Quantities		AC Input Protection Devices						Input Quantities	DC Input Protection (12)	
			Cat. No.	Output Overload Amps		Cat. No.	Output Overload Amps		Cont. AC Input		Fuse		Circuit Breaker (6)		140M/140MT Type E Combination Motor Controller with Adjustable Current Range (7) (8)		Cont. DC Input	Fuse Cat. No. 20-750-...	Fuse Holder Cat. No. 20-750-...
Hp				1 Min	3 s		1 Min	3 s	kVA	Amps	Min [A](4)	Max [A](5)	Max [A]	Min. Encl. Vol. [in.3]	Cat. No.	Min Enclosure Volume [in.3] (11)	Amps		
480 Volt AC Input																	650 Volt DC Input		
0.5	1	1.1				20G...D2P1	2.3	3.2	0.8	1.0	2	2	15	–	M-xxx-B25 (9)	3242	1.2	DCFUSE1-10A	DCFH-51
1.0	1	2.1	20G...D2P1	2.3	3.2	20G...D3P4	3.7	5.1	1.6	1.9	3	4	15	–	M-xxx-B25 (9)	3242	2.2	DCFUSE1-10A	DCFH-51
2.0	1	3.4	20G...D3P4	3.7	5.1	20G...D5P0	5.5	7.5	2.6	3.1	4	7	15	–	M-xxx-B40 (9)	3242	3.6	DCFUSE1-10A	DCFH-51
3.0	1	5.0	20G...D5P0	5.5	7.5	20G...D8P0	8.8	12.0	3.7	4.5	6	15	20	–	M-xxx-B63 (9)	3242	5.3	DCFUSE1-10A	DCFH-51
5.0	1	8.0	20G...D8P0	8.8	12.0	20G...D011	12.1	16.5	6.0	7.2	9	15	30	–	M-xxx-C10 (9)	3242	8.5	DCFUSE1-16A	DCFH-51
7.5	1	11	20G...D011	12.1	16.5	20G...D014	16.5	21.0	8.2	9.9	12	20	40	–	M-xxx-C16 (10)	3242	11.7	DCFUSE1-20A	DCFH-51
10	1	14	20G...D014	15.4	21.0				10.5	12.6	15	30	50	–	M-xxx-C16 (10)	3242	14.9	DCFUSE1-25A	DCFH-51
1.0	2	2.1	20G...D2P1	3.1	3.7	20G...D2P1	3.1	3.7	1.6	1.9	3	4	15	–	M-xxx-B25 (9)	3242	2.2	DCFUSE1-10A	DCFH-51
2.0	2	3.4	20G...D3P4	5.1	6.1	20G...D3P4	5.1	6.1	2.6	3.1	4	7	15	–	M-xxx-B40 (9)	3242	3.6	DCFUSE1-10A	DCFH-51
3.0	2	5.0	20G...D5P0	7.5	9.0	20G...D5P0	7.5	9.0	3.7	4.5	6	10	20	–	M-xxx-B63 (9)	3242	5.3	DCFUSE1-10A	DCFH-51
5.0	2	8.0	20G...D8P0	12.0	14.4	20G...D8P0	12.0	14.4	6.0	7.2	9	15	30	–	M-xxx-C10 (10)	3242	8.5	DCFUSE1-16A	DCFH-51
7.5	2	11	20G...D011	16.5	19.8	20G...D011	16.5	19.8	8.2	9.9	12	20	40	–	M-xxx-C16 (10)	3242	11.7	DCFUSE1-20A	DCFH-51
						20G...D014	16.5	21.0	8.2	9.9	12	20	40	–	M-xxx-C16 (10)	3242	11.7	DCFUSE1-20A	DCFH-51
10	2	14	20G...D014	15.4	21.0	20G...D022	21.0	33.0	10.5	12.6	15	30	50	–	M-xxx-C16 (10)	3242	14.9	DCFUSE1-25A	DCFH-51
15	2	22	20G...D022	24.2	33.0				16.5	19.9	25	45	80	–	M-F8E-C25	3242	23.5	DCFUSE3-40A	DCFH-NH1
	3					20G...D027	33.0	40.5	16.5	19.9	25	45	80	–	M-F8E-C25	4052	23.5	DCFUSE3-40A	DCFH-NH1
20	3	27	20G...D027	29.7	40.5	20G...D034	40.5	51.0	20.3	24.4	30	50	100	–	M-F8E-C32	4052	28.8	DCFUSE3-50A	DCFH-NH1
25	3	34	20G...D034	37.4	51.0	20G...D040	51.0	61.2	25.5	30.7	40	60	100	–	M-F8E-C45	4052	36.2	DCFUSE3-63A	DCFH-NH1
30	3	40	20G...D040	44.0	60.0	20G...D053	60.0	78.0	30.0	36.1	45	80	120	–	M-F8E-C45	4052	42.6	DCFUSE3-70A	DCFH-NH1
	4					20G...D052	60.0	78.0	30.0	36.1	45	80	120	–	M-F8E-C45	4863	42.6	DCFUSE3-70A	DCFH-NH1
40	4	52	20G...D052	57.2	78.0	20G...D065	78.0	97.5	39.1	47.0	60	100	150	–	–	–	55.4	DCFUSE3-100A	DCFH-NH1
						20G...D066	78.0	97.5	39.1	47.0	60	100	150	–	–	–	55.4	DCFUSE3-100A	DCFH-NH1
	3	53	20G...D053	58.3	79.5				39.8	47.9	60	100	150	–	–	–	56.5	DCFUSE3-100A	DCFH-NH1
50	4	65	20G...D065	71.5	97.5	20G...D078	97.5	117.0	48.8	58.7	80	125	175	–	–	–	69.3	DCFUSE3-125A	DCFH-NH1
	5					20G...D077	97.5	117.0	48.8	58.7	80	125	175	–	–	–	69.3	DCFUSE3S-160A	DCFH-NH1
	4	66	20G...D066	72.5	99.0				49.6	59.6	80	125	175	–	–	–	70.4	DCFUSE3-125A	DCFH-NH1
60	5	77	20G...D077	84.7	115.5	20G...D096	115.5	144.0	57.8	69.5	90	150	225	–	–	–	82.1	DCFUSE3S-160A	DCFH-NH1
	4	78	20G...D078	85.8	117.0				58.5	70.4	90	150	225	–	–	–	83.2	DCFUSE3-125A	DCFH-NH1
75	5	96	20G...D096	105.6	144.0	20G...D125(3)	144.0	187.5	72.1	86.7	110	200	275	–	–	–	102.3	DCFUSE3S-200A	DCFH-NH1
100	6	125	20G...D125	137.5	187.5	20G...D156	187.5	234.0	96.0	115.5	150	250	375	–	–	–	136.4	DCFUSE3S-315A	DCFH-NH1

480 Volt AC and 650 Volt DC Input Protection Devices—Drive Frames 1...7 (Continued)

Applied Rating (1)	Frame (2)	Cont. Output Amps	Sized For Normal Duty			Sized For Heavy Duty			Input Quantities		AC Input Protection Devices						Input Quantities	DC Input Protection (12)	
			Cat. No.	Output Overload Amps		Cat. No.	Output Overload Amps		Cont. AC Input		Fuse		Circuit Breaker (6)		140M/140MT Type E Combination Motor Controller with Adjustable Current Range (7) (8)		Cont. DC Input	Fuse Cat. No. 20-750-...	Fuse Holder Cat. No. 20-750-...
Hp				1 Min	3 s		1 Min	3 s	kVA	Amps	Min [A](4)	Max [A](5)	Max [A]	Min. Encl. Vol. [in.^{3}]	Cat. No.	Min Enclosure Volume [in.^{3}] (11)	Amps		
480 Volt AC Input																	**650 Volt DC Input**		
125	6	156	20G...D156	171.6	234.0	20G...D186	234.0	280.8	119.9	144.2	200	300	450	–	–	–	170.2	DCFUSE3S-315A	DCFH-NH1
150	6	186	20G...D186	204.6	279.0	20G...D248	279.0	372.0	142.9	171.9	225	400	550	–	–	–	203.0	DCFUSE3S-400A	DCFH-NH1
200	6	248	20G...D248	272.8	372.0				190.6	229.2	300	450	700	–	–	–	270.6	DCFUSE5S-500A	DCFH-NH2
	7					20G...D302	372.0	453.0	190.6	229.2	300	450	700	–	–	–	270.6	DCFUSE6S-500A	DCFH-NH3
250	7	302	20G...D302	332.2	453.0	20G...D361	453.0	543.6	232.0	279.1	350	600	900	–	–	–	329.5	DCFUSE6S-550A	DCFH-NH3
300	7	361	20G...D361	397.1	541.5	20G...D415	541.5	649.8	277.3	333.6	450	700	1000	–	–	–	393.9	DCFUSE6S-700A	DCFH-NH3
						20G...D477	541.5	649.8	277.3	333.6	450	700	1000	–	–	–	393.9	DCFUSE6S-700A	DCFH-NH3
350	7	415	20G...D415	456.5	622.5				318.9	383.6	500	800	1200	–	–	–	452.8	DCFUSE6S-900A	DCFH-NH3
400	7	477	20G...D477	524.7	715.5				366.6	440.9	600	800	1400	–	–	–	520.5	DCFUSE6S-900A	DCFH-NH3

(1) Applied rating refers to the motor that is connected to the drive. For example, a D022 drive can be used in Normal Duty mode on a 15 Hp motor, or in Heavy Duty mode on a 10HP motor. A D014 drive can be used in Heavy Duty mode on a 7.5 Hp motor with the same ratings as a D011 drive. The drive can be programmed for either mode. For any given catalog number, Normal Duty mode provides higher continuous current but smaller overload current compared to Heavy Duty mode. See parameter 0:36 [Duty Rating Cfg].

(2) Only enclosure codes F, N, and R. See Product Rating Cross-reference in PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119, for frame sizes of other enclosure types.

(3) This drive is the next larger frame size.

(4) For UL compliance - fast-acting class J (Bussmann DFJ) or fast-acting class T (Bussmann JJS) fuses only. Equivalent fuses of class J, T may be used if they have lower I_{peak} and I^2t ratings than the Bussmann JJS fuse. For CE compliance - type gR fuses (Bussmann 170M - size 00 to 3, IEC 60269 or DIN 43620, or FWP-_G10F, _G14F, _G22F) only. Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping. Max. source SCCR = 100 kA.

(5) For UL compliance - fast-acting class J (Bussmann DFJ) or fast-acting class T (Bussmann JJS) fuses only. Equivalent fuses of class J, T may be used if they have lower I_{peak} and I^2t ratings than the Bussmann JJS fuse. For CE compliance - type gR fuses (Bussmann 170M - size 00 to 3, IEC 60269 or DIN 43620, or FWP-_G10F, _G14F, _G22F) only. Maximum protection device size is the highest rated device that supplies drive protection. Max. source SCCR = 100 kA.

(6) Circuit breaker - inverse time breaker - must be used with a fuse specified in the table. For US NEC, minimum circuit breaker size is 125% of motor FLA. Ratings that are shown are maximum values.

(7) Bulletin 140M/140MT with adjustable current range must have the current trip set to the minimum range so that the device does not trip.

(8) Bulletin 140M/140MT is UL Listed for 480Y/277V. Not UL Listed for use on 400V or 480V Delta/Delta, corner ground, or high-resistance ground systems.

(9) Bulletin 140M/140MT must be Frame C (140M-C2E-xxx or 140MT-C3E-xxx) or Frame D (140M-D8E-xxx or 140MT-D9E-xxx). Max. source SCCR = 65 kA.

(10) Bulletin 140M/140MT must be Frame D (140M-D8E-xxx or 140MT-D9E-xxx) or Frame F (140M-F8E-xxx). Max. source SCCR = 65 kA.

(11) When using the Bulletin 140M/140MT, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application-specific thermal considerations can require a larger enclosure.

(12) DC fuses specified are UL recognized and CE compliant.

Cable Considerations

This section provides information for cable types and routing.

Power Cable Types Acceptable for 400...690 Volt Installations

A variety of cable types are acceptable for drive installations. For an in-depth discussion of cable types, including a table of maximum motor cable lengths, refer to the PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119 or Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

Recommended Cable Design

Rating/Type	Description
600V 75 °C (167 °F)	• Four tinned copper conductors with XLPE insulation. • Copper braid/aluminum foil combination shield and tinned copper drain wire. • PVC jacket. • For surrounding air temperature greater than 50 °C, it is recommended to use wire with insulation rating of 90 °C or higher. However, conductor size shall be determined based on 75 °C rated wire.

Selection Considerations

This section provides information for input power cabling, motor cabling, and signal and I/O wiring.

Type		Cable Type(s)	Description	Min. Insulation Rating
Input Power (1) (2)	Standard	–	• Three tinned copper conductors with XLPE insulation. • Maximum 500 MCM conductors. • Copper braid/aluminum foil combination shield and tinned copper drain wire, three drain wires per cable assembly. • PVC jacket.	600V, 75 °C (167 °F) (3)
Motor	Standard	–	• Three tinned copper conductors with XLPE insulation. • Maximum 500 MCM conductors. • Copper braid/aluminum foil combination shield and tinned copper drain wire, three drain wires per cable assembly. • PVC jacket.	400...600V systems: 600V, 75 °C (167 °F) 690V systems: 2000V, 90 °C (194 °F)
Signal (1) (4) (5)	Standard Analog I/O	–	0.750 mm^2 (18 AWG), twisted pair, 100% shield w/drain.	300V, 75...90 °C (167...194 °F)
	Remote Pot	–	0.750 mm^2 (18 AWG), 3 conductor, shielded.	
	Encoder/ Pulse I/O <30 m (100 ft)	Combined	0.196 mm^2 (24 AWG) individually shielded pairs.	
	Encoder/ Pulse I/O 30...152 m (100...500 ft)	Signal	0.196 mm^2 (24 AWG) individually shielded pairs.	
		Power	0.750 mm^2 (18 AWG) in.dividually shielded pairs	
		Combined	0.330 mm^2 (22 AWG), power is 0.500 mm^2 (20 AWG) individually shielded pairs.	
	Encoder/ Pulse I/O 152...259 m (500...850 ft.)	Signal	0.196 mm^2 (24 AWG) individually shielded pairs.	
		Power	0.750 mm^2 (18 AWG) individually shielded pairs.	
		Combined	0.750 mm^2 (18 AWG) individually shielded pairs.	
Control Power	Un-shielded	–	Per US NEC or applicable national or local code.	300V, 60 °C (140 °F) (6)
Digital I/O **Safety Inputs** **Homing Inputs** (1) (4) (5) (7)	Un-shielded	–	Per US NEC or applicable national or local code.	300V, 60 °C (140 °F) (6)
	Shielded	Multi-conductor shielded cable	0.750 mm^2 (18 AWG), 3 conductor, shielded.	

(1) Signal wires should be separated from power wires by at least 0.3 meters (1 foot).
(2) The use of shielded wire for AC input power may not be necessary but is always recommended.
(3) The minimum insulation rating for input power wire must be at least equal to the nominal system voltage rating.
(4) If the wires are short and contained within a cabinet which has no sensitive circuits, the use of shielded wire may not be necessary, but is always recommended.
(5) I/O terminals labeled '(–)' or 'Common' are not referenced to earth ground and are designed to greatly reduce common mode interference. Grounding these terminals can cause signal noise. For CE installations, 115V I/O must use shielded cable or have a cable length less than 30 m (98 ft).
(6) 75 °C (140 °F) rated wire or higher is recommended for installations where the surrounding air temperature exceeds 50 °C (122 °F).
(7) Ensure that 120V AC for I/O meets the requirements of overvoltage category II and is supplied with an isolation transformer from the mains power.

Motor Considerations

Due to the operational characteristics of AC variable frequency drives, motors with inverter grade insulation systems designed to meet or exceed NEMA MG1 Part 31.40.4.2 standards for resistance to spikes of 1600 volts are recommended.

Guidelines must be followed when using non-inverter grade motors to avoid premature motor failures. Refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

Dimensions and Weights

This section provides frame and rating cross-references.

400V AC and 480V AC

Cat. No.	Light Duty kW Output	Normal Duty kW Output	Heavy Duty kW Output	Cat. No.	Light Duty Hp Output	Normal Duty Hp Output	Heavy Duty Hp Output	Enclosure Code/Frame Size			
400 Volt				**480 Volt**				**F**	**G**	**N**	**R**
20G...C2P1	–	0.75 (0.75) (1)	0.75 (0.37) (1)	20G...D2P1	–	1 (1) (1)	1 (0.5) (1)	2	2	2	1
20G...C3P5	–	1.5 (1.5) (1)	1.5 (0.75) (1)	20G...D3P4	–	2 (2) (1)	2 (1.5) (1)				
20G...C5P0	–	2.2 (2.2) (1)	2.2 (1.5) (1)	20G...D5P0	–	3 (3) (1)	3 (2) (1)				
20G...C8P7	–	4 (4) (1)	4 (2.2) (1)	20G...D8P0	–	5 (5) (1)	5 (3) (1)				
20G...C011	–	5.5 (5.5) (1)	5.5 (4) (1)	20G...D011	–	7.5 (7.5) (1)	7.5 (5) (1)				
20G...C015	–	7.5 (7.5) (1)	5.5 (5.5) (1)	20G...D014	–	10 (10) (1)	7.5 (7.5) (1)				
20G...C022	–	11	7.5	20G...D022	–	15	10				–
20G...C030	–	15	11	20G...D027	–	20	15	3	3	3	
20G...C037	–	18.5	15	20G...D034	–	25	20				
20G...C043	–	22	18.5	20G...D040	–	30	25				
20G...C060	–	30	22	20G...D052	–	40	30	4	4	4	
20G...C061	–	30	22	20G...D053	–	40	30	–	–	3	
20G...C072	–	37	30	20G...D065	–	50	40	4	5	4	
20G...C073	–	37	30	20G...D066	–	50	40	–	4	–	
20G...C085	–	45	37	20G...D077	–	60	50	5	5	5	
20G...C086	–	45	37	20G...D078	–	60	50	4	–	4	
20G...C104	–	55	45	20G...D096	–	75	60	5	6	5	
20G...C140	–	75	55	20G...D125	–	100	75	6 (2)		6	
20G...C170	–	90	75	20G...D156	–	125	100				
20G...C205	–	110	90	20G...D186	–	150	125				
20G...C260	–	132	110	20G...D248	–	200	150		7		
20G...C302	–	160	132	20G...D302	–	250	200	7 (2)		7	
20G...C367	–	200	160	20G...D361	–	300	250				
20G...C456	–	250	200	20G...D415	–	350	300				
20G...C477	–	270	200	20G...D477	–	400	300		–		

(1) Ratings in parenthesis are only applicable for Frame 1.
(2) For Frames 6 and 7, a user-installed flange kit (catalog number 20-750-TFLNG1-Fx) is available to convert a code N drive that provides a NEMA/UL Type 4X/12 back.

Enclosure Options

IMPORTANT IP00, IP20, and NEMA/UL Open Type PowerFlex 755TS drives must be installed in a clean, dry location. Contaminants such as oils, corrosive vapors and abrasive debris must be kept out of the enclosure. These enclosures are intended for indoor use primarily to provide a degree of protection against contact with enclosed equipment. These enclosures offer no protection against airborne contaminants. Refer to the following tables for an explanation of enclosure options and the environmental specifications found on page 13. See Industry Installation Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-AT003 for additional information.

Pollution Degree Ratings According to EN 61800-5-1

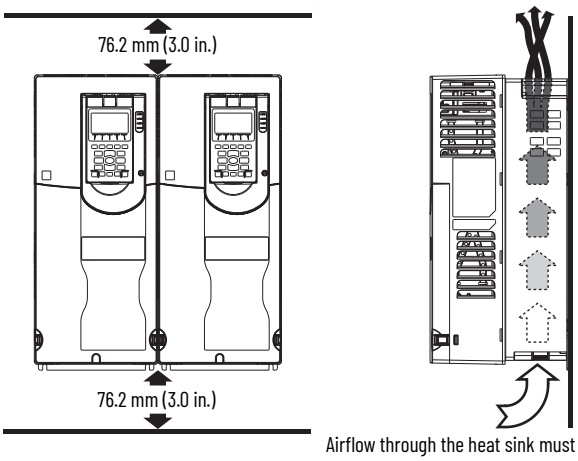
Pollution Degree	Description
1	No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
2	Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation is to be expected, when the drive is out of operation.
3	Conductive pollution or dry non-conductive pollution occurs, which becomes conductive due to condensation, which is to be expected.
4	The pollution generates persistent conductivity caused, for example by conductive dust or rain or snow.

Product Enclosure Ratings

Frames	Enclosure Type (Cat. No. Position 6)	Installed Accessory Kit	Front Side Rating		Back Side/Heat Sink Rating	
			Enclosure Type	Pollution Degree	Enclosure Type	Pollution Degree
1	R	None	IP20, NEMA/UL Open Type	1, 2	IP20, NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
2...5	N	None	IP20, NEMA/UL Open Type	1, 2	IP20, NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
		Flange	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
	F	None	IP20, NEMA/UL Open Type	1, 2	IP66, NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54, NEMA/UL Type 12	1, 2, 3, 4	IP54, NEMA/UL Type 12	1, 2, 3, 4
6 and 7	N	None	IP00, NEMA/UL Open Type	1, 2	IP00, NEMA/UL Open Type Kit	1, 2
		NEMA Type 1	IP20, NEMA/UL Type 1	1, 2	IP20, NEMA/UL Type 1	1, 2
		NEMA Type 4X flange	IP00, NEMA/UL Open Type	1, 2	IP66, NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54, NEMA/UL Type 12	1, 2, 3, 4	IP54, NEMA/UL Type 12	1, 2, 3, 4

Minimum Mounting Clearances

Specified vertical clearance requirements are intended to be from the PowerFlex 755TS product to the closest object that can restrict airflow through the cabinet. The product must be mounted in a vertical orientation as shown and must make full contact with the mounting surface. In addition, inlet air temperature must not exceed the product specification.



Airflow through the heat sink must not be impeded.
No clearance between wall mount products is required.

Approximate Weights

Drive	Frame Size	Drive Rating		Enclosure Code/Weight [kg (lb)]			
		kW (400V)	Hp (480V)	F	G	N	R
Standard AC input and common DC input	1	0.75...7.5	1...10				6 (13)
	2	0.75...11	1...15	8 (17)	8 (17)	8 (17)	
	3	15...30	20...40	12 (26)	12 (26)	12 (26)	
	4	30...45	40...60	14 (31)	14 (31)	14 (31)	
	5	37...55	50...75	21 (47)	21 (47)	21 (47)	
	6	55...132	75...200	48 (105)	100 (221)	48 (105)	
	7	132...270	200...400	72 (158)	132 (290)	82 (180)	

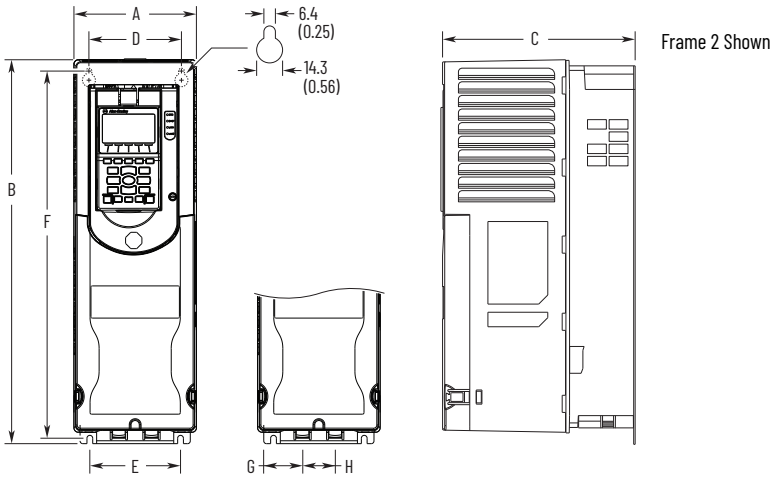
PowerFlex 755TS Drives Approximate Dimensions

This section provides the approximate dimensions for the drives.

Dimension Drawing Index

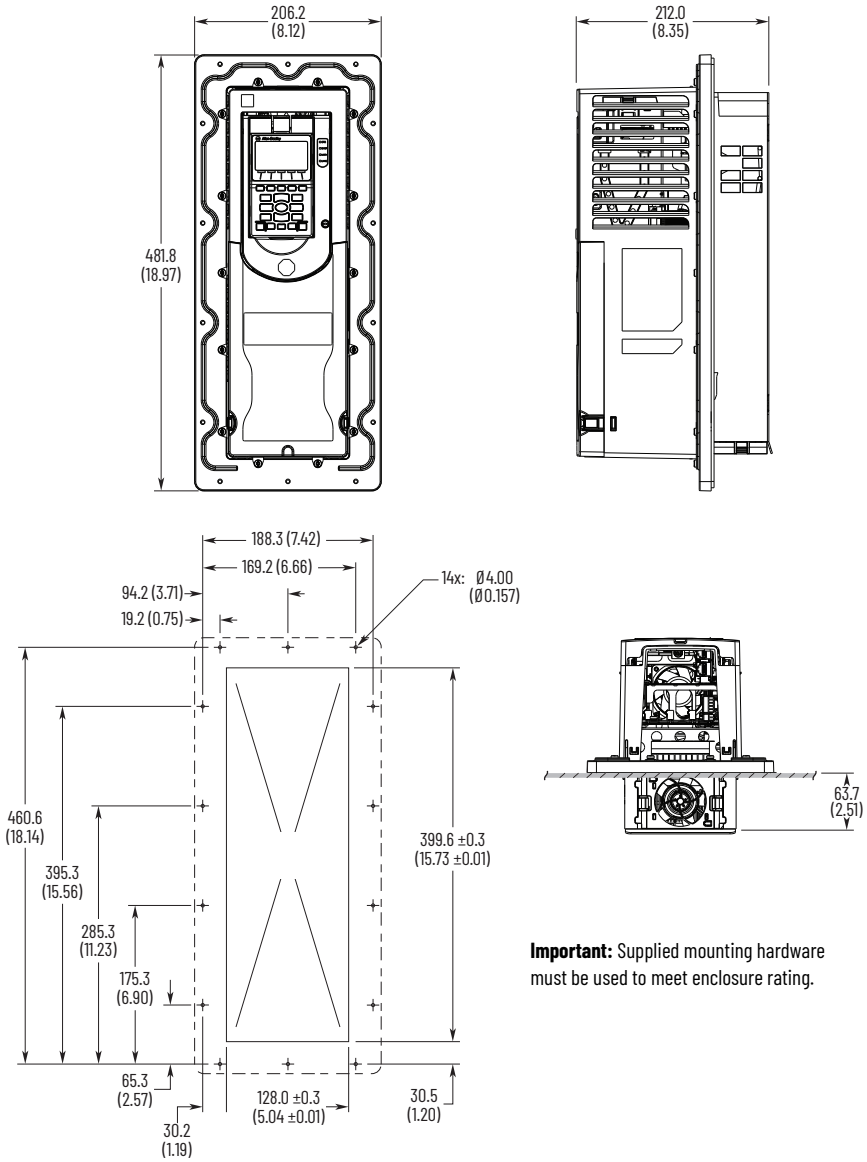
Frame	Description	Page
1	IP20, NEMA/UL Open Type	74
2	IP20, NEMA/UL Open Type	74
	Flange Mount	75
	IP54, NEMA/UL Type 12	76
3	IP20, NEMA/UL Open Type	76
	Flange Mount	77
	IP54, NEMA/UL Type 12	78
4	IP20, NEMA/UL Open Type	78
	Flange Mount	79
	IP54, NEMA/UL Type 12	80
5	IP20, NEMA/UL Open Type	80
	Flange Mount	81
	IP54, NEMA/UL Type 12	82
6	IP00, NEMA/UL Open Type	83
	Flange Mount	84
	IP54, NEMA/UL Type 12	85
7	IP00, NEMA/UL Open Type	86
	Flange Mount	87
	NEMA/UL Type 1	88
	IP54, NEMA/UL Type 12	89
1...6	NEMA/UL Type 1 Kit	90
1...5	NEMA/UL Type 1 Bottom View	91
1...5	EMC Plate and Cores Kit	92

Frame	Type	Approximate Dimensions [mm (in.)]
1, 2	IP20, NEMA/UL Open Type	

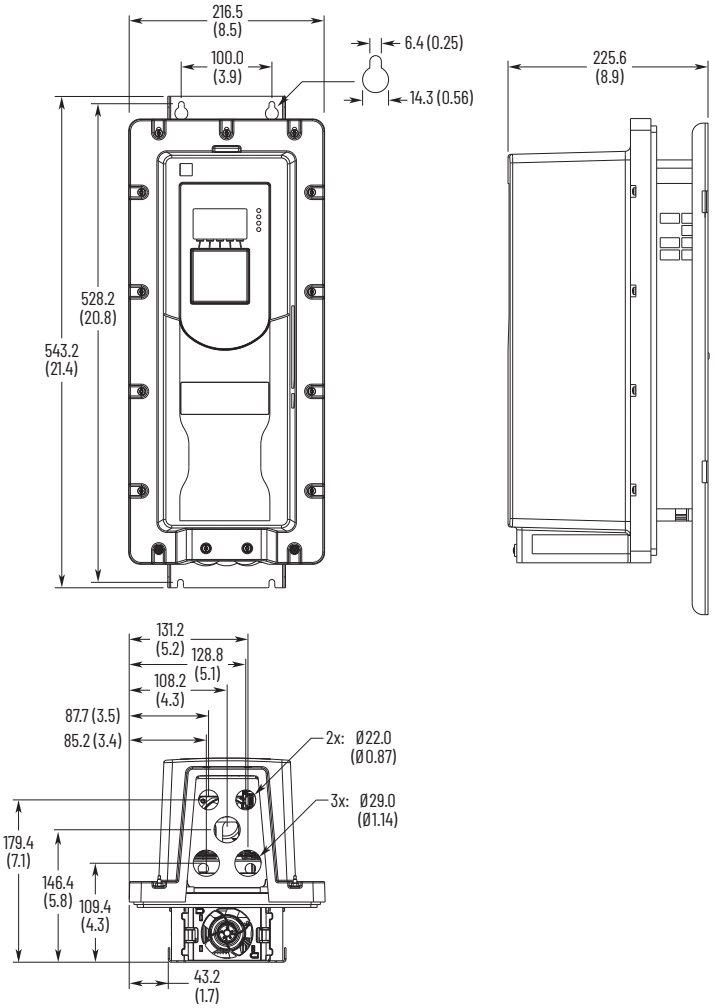
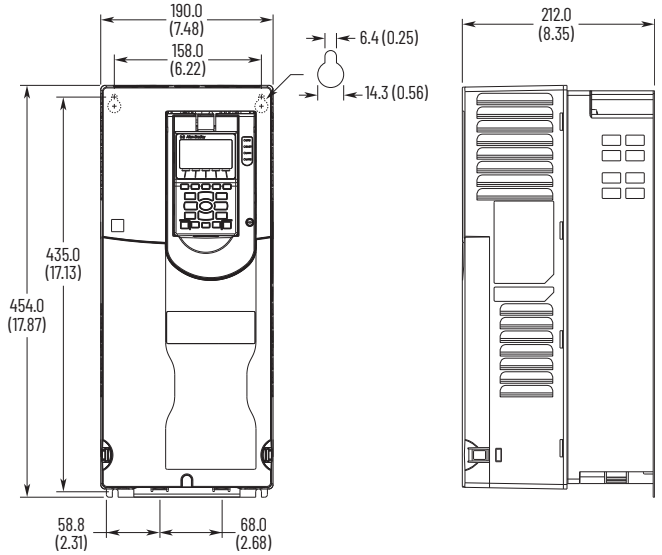


Frame	A	B	C	D	E	F	G	H	Weight [kg (lb)]
1	109.0 (4.3)	400.0 (15.7)	211.1 (8.3)	68.0 (2.7)	82.0 (3.2)	390.3 (15.4)	28.8 (1.1)	36.0 (1.4)	6.0 (13.2)
2	135.0 (5.3)	424.2 (16.7)	212.0 (8.3)	100.0 (3.9)	100.0 (3.94)	404.2 (15.9)	42.8 (1.7)	36.0 (1.4)	8.0 (17.6)

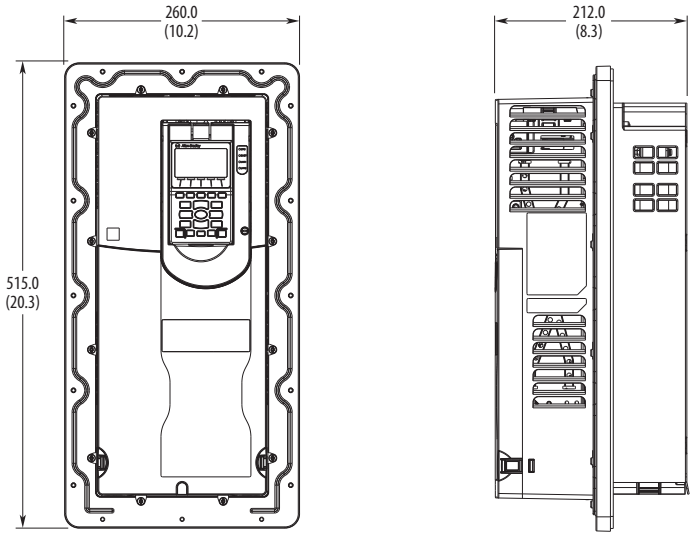
Frame	Type	Approximate Dimensions [mm (in.)]
2	Flange Mount	

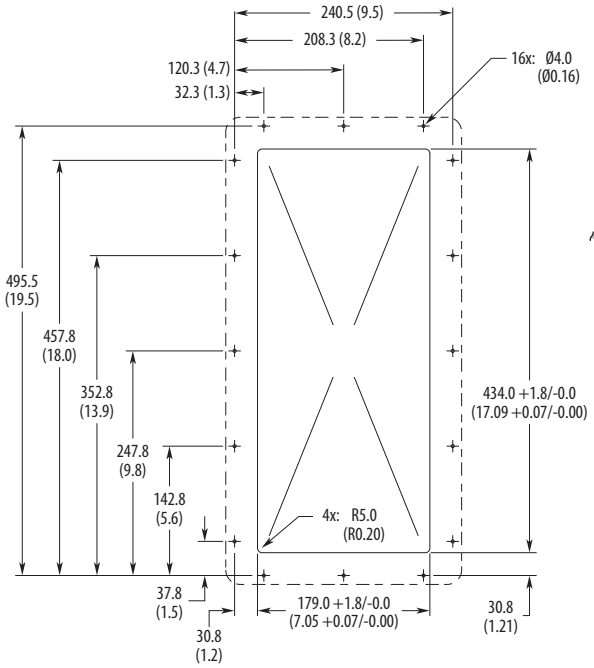


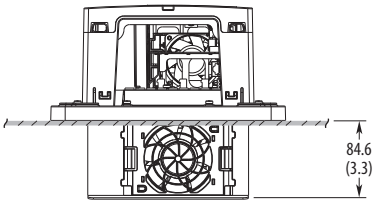
Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions [mm (in.)]
2	IP54, NEMA/UL Type 12	
3	IP20, NEMA/UL Open Type	

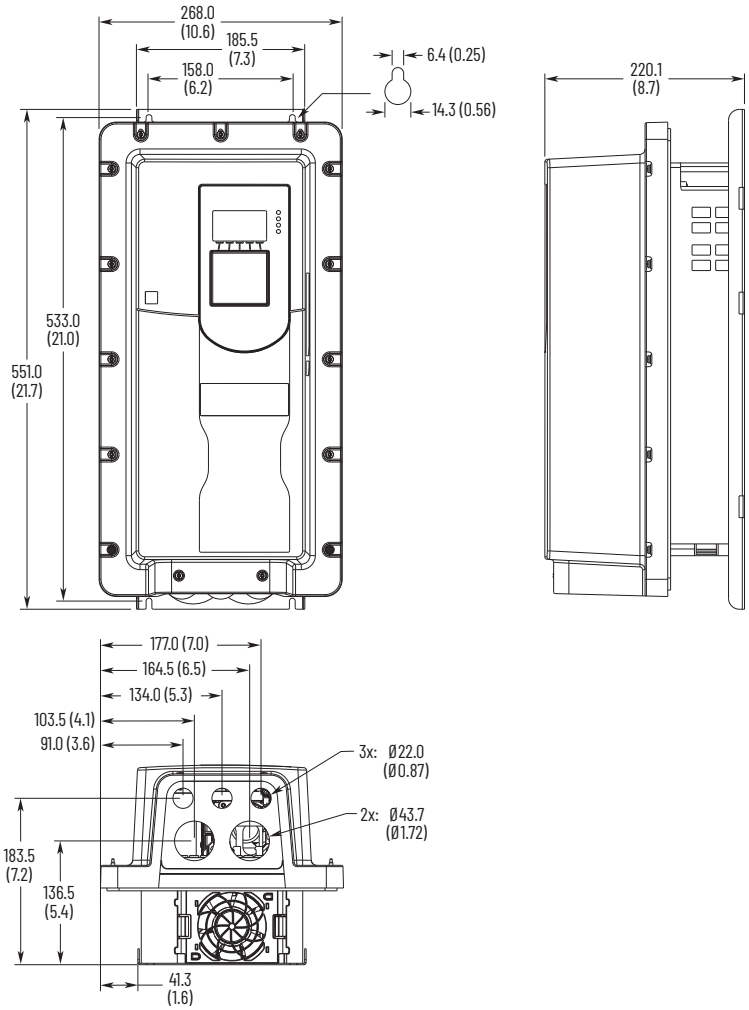
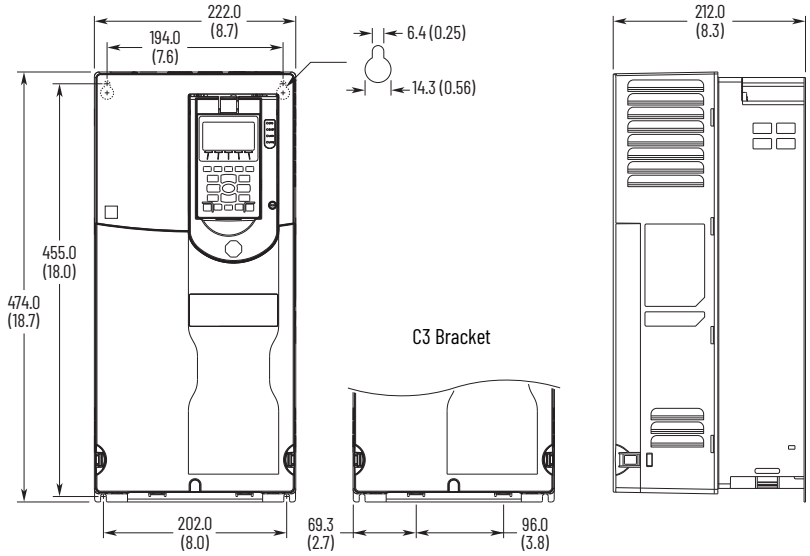
Frame	Type	Approximate Dimensions [mm (in.)]
3	Flange Mount	



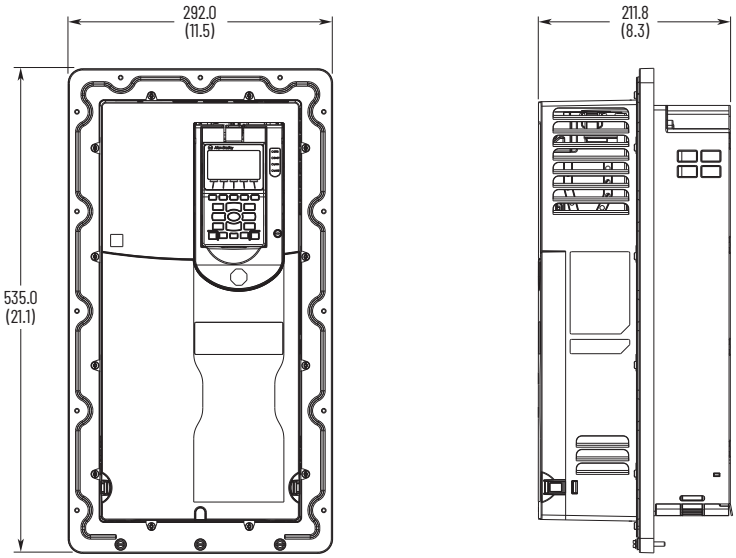


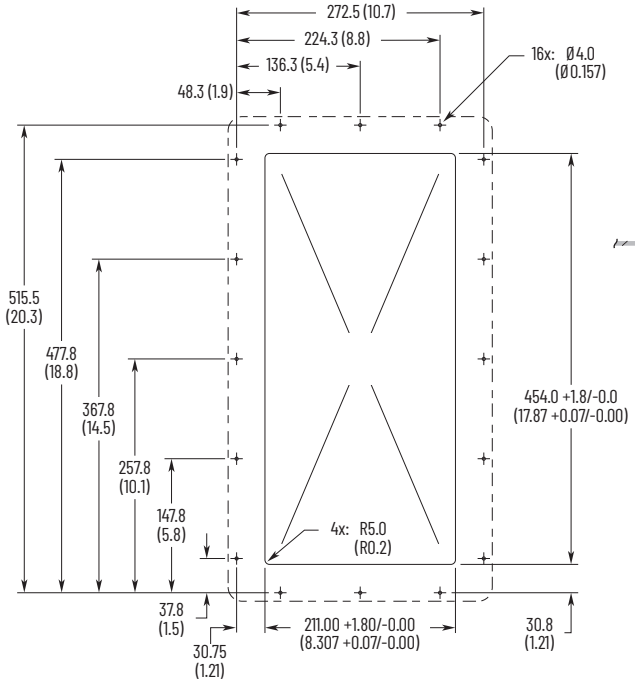


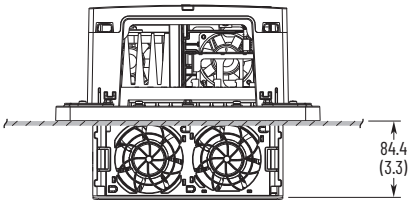
Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions [mm (in.)]
3	IP54, NEMA/UL Type 12	
4	IP20, NEMA/UL Open Type	

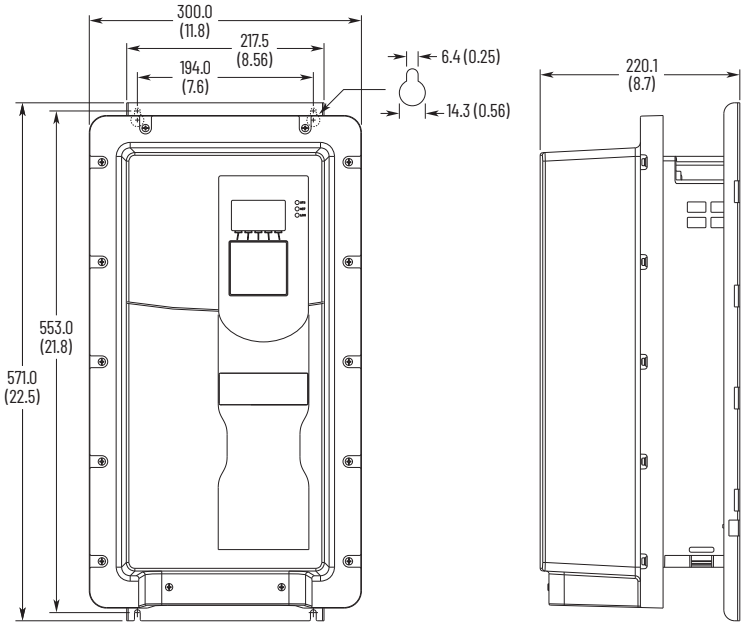
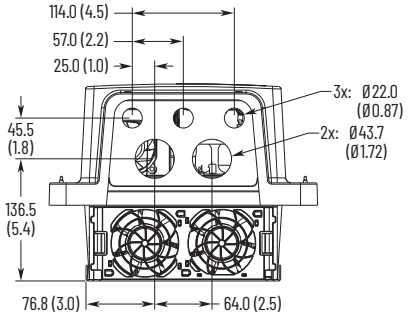
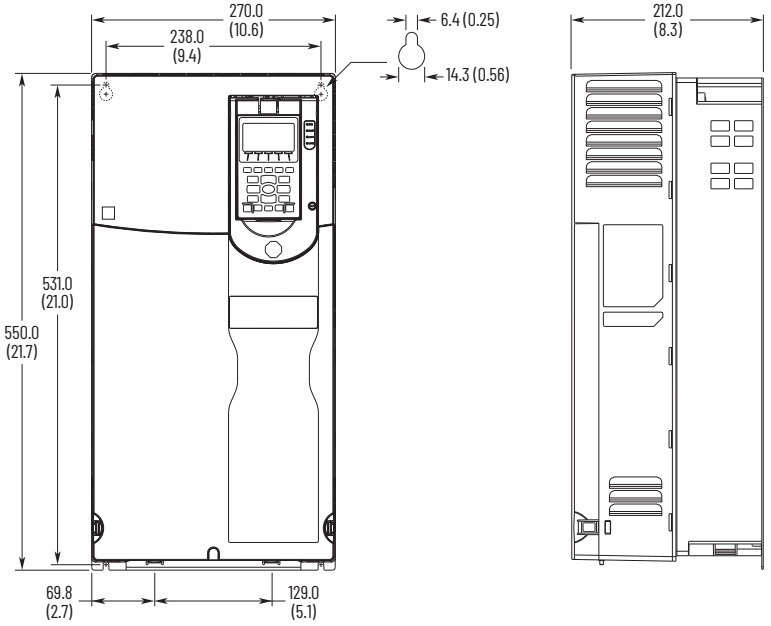
Frame	Type	Approximate Dimensions [mm (in.)]
4	Flange Mount	



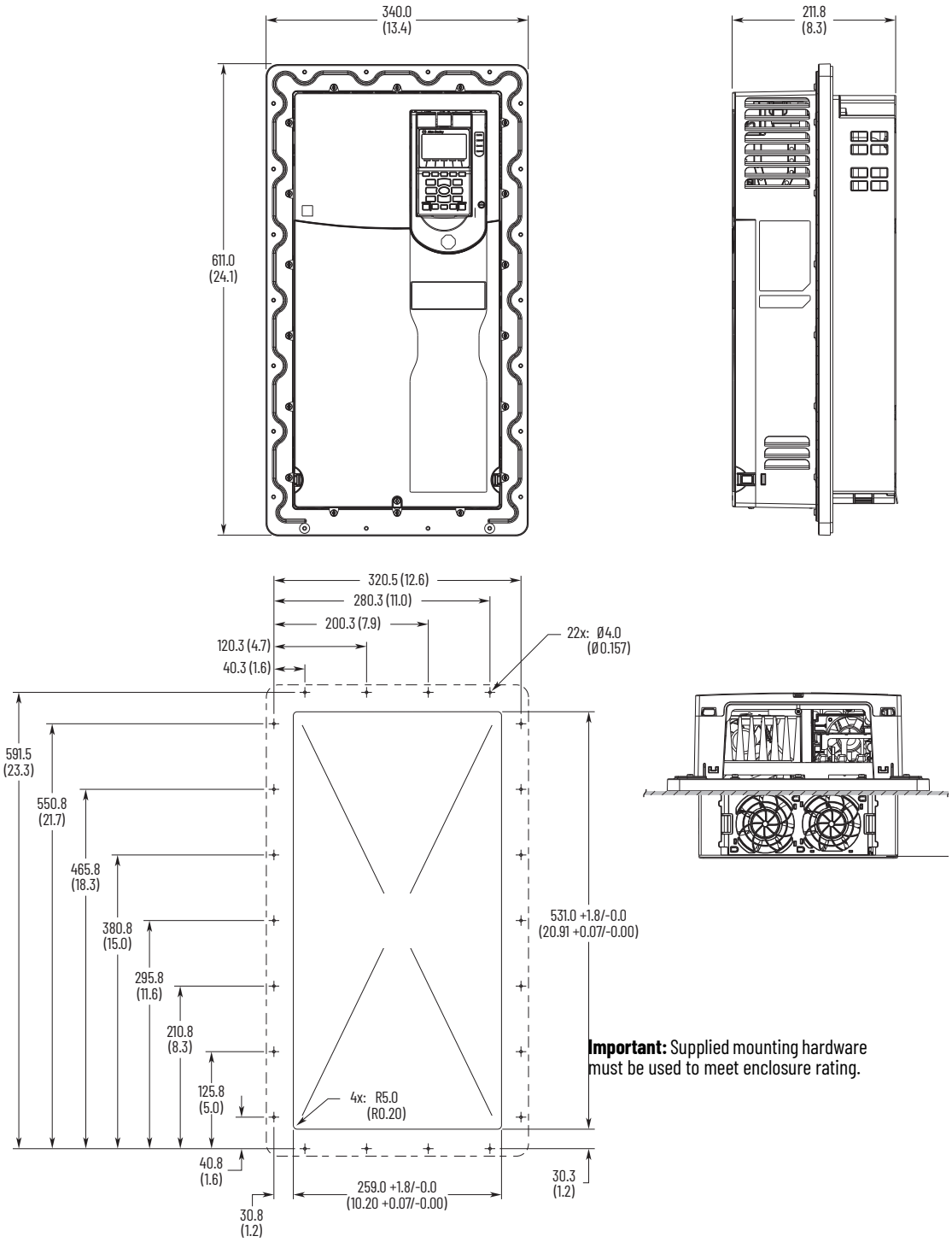




Important: Supplied mounting hardware must be used to meet enclosure rating.

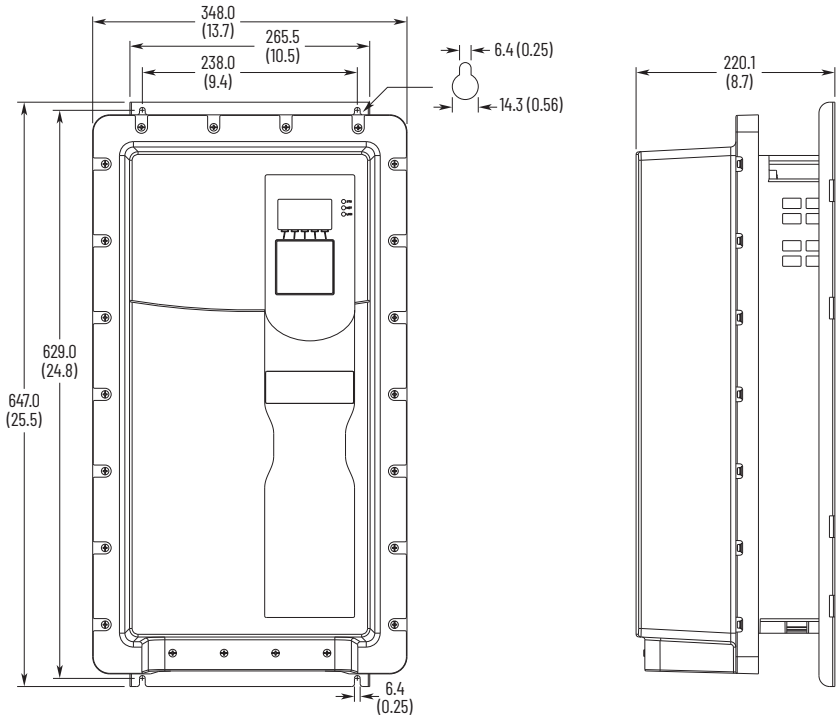
Frame	Type	Approximate Dimensions [mm (in.)]
4	IP54, NEMA/UL Type 12	 
5	IP20, NEMA/UL Open Type	

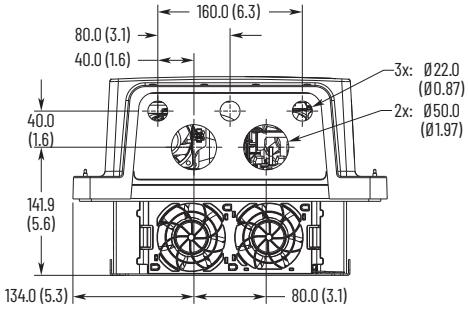
Frame	Type	Approximate Dimensions [mm (in.)]
5	Flange Mount	



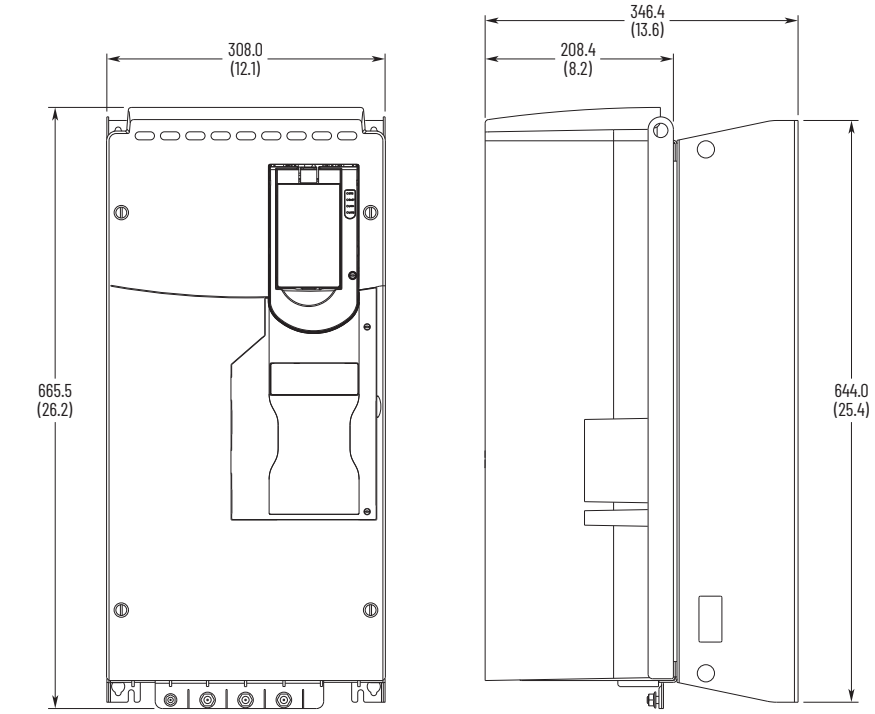
Important: Supplied mounting hardware must be used to meet enclosure rating.

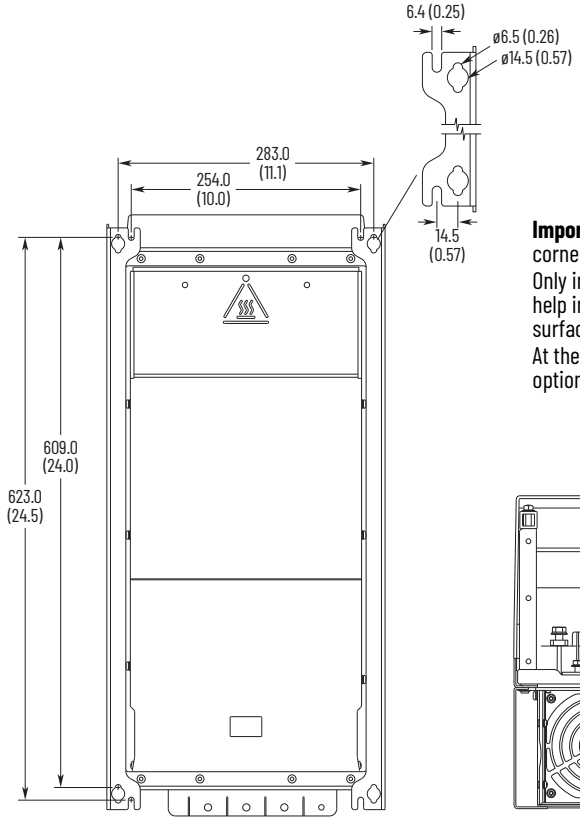
Frame	Type	Approximate Dimensions [mm (in.)]
5	IP54, NEMA/UL Type 12	

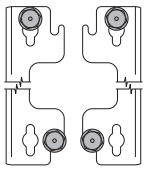




Frame	Type	Approximate Dimensions [mm (in.)]
6	IP00, NEMA/UL Open Type	



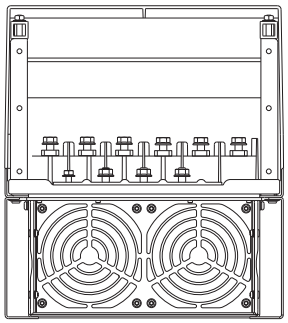




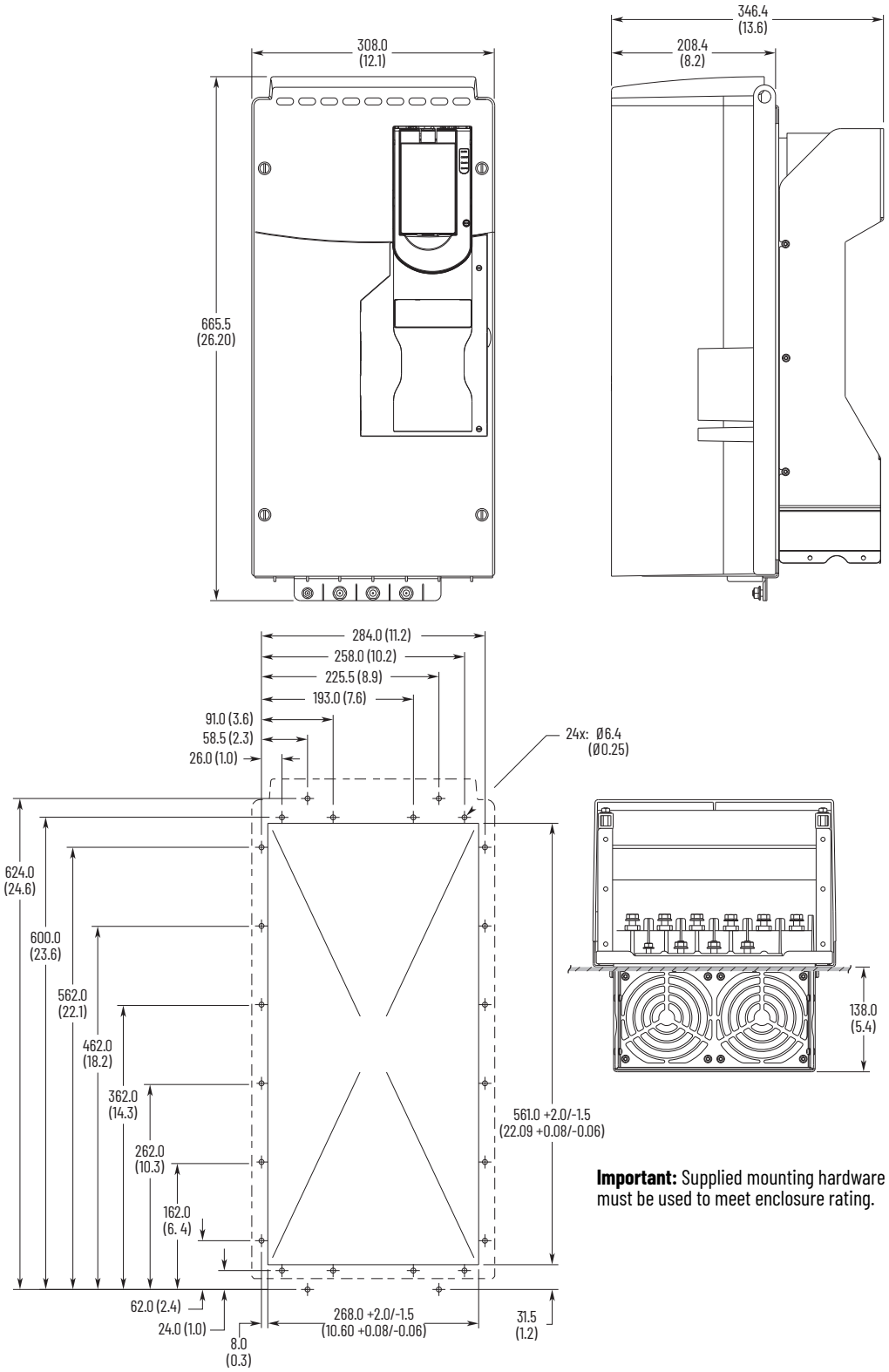
Important: Always install mounting hardware in all four corners of the mounting legs for stability.

Only install mounting hardware through the top key holes to help insure the drive is securely fastened to the mounting surface.

At the bottom of the mounting legs, either the key holes or optional open mounting slots can be used.

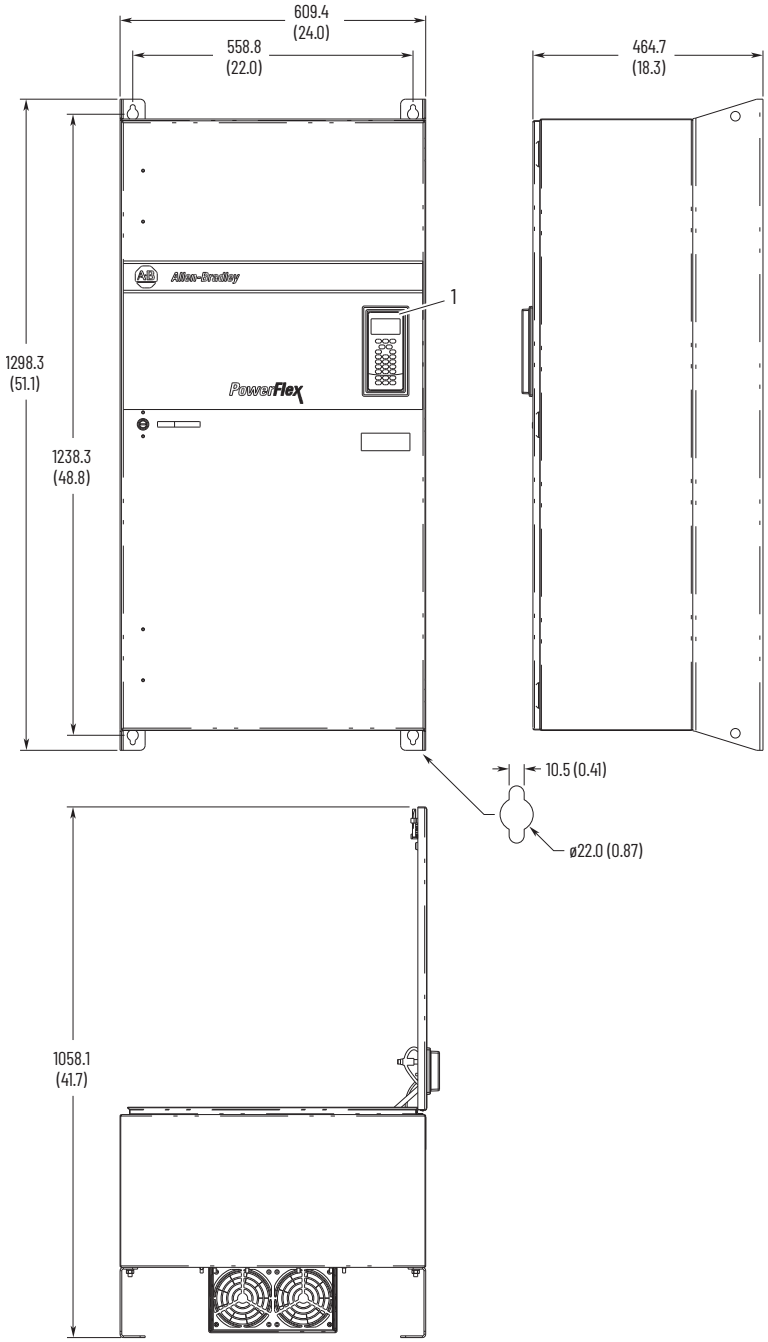


Frame	Type	Approximate Dimensions [mm (in.)]
6	Flange Mount	



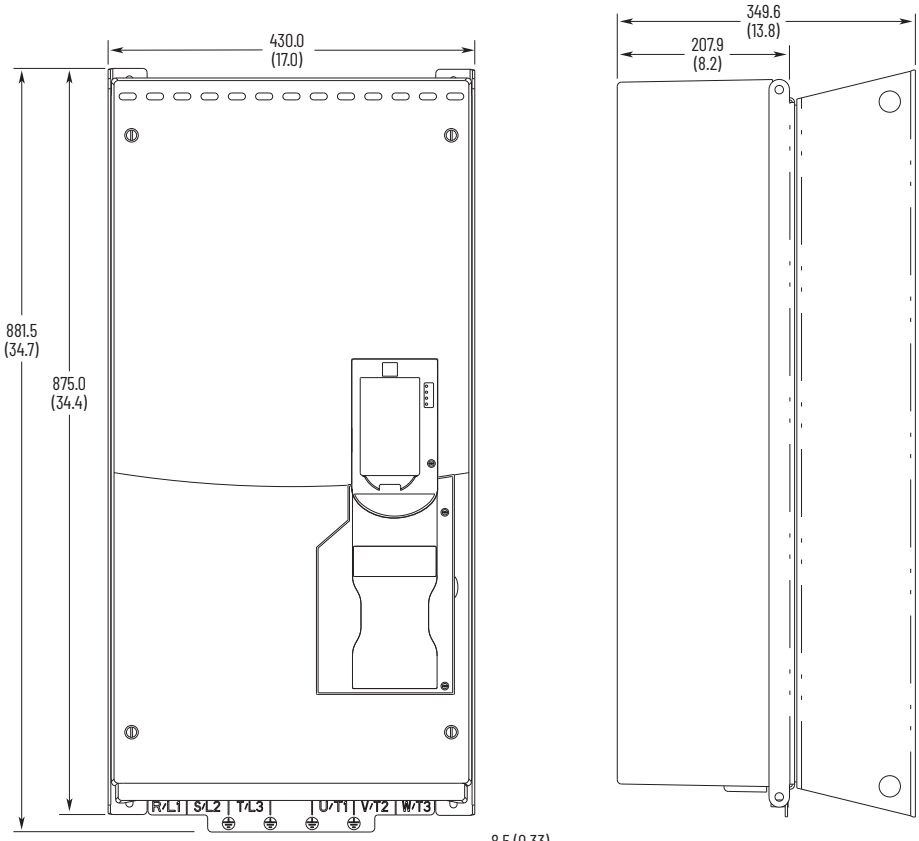
Important: Supplied mounting hardware must be used to meet enclosure rating.

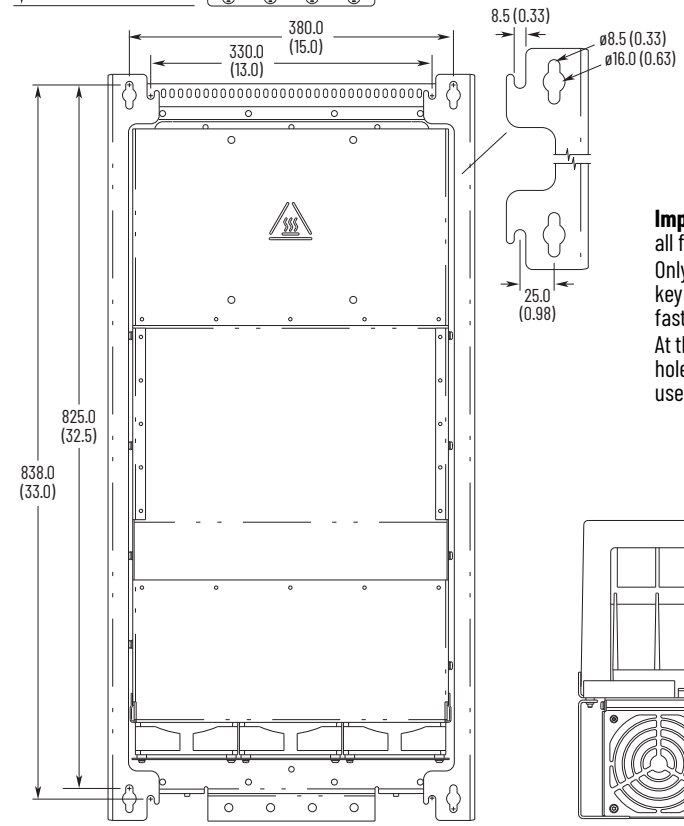
Frame	Type	Approximate Dimensions [mm (in.)]
6	IP54, NEMA/UL Type 12	

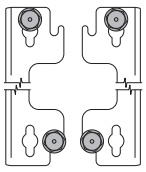


Item	Description
1	Shown with the field-installed 20-HIM-C6S.

Frame	Type	Approximate Dimensions [mm (in.)]
7	IP00, NEMA/UL Open Type	



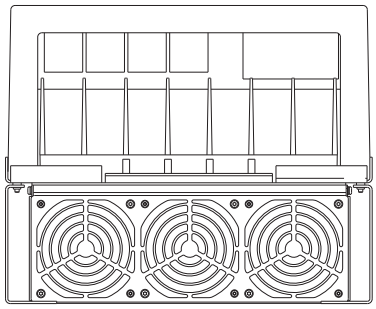




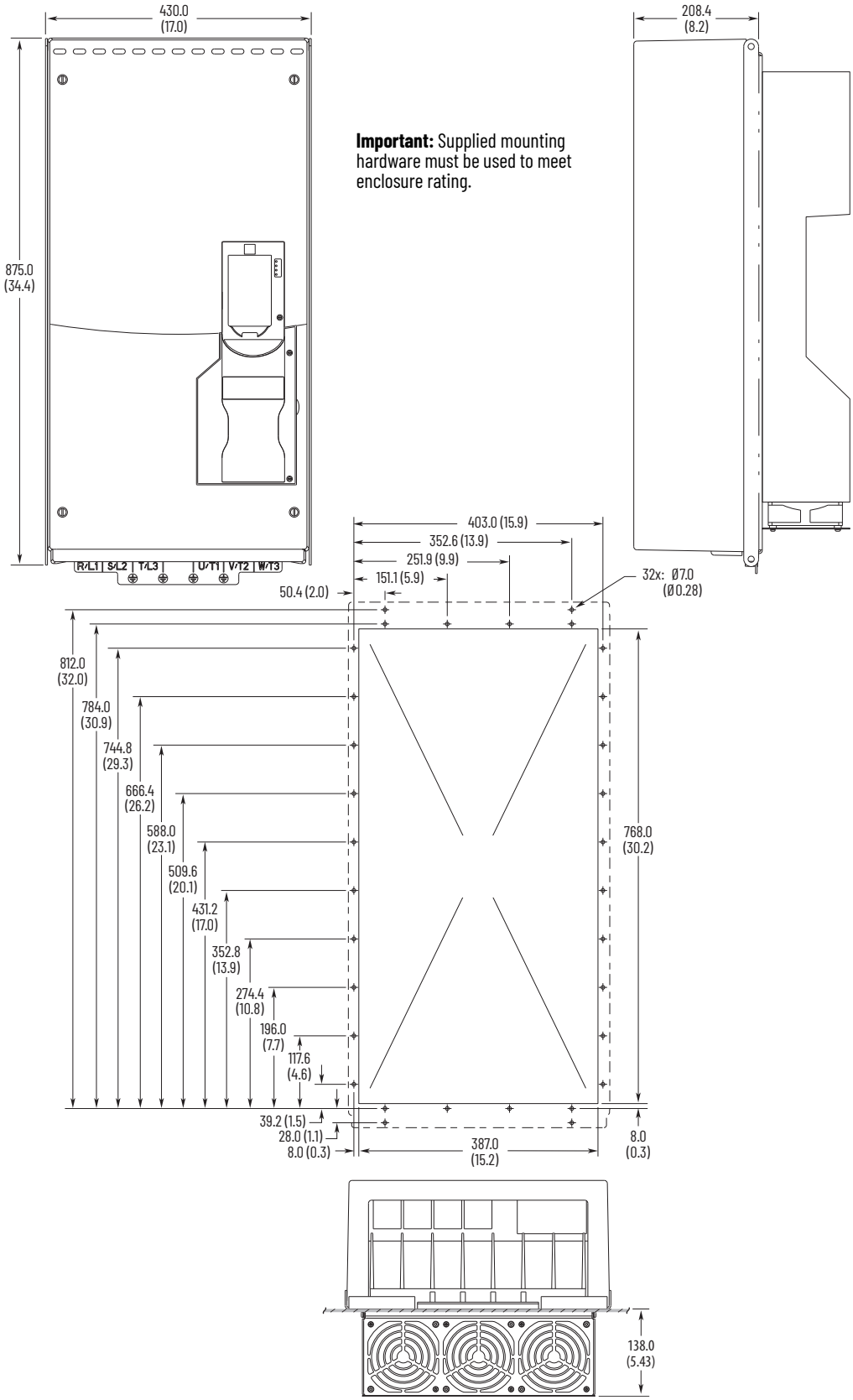
Important: Always install mounting hardware in all four corners of the mounting legs for stability.

Only install mounting hardware through the top key holes to help insure the drive is securely fastened to the mounting surface.

At the bottom of the mounting legs, either the key holes or optional open mounting slots can be used.

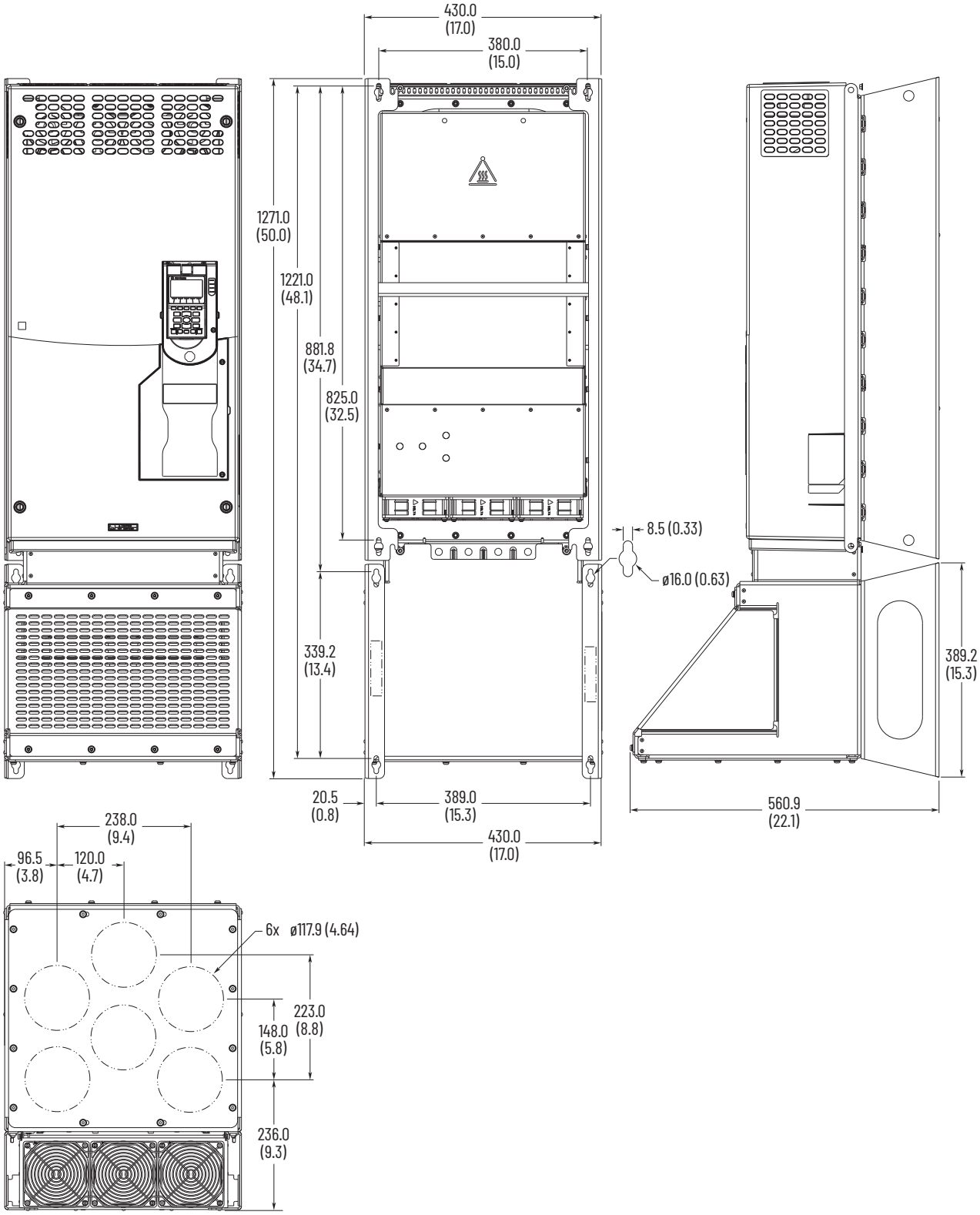


Frame	Type	Approximate Dimensions [mm (in.)]
7	Flange Mount	

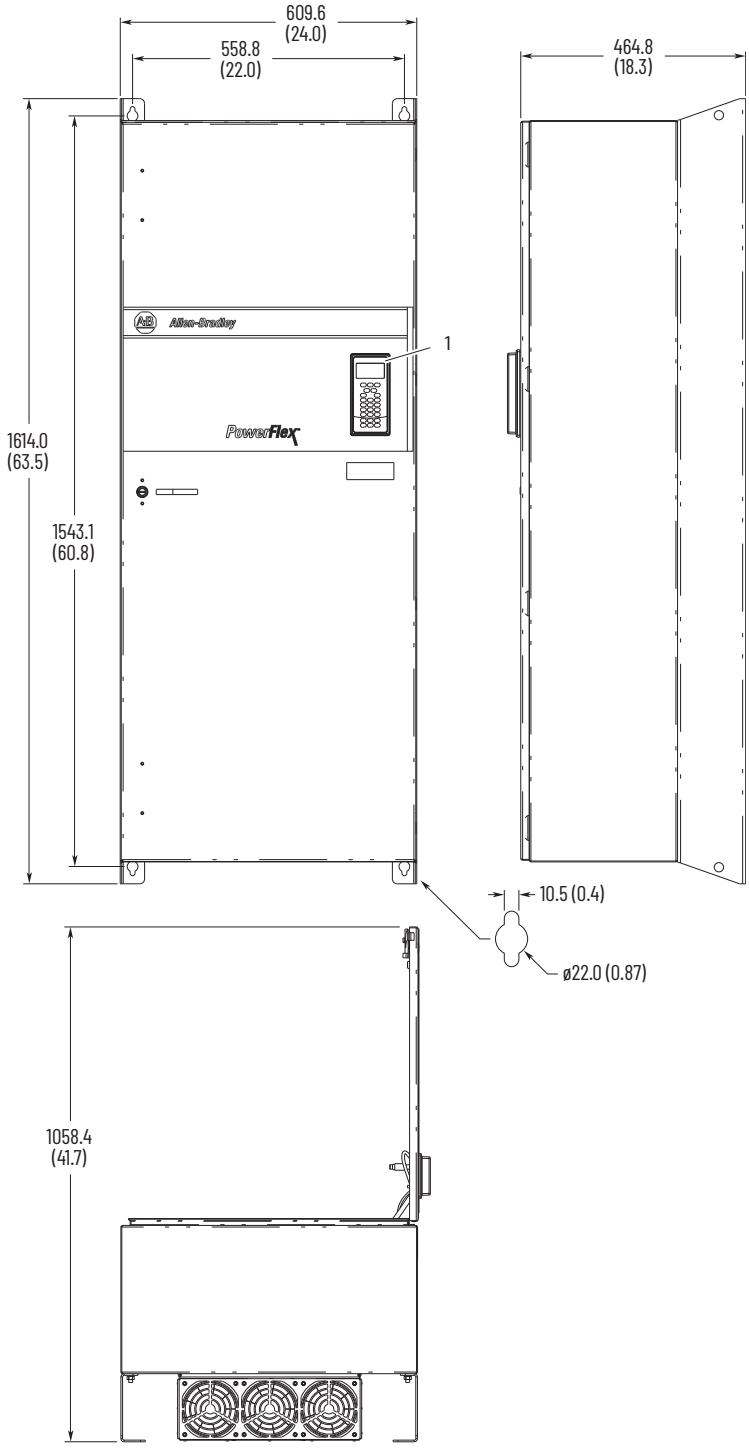


Important: Supplied mounting hardware must be used to meet enclosure rating.

Frame	Type	Approximate Dimensions [mm (in.)]
7	NEMA/UL Type 1	

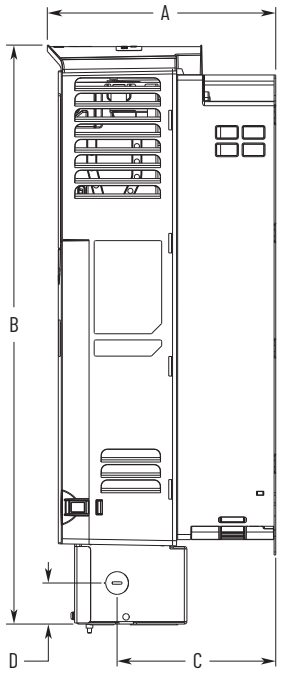


Frame	Type	Approximate Dimensions [mm (in.)]
7	IP54, NEMA/UL Type 12	



Item	Description
1	Shown with the field-installed 20-HIM-C6S.

Frame	Type	Approximate Dimensions [mm (in.)]
1...5	NEMA/UL Type 1 Kit	



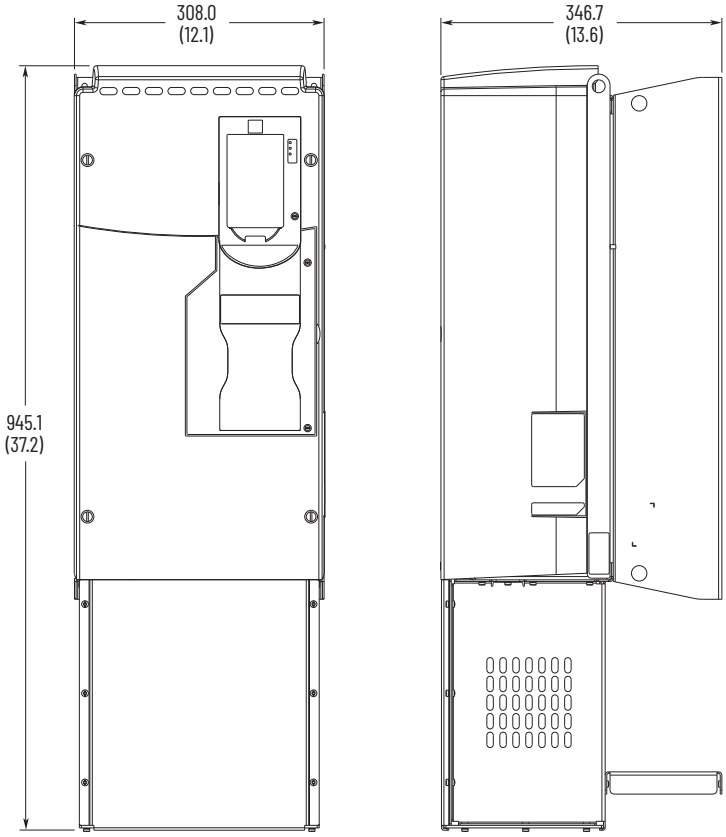
Frame 4 Shown

Frame	A	B	C	D
1	215.4 (8.5)	458.8 (18.1)	—	—
2	222.2 (8.7)	497.1 (19.6)	117.7 (4.6)	38.0 (1.5)
3 (1)	223.1 (8.8)	530.1 (20.9)	154.7 (6.1)	38.0 (1.5)
4	222.7 (8.8)	564.4 (22.2)	154.7 (6.1)	40.0 (1.6)
5	222.7 (8.8)	665.4 (26.2)	155.0 (6.1)	55.0 (2.2)

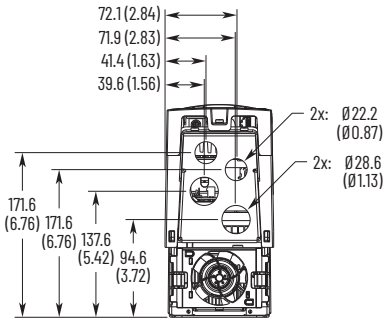
(1) NEMA/UL Type 1 for 40 HP/30 kW ND frame 3 drives, kit number 20-750-TNEMA1-F3.

IMPORTANT: NEMA/UL Type 1 Kits (20-750-NEMA1-Fx) do not change the mounting dimensions.

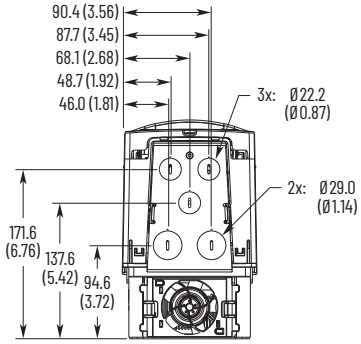
6	NEMA/UL Type 1 Kit	



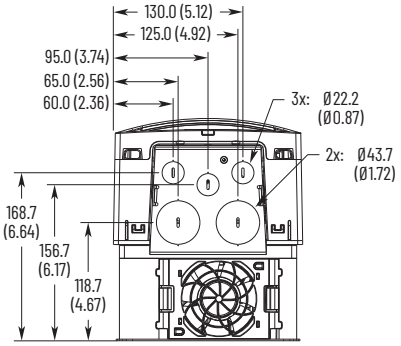
Frame	Type	Approximate Dimensions [mm (in.)]
1...5	NEMA/UL Type 1 Bottom View	



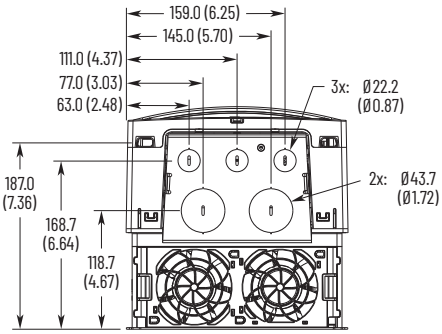
Frame 1



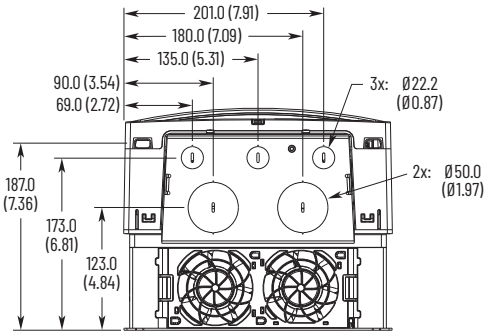
Frame 2



Frame 3

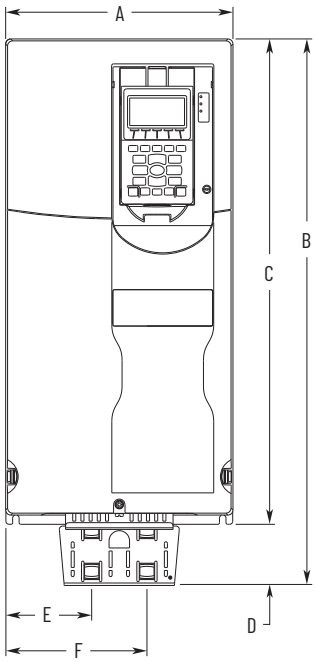


Frame 4

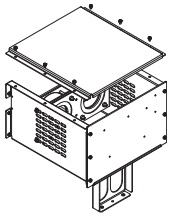


Frame 5

Frame	Type	Approximate Dimensions [mm (in.)]
1...7	EMC Plate and Cores Kit	



Frame 4 Shown



Frame 6 Shown (Kit Only)

Enclosures are shown without venting. Supplied enclosures have proper venting.

Frame	A	B	C	D	E	F
1	110.0 (4.3)	478.8 (18.9)	400.5 (15.8)	78.3 (3.1)	37.4 (1.5)	73.4 (2.9)
2	134.5 (5.3)	485.9 (19.1)	424.2 (16.7)	61.7 (2.4)	43.5 (1.7)	79.5 (3.1)
3	190.0 (7.5)	514.0 (20.2)	454.0 (17.9)	60.0 (2.4)	74.0 (2.9)	116.0 (4.6)
4	222.0 (8.7)	533.7 (21.0)	474.0 (18.7)	59.7 (2.4)	84.0 (3.3)	138.0 (5.4)
5	270.0 (10.6)	609.7 (24.0)	550.0 (21.7)	59.7 (2.4)	77.8 (3.1)	191.8 (7.6)

IMPORTANT: EMC Kits (20-750-EMC6-Fx) do not change the mounting dimensions. See the PowerFlex 750-Series EMC Plate and Cores Installation Instructions, publication 750-IN124, for detailed information on kit installation.

Drive Options

This section provides information on options that are available for PowerFlex 755TS products with TotalFORCE control.

Human Interface Modules

PowerFlex 755TS products with TotalFORCE control are compatible only with the enhanced PowerFlex 7-Class human interface modules listed here.

Blank Plate

20-HIM-A6

20-HIM-C6S

Cat. No.	Description
20-HIM-A0	No HIM (Blank Plate)
20-HIM-A6	Enhanced, LCD, Full Numeric, Handheld/Local
20-HIM-C6S	Enhanced, LCD, Full Numeric, IP66 NEMA Type 4X/12 (for indoor use only)(1)

(1) Includes a 1202-C30 interface cable (3 meters) for connection to drive.

Specifications - Human Interface Modules

Specification	20-HIM-A6 (1)	20-HIM-C6S (1)
Drive Protocol: Data Rates:	 Drive Peripheral Interface (DPI) 125 kbps or 500 kbps	
Consumption Drive (DPI):	 140 mA at 12V DC supplied by the Host Drive	
Dimensions - H x W x D 20-HIM-A6: 20-HIM-C6S:	 116 x 70 x 16 mm (4.57 x 2.75 x 0.63 in.) 180 x 93 x 25 mm (7.08 x 3.66 x 0.98 in.)	
Weight	91 g (3.2 oz.)	173 g (5.7 oz.)
Temperature Operating: Storage:	 -20...+60 °C (-4...+140 °F) -40...+85 °C (-40...+185 °F)	
Relative Humidity	5...95% non-condensing	
Atmosphere	**Important**: The module must not be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust. If the module is not going to be installed for a period of time, it must be stored in an area where it will not be exposed to a corrosive atmosphere.	
UV Radiation	The HIM is not UV rated.	

Specifications - Human Interface Modules (Continued)

Specification	20-HIM-A6 (1)	20-HIM-C6S (1)
Vibration Operating: Non-Operating:	 2.5 G at 5...2000 Hz 5 G at 5...2000 Hz	
Shock Operating: Non-Operating:	 30 G peak acceleration, 11 (±1) ms pulse width 50 G peak acceleration, 11 (±1) ms pulse width	
UL c-UL CE RCM FCC ID IC	UL 61800-5-1 CAN / CSA C22.2 No. 274 EN61800-3, EN61800-5-1 EN61800-3 — —	

(1) NOTE: This is a product of category C2 according to IEC 61800-3. In a domestic environment this product may cause radio interference in which case supplementary mitigation measures may be required.

Human Interface Module Kits

Description	Cat. No.
Bezel Kit for LCD HIMs, NEMA Type 1 (1)	20-HIM-B1
PowerFlex HIM Interface Cable, 1 m (39 in.) (2)	20-HIM-H10
Comm Option Cable Kit (Plug-Plug) 0.33 m (1.1 ft) 1 m (3.3 ft) 3 m (9.8 ft) 9 m (29.5 ft)	 1202-C03 1202-C10 1202-C30 1202-C90
Cable Kit (Plug-Socket) (3) 0.33 m (1.1 ft) 1 m (3.3 ft) 3 m (9.8 ft) 9 m (29.5 ft)	 1202-H03 1202-H10 1202-H30 1202-H90
DPI Cable Kit with Connectors, Tools and 100 m (328 ft) Cable	1202-CBL-KIT-100M
DPI Cable Connector Kit	1202-TB-KIT-SET
DPI/SCANport™ One to Two Port Splitter Cable	1203-S03

(1) Includes a 1202-C30 interface cable (3 m) for connection to drive.
(2) Required only when HIM is used as handheld or remote.
(3) Required in addition to 20-HIM-H10 for distances up to a total maximum of 10 m (32.8 ft).

PowerFlex 750-Series Drives Option Kits

This section provides information for PowerFlex 750-Series drives option kits.

PowerFlex 750-Series Drives Option Kits

Cat. No.	Description		Frame Size
20-750-TAPS-XT	Auxiliary power supply	24V auxiliary power supply. Publication 750-IN111.	1...7
20-750-DCBB3-F6	DC bus bar option kit	DC bus bars for 380...480V AC drives. Publication 750-IN127.	6
20-750-DCBB3-F7			7
20-750-DCFH-51	DC fuse holders (Qty. 2 holders)	DC fuse and fuse holder kits are recommended for short circuit protection of PowerFlex 755TS DC input drives installed in common bus applications. Publication 750-IN121.	1...4
20-750-DCFH-NH1			1...7
20-750-DCFH-NH2			5...7
20-750-DCFH-NH3			5...7
20-750-DCFUSE1-nnA	DC fuse kit (Qty. 2 fuses)	Use with 20-750-DCFH-51 fuse holder.	1...4
20-750-DCFUSE3-nnA,		Use with 20-750-DCFH-NH1 fuse holder.	1...4
20-750-DCFUSE3S-nnnA			5...7
20-750-DCFUSE5S-nnnA		Use with 20-750-DCFH-NH2 fuse holder.	5...7
20-750-DCFUSE6S-nnnA		Use with 20-750-DCFH-NH3 fuse holder.	5...7
20-750-EMC6-F6	EMC C3 option kit (1)	EMC plate for 380...480V AC drives. Publication 750-IN124.	6
20-750-EMC6-F7			7
20-750-TFLNG1-F2	Flange mount adapter kit	Converts Open Type drive to external heatsink (flange) with NEMA/UL Type 1 integrity backside. This kit is for use with IP20, NEMA/UL Type 0 drives and does not provide an airtight or watertight seal. Where an airtight or watertight seal is required (for example, contaminated, dirty, or wet environments), use a drive with an "F" enclosure option. Publication 750-IN122.	2
20-750-TFLNG1-F3			3
20-750-TFLNG1-F4			4
20-750-TFLNG1-F5			5
20-750-TFLNG1-F6		Converts Open Type drive to external heatsink (flange) with NEMA/UL Type 4X/12 integrity backside. Publication 750-IN123.	6
20-750-TFLNG1-F7			7
20-750-NEMA1-F1	NEMA/UL Type 1 option kit	Provides NEMA/UL Type 1 IEC 60529 IP20 rating. Publication 750-IN008.	1
20-750-NEMA1-F2			2
20-750-NEMA1-F3			3
20-750-NEMA1-F4			4
20-750-NEMA1-F5			5
20-750-NEMA1-F6			6
20-750-NEMA1-F7			7
20-750-TNEMA1-F3	NEMA/UL Type 1 option kit - Frame 3	Provides NEMA/UL Type 1 IEC 60529 IP20 rating for 40 HP/30 kW ND frame 3 drives. Publication 750-IN008.	3
20-750-ACTE1-F6	Power terminal extension	Allows connection of two parallel leads to the AC power terminals. Publication 750-IN012.	6
20-750-PTG1-F6	Power terminal guard	Provides additional protection against contact with the power terminals. Publication 750-IN126.	6
20-750-PTG1-F7			7
20-750-TSTAM-CD-XT	Torque accuracy module	Precise torque control for PowerFlex 755TS drives. Publication 750-IN120.	2...7

(1) EMC C3 brackets are factory installed on drive frames 2...5 and provided loose with frame 1 drives. Replacement EMC C3 bracket kits (SK-RT-EMC3-Fx) are also available. See the PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119 for installation instructions.

Communication Option Kits and Accessories

This section provides information for communication option kits and accessories.

Communication Option Kits and Accessories

Cat. No.	Description (see page 96 for specifications)	Publication
20-750-CNETC (1)	Coaxial ControlNet option module	750COM-UM003
20-750-DNET (1)	DeviceNet option module	750COM-UM002
20-750-ENETR (1)	Dual-port EtherNet/IP option module	750COM-UM008
20-750-PBUS	Series B PROFIBUS DPV1 option module	750COM-UM004
20-750-PNET	Series B Single-port Profinet I/O option module	750COM-UM007
20-750-PNET2P	Series B Dual-port Profinet I/O option module	750COM-UM007
20-750-TLINK-XT	Fast synchronized data transfer module	750COM-IN100
1203-USB	Universal serial bus (USB) converter includes 2 m (6.6 ft) USB, 20-HIM-H10, and 22-HIM-H10 cables	DRIVES-UM001
1786-TPS	ControlNet T-tap straight	1786-IN007

(1) See Knowledgebase Technote *Explicit (CIP) Messaging PowerFlex 755T* for detailed information about using explicit messaging with option modules 20-750-CNETC, 20-750-DNET, or 20-750-ENETR.

Environmental Specifications – Communication Modules

Attribute	Description
Temperature Operating Storage	 -20...+60 °C (-4...+140 °F) -40...+85 °C (-40...+185 °F)
Relative humidity	5...95% noncondensing
Atmosphere	**IMPORTANT:** Do not install the module in an area where the ambient atmosphere contains volatile or corrosive gas, vapors, or dust. If the module is not going to be installed right away, store the module in an area where it is not exposed to a corrosive atmosphere.

Communication Options and Accessories Specifications

Attribute	20-750-CNETC	20-750-DNET	20-750-ENETR	20-750-PBUS	20-750-PNET 20-750-PNET2P	1203-USB
Network Protocol Data rate	 ControlNet 5 Mbps (fixed)	 DeviceNet 125 Kbps, 250 Kbps, and 500 Kbps	 EtherNet/IP 10/100 Mbps, Half/Full Duplex	 PROFIBUS 9600 bps...12 Mbps (autobauds)	 Profinet 10/100 Mbps	 Universal Serial Bus (USB) 115.2 Kbps
Drive Protocol Data rates	 DPI 500 Kbps	 DPI 500 Kbps	 DPI 500 Kbps	 DPI 500 Kbps	 DPI 500 Kbps	 SCANport, DPI, or DSI 125, 125/500, 19.2 Kbps
Consumption Drive (DPI) Network	 250 mA at 14V DC None	 50 mA at 14V DC 60 mA at 24V DC	 250 mA at 14V DC None	 250 mA at 14V DC None	 250 mA at 14V DC None	 130 mA at 12V DC 170 mA at +5V DC (DSI)
Dimensions H x L x W mm (in)	 68.0 x 150.0 x 26.0 (2.70 x 5.90 x 1.00)	 68.0 x 150.0 x 26.0 (2.70 x 5.90 x 1.00)	 68.0 x 150.0 x 26.0 (2.70 x 5.90x 1.00)	 16.0 x 130.0 x 83.0 (0.63 x 5.12 x 3.27)	 16.0 x 130.0 x 83.0 (0.63 x 5.12 x 3.27)	 103.5 x 73.4 x 23.6 (4.08 x 2.89 x 0.93)
Weight g (oz)	 62 (2.1)	 62 (2.1)	 62 (2.1)	 57 (2.0)	 60 (2.0)	 71 (2.5)
Compliance UL c-UL CE RCM	 UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	 UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	 UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	 UL508C CAN/ CSA C22.2 No.14 IEC61800-3 EN61800-3	 UL508C CAN/CSA C22.2 No. 14 EN61800-3 EN61800-3	 UL508C CAN/CSA C22.2 No. 14 — —

Feedback Options

This section provides information for the feedback options.

Cat. No.	Description
20-750-ENC-1 (1)	Incremental encoder
20-750-DENC-1 (1)	Dual incremental encoder
20-750-UFB-1 (2)	Universal feedback board (includes Stegmann, Heidenhain, SSI, Biss, 5V incremental)

(1) Homing and registration functions are not supported when using this device with Studio 5000 Logix Designer© embedded motion instructions. To use the homing and registration functions, you must use the Universal Feedback Board (catalog number 20-750-UFB-1).

(2) Only PowerFlex 755 drives.

This table specifies which encoder type combinations work on a universal feedback board (UFB).

Encoder Combinations Compatible with Universal Feedback Board

Encoder on Channel 1 \ Encoder on Channel 0	None	EnDat SC	Hiperface SC	BiSS SC	SSI SC	EnDat FD ChX	EnDat FD ChY	BiSS FD ChX	BiSS FD ChY	SSI FD ChX	SSI FD ChY	SinCos only	Incmtl A B Z	Incmtl SC	LinTempo ChX	LinTempo ChY	LinStahN ChX	LinStahl ChY	Lin SSI ChX	Lin SSI ChY
None	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
EnDat SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Hiperface SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
BiSS SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SSI SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
EnDat FD ChX	C	C	C	C	C	N	N	N	C	N	C	C	C	C	N	C	N	C	N	C
EnDat FD ChY	C	C	C	C	C	N	N	C	N	C	N	C	C	C	C	N	C	N	C	N
BiSS FD ChX	C	C	C	C	C	N	C	N	N	N	C	C	C	C	N	C	N	C	N	C
BiSS FD ChY	C	C	C	C	C	C	N	N	N	C	N	C	C	C	C	N	C	N	C	N
SSI FD ChX	C	C	C	C	C	N	C	N	N	N	C	C	C	C	N	C	N	C	N	C
SSI FD ChY	C	C	C	C	C	C	N	C	C	N	N	C	C	C	C	N	C	N	C	N
SinCos only	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Incmtl A B Z	C	C	C	C	C	C	C	C	C	C	C	C	N	C	C	C	C	C	C	C
Incmtl SC	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
LinTempo ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
LinTempo ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N
LinStahl ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
LinStahl ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N
Lin SSI ChX	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N	C
Lin SSI ChY	C	C	C	C	C	C	N	C	N	C	N	C	C	C	C	N	C	N	C	N

C	Compatible
N	Not compatible

I/O Option Kits

This section provides information for the I/O option kits.

Cat. No.	Description[1]	Publication
20-750-ATEX	ATEX Option Module with 1 Thermosensor Input Connection (requires 11-Series I/O Module below)	750-UM003
20-750-1132C-2R	24V DC 11-Series I/O Module with 1 Analog In, 1 Analog Out, 3 Digital In and 2 Relay Outputs	750-IN111
20-750-1133C-1R2T	24V DC 11-Series I/O Module with 1 Analog In, 1 Analog Out, 3 Digital In, 1 Relay and 2 Transistor Outputs	
20-750-1132D-2R	115V AC 11-Series I/O Module with 1 Analog In, 1 Analog Out, 3 Digital In and 2 Relay Outputs	
20-750-2262C-2R	24V DC 22-Series I/O Module with 2 Analog In, 2 Analog Out, 6 Digital In and 2 Relay Outputs	
20-750-2262D-2R	115V AC 22-Series I/O Module with 2 Analog In, 2 Analog Out, 6 Digital In and 2 Relay Outputs	
20-750-2263C-1R2T	24V DC 22-Series I/O Module with 2 Analog In, 2 Analog Out, 6 Digital In, 3 Digital Out, 1 Relay and 2 Transistor Outputs	

(1) I/O option kits are not allowed in CIP motion mode.

Safety Options

Four safety options are available for PowerFlex 755TS products.

Cat. No.	Description	Publication
20-750-S [1]	Safe Torque Off	750-UM002
20-750-S1 [1][2]	Safe Speed Monitor	750-RM001
20-750-S3 [1]	Integrated Safety - Safe Torque Off	750-UM004
20-750-S4 [1]	Network Safe Speed Monitor	750-UM005

(1) Drive can accommodate only one option.
(2) Requires the dual incremental encoder or universal feedback option.

Safe Torque Off is ideal for safety related applications requiring removal of rotational power to the motor without shutting down the drive. Safe Torque Off functionality offers the benefit of quick start-up after a demand on the safety system and helps reduce wear from repetitive start-up and provides safety ratings up to and including SIL CL3, PLe, and Category 3.

In applications where the speed needs to be controlled and monitored, the Safe-Speed Monitor option combines Safe Torque Off capability with integrated safety relay functionality and the Safe-Speed Control technology in one hardware option to provide safety ratings up to and including SIL CL3, PLe, and Category 4.

With the Safe Speed Monitor option you can safely monitor and control the speed of your application which allows operators to perform process or maintenance work without stopping the machine.

Note that PowerFlex 755TS products can accommodate only one option.

Specifications - PowerFlex 750-Series Safety Options

Attribute	Safe Torque Off, 20-750-S	Safe Speed Monitor, 20-750-S1
Standards	IEC/EN60204-1, ISO13489-1, IEC 61508, IEC 61800-5-2	IEC/EN60204-1, ISO12100, IEC 61508, IEC 61800-5-2
Safety Category	Cat. 3 and PL(e) per EN ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061	Cat. 4 and PL(e) per EN ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061
Power Supply (user I/O)	24V DC ±10%, 0.8...1.1 x rated voltage (3) PELV or SELV	
Power Consumption	4.4 W	36 W
Safety Enable (SE+, SE–)	24V DC, 22 mA, short-circuit protected	—
Safety Power (SP+, SP–)	24V DC, 35 mA, short-circuit protected	—
SLS Outputs (68, 78)	—	24V DC, 50 mA, short-circuit protected
SS Outputs (34, 44)	—	24V DC, 50 mA, short-circuit protected
Door Control Outputs (51, 52)	—	24V DC, short-circuit protected, 0.75 A bipolar (Power to Release/ Power to Lock) configuration. 20 mA, cascading (2Ch Source) configuration.
Pulse Outputs (S11, S21)	—	24V DC, 50 mA, short-circuit protected
Pulse Inputs (S12, S22, S32, S42, S52, S62, S72, S82, X32, X42)	—	5 mA per input, max
Input ON Voltage, Minimum	24V DC ±10%, 21.6...26.4V DC	15V
Input OFF Voltage, Maximum	5V	5V
Input OFF Current, Maximum	2.5 mA @ 5V DC	2 mA
Input-to-Output Response Time (SS_In, SLS_In, DM_In, ESM_In, LM_In)	—	20 ms
Overspeed Response Time	—	User-configurable
Inputs (S34)	—	5 mA per input, max
Conductor Size (1)	0.3...0.8 mm^2 (28...18 AWG)	0.25...2.5 mm^2 (24...14 AWG)
Strip Length	10 mm (0.39 in.)	6 mm (0.25 in.)
Terminal Screw Torque	—	0.2...0.25 N•m (1.8...2.2 lb•in)
Certification (2)		
c-UL-us	UL Listed, certified for US and Canada.	
CE	European Union 2004/108/EC EMC Directive, and EU 2006/42/EC Machinery Directive EN 61800-3; categories C2 and C3 EN 62061; EM Immunity EN ISO 13849-1 EN ISO 13849-2 EN 61800-5-1 EN 61800-5-2 EN 61508 Parts 1-7	
C-Tick	Australian Radiocommunications Act, compliant with: EN 61800-3; categories C2 and C3	
TÜV	TÜV Certified for Functional Safety: up to SIL CL3, according to EN 61800-5-2, EN 61508, and EN 62061; up to Performance Level PL(e) and Category 3, according to EN ISO 13849-1; when used as described.	TÜV Certified for Functional Safety: up to SIL CL3, according to EN 61800-5-2, EN 61508, and EN 62061; up to Performance Level PL(e) and Category 4, according to EN ISO 13849-1; when used as described.

(1) See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(2) When product is marked.
(3) Safety outputs need additional fuse for reverse voltage protection of the control circuit. Install a 6 A slow-blow or 10 A fast-acting fuse.

Specifications - Network Safety Options

Attribute	Network Safe Torque Off, 20-750-S3	Network Safe Speed Monitor, 20-750-S4
Standards	EN 60204-1, IEC 61508, EN 61800-3, EN 61800-5-1, EN 61800-5-2, EN 62061, EN ISO 13489	EN 60204-1, IEC 61508, EN 61800-3, EN 61800-5-1, EN 61800-5-2, EN 62061, EN ISO 13849-1
Safety category	Cat. 3 and PLe per ISO 13849-1; SIL CL3 per IEC 61508 and EN 62061	Cat. 4 and PLe per EN ISO 13849-1; SIL 3 per IEC 61508 and SIL CL3 per EN IEC 62061
Power supply (user I/O)	24V DC ±10%, 0.8...1.1 x rated voltage(1) PELV or SELV	24V DC ±10%, 0.8...1.1 x rated voltage(1) PELV or SELV
Input type	Current sinking	Current sinking
Voltage, on-state input	11...30V, 3.5 mA DC	11...30V DC
Voltage, off-state input, max	5V, 3.5 mA DC	-3...+5V DC
Current, on-state input, min	3.3 mA	2 mA
Current, off-state, max	1.3 mA	1.5 mA
IEC 61131-2 (input type)	Type 3	Type 3
Conductor type	Multi-conductor shielded cable	Multi-conductor shielded cable
Conductor size (2)	0.3...0.8 mm^2 (28...18 AWG)	0.3...0.8 mm^2 (28...18 AWG)
Strip length	10 mm (0.39 in.)	10 mm (0.39 in.)

(1) Safety outputs need additional fuse for reverse voltage protection of the control circuit. Install a 6 A slow-blow or 10 A fast-acting fuse.
(2) See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Internal Dynamic Brake Resistor Kits

These resistors have a limited duty cycle. To determine whether an internal resistor is sufficient for your application, see the PowerFlex Dynamic Braking Resistor Calculator Application Technique, publication PFLEX-AT001. An external resistor can be required.

Cat. No.	Drive Input Voltage	Frame	Rating (ND kW)	Rating (ND Hp)	Brake Resistance
20-750-DB1-D1	200...240V AC	1	0.37...0.75	0.5...1	62 Ω
20-750-DB1-B1			1.5...4	2...5	22 Ω
20-750-DB1-B2		2	0.37...5.5	0.5...7.5	22 Ω
20-750-DB1-D1A	380...480V AC	1	0.75...2.2	1...3	115 Ω
20-750-DB1-D1			4...7.5	5...10	62 Ω
20-750-DB1-D2		2	0.75...11	1...15	62 Ω

Terminators

This table provided information for terminators.

Cat. No.	Description (1)
1204-TFA1	For use with 3.7 kW (5 Hp) and lower drives.
1204-TFB2	For use with 1.5 kW (2 Hp) and higher drives.

(1) For selection information, see Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

Reflected Wave Reduction Modules with Common Mode Choke

This table provided information for reflected wave reduction modules with common mode choke.

Cat. No.	Description [1]
1204-RWC-17-A	17 A with common mode choke

(1) For selection information, see Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

Reflected Wave Reduction Modules

This table provides information for reflected wave reduction modules.

ND kW	ND Hp	Cat. No.
		380...480V AC
4	5	1321-RWR8-DP
5.5	7.5	1321-RWR12-DP
7.5	10	1321-RWR18-DP
11	15	1321-RWR25-DP
15	20	1321-RWR35-DP
18.5	25	1321-RWR35-DP
22	30	1321-RWR45-DP
30	40	1321-RWR55-DP
37	50	1321-RWR80-DP
45	60	1321-RWR80-DP
55	75	1321-RWR100-DP
75	100	1321-RWR130-DP
90	125	1321-RWR160-DP
110	150	1321-RWR200-DP
132	200	1321-RWR250-DP
187	250	1321-RWR320-DP

Isolation Transformers

This section provides information for isolation transformers.

Figure 1 - IP32, NEMA/UL Type 3R Standalone, 4...6% Nominal Impedance

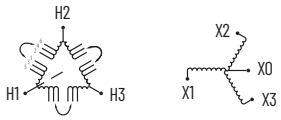


Diagram 1

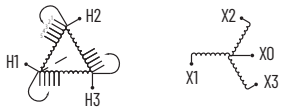


Diagram 2

460V, 60 Hz, Three-phase, 460V Primary and 460V Secondary

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
0.75	1	1	1321-3TW005-BB
1.5	2	1	1321-3TW005-BB
2.2	3	1	1321-3TW005-BB
22	30	2	1321-3TW040-BB
30	40	2	1321-3TW051-BB
37	50	2	1321-3TH063-BB
45	60	2	1321-3TH075-BB
55	75	2	1321-3TH093-BB
75	100	2	1321-3TH118-BB
90	125	2	1321-3TH145-BB

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
110	150	2	1321-3TH175-BB
149	200	2	1321-3TH220-BB
187	250	2	1321-3TH275-BB
224	300	2	1321-3TH330-BB
261	350	1	1321-3TH440-BB
298	400	1	1321-3TH440-BB
336	450	1	1321-3TH550-BB
373	500	1	1321-3TH550-BB
448	600	1	1321-3TH660-BB
485	650	1	–

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
522	700	1	1321-3TH770-BB
560	750	1	1321-3TH770-BB
597	800	1	1321-3TH880-BB
671	900	900 kVA	A 1321 isolation transformer solution is not available. Approximate drive kVA is shown at left.
746	1000	1000 kVA	
821	1100	1200 kVA	
933	1250	1200 kVA	
1007	1350	1300 kVA	
1119	1500	1500 kVA	
1492	2000	2000 kVA	

575V, 60 Hz, Three-phase, 575V Primary, and 575V Secondary

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
0.75	1	1	1321-3TW005-CC
1.5	2	1	1321-3TW005-CC
2.2	3	1	1321-3TW005-CC
22	30	2	1321-3TW040-CC
30	40	2	1321-3TW051-CC
37	50	2	1321-3TH063-CC
45	60	2	1321-3TH075-CC
55	75	2	1321-3TH093-CC
75	100	1	1321-3TH118-CC

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
90	125	1	1321-3TH145-CC
110	150	1	1321-3TH175-CC
149	200	1	1321-3TH220-CC
187	250	1	1321-3TH275-CC
224	300	1	1321-3TH330-CC
261	350	1	1321-3TH440-CC
298	400	1	1321-3TH550-CC
336	450	1	1321-3TH550-CC
373	500	1	1321-3TH660-CC

Motor Rating		Wiring Diagram	Cat. No.
kW	Hp		
410	550	1	1321-3TH660-CC
448	600	1	1321-3TH770-CC
522	700	1	1321-3TH770-CC
597	800	1	1321-3TH880-CC
671	900	950 kVA	A 1321 isolation transformer solution is not available. Approximate drive kVA is shown at left.
709	950	1000 kVA	
746	1000	1100 kVA	
895	1200	1200 kVA	
1119	1500	1500 kVA	

Input and Output Reactors

This section provides information for input and output reactors.

380...480V, 50/60 Hz, Three-phase, 3% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.75	1	Normal	1321-3R2-A	1321-3RA2-A	1321-3R2-A	1321-3RA2-A
1.1	1.5	Heavy	1321-3R4-C	1321-3RA4-C	1321-3R4-B	1321-3RA4-B
1.5	2	Normal	1321-3R4-B	1321-3RA4-B	1321-3R4-B	1321-3RA4-B
		Heavy	1321-3R4-B	1321-3RA4-B	1321-3R8-C	1321-3RA8-C
2.2	3	Normal	1321-3R8-C	1321-3RA8-C	1321-3R8-C	1321-3RA8-C
		Heavy	1321-3R8-C	1321-3RA8-C	1321-3R8-B	1321-3RA8-B
4	5	Normal	1321-3R8-B	1321-3RA8-B	1321-3R8-B	1321-3RA8-B
		Heavy	1321-3R8-B	1321-3RA8-B	1321-3R12-B	1321-3RA12-B
5.5	7.5	Normal	1321-3R12-B	1321-3RA12-B	1321-3R12-B	1321-3RA12-B
		Heavy	1321-3R12-B	1321-3RA12-B	1321-3R18-B	1321-3RA18-B
7.5	10	Normal	1321-3R18-B	1321-3RA18-B	1321-3R18-B	1321-3RA18-B
		Heavy	1321-3R18-B	1321-3RA18-B	1321-3R25-B	1321-3RA25-B
11	15	Normal	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
		Heavy	1321-3R25-B	1321-3RA25-B	1321-3R25-B	1321-3RA25-B
15	20	Normal	1321-3R35-B	1321-3RA35-B	1321-3R25-B	1321-3RA25-B
		Heavy	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
18.5	25	Normal	1321-3R35-B	1321-3RA35-B	1321-3R35-B	1321-3RA35-B
		Heavy	1321-3R35-B	1321-3RA35-B	1321-3R45-B	1321-3RA45-B
22	30	Normal	1321-3R45-B	1321-3RA45-B	1321-3R45-B	1321-3RA45-B
		Heavy	1321-3R45-B	1321-3RA45-B	1321-3R55-B	1321-3RA55-B
30	40	Normal	1321-3R55-B	1321-3RA55-B	1321-3R55-B	1321-3RA55-B
		Heavy	1321-3R55-B	1321-3RA55-B	1321-3R80-B	1321-3RA80-B
37	50	Normal	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
		Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
45	60	Normal	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
		Heavy	1321-3R80-B	1321-3RA80-B	1321-3R80-B	1321-3RA80-B
55	75	Normal	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
		Heavy	1321-3R100-B	1321-3RA100-B	1321-3R100-B	1321-3RA100-B
75	100	Normal	1321-3R130-B	1321-3RA130-B	1321-3R130-B	1321-3RA130-B
		Heavy	1321-3R130-B	1321-3RA130-B	1321-3R130-B	1321-3RA130-B
90	125	Normal	1321-3R160-B	1321-3RA160-B	1321-3R160-B	1321-3RA160-B
		Heavy	1321-3R160-B	1321-3RA160-B	1321-3R160-B	1321-3RA160-B
110	150	Normal	1321-3R200-B	1321-3RA200-B	1321-3R200-C	1321-3RA200-C
		Heavy	1321-3R200-B	1321-3RA200-B	1321-3R200-C	1321-3RA200-C

380...480V, 50/60 Hz, Three-phase, 3% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
–	200	Normal/Heavy	1321-3RB250-B	1321-3RAB250-B	1321-3RB250-B	1321-3RAB250-B
132	–	Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B
160	250	Normal/Heavy	1321-3RB320-B	1321-3RAB320-B	1321-3RB320-B	1321-3RAB320-B
–	300	Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
200	–	Normal/Heavy	1321-3RB400-B	1321-3RAB400-B	1321-3RB400-B	1321-3RAB400-B
–	350	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
250	–	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
270	–	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B
–	400	Normal/Heavy	1321-3R500-B	1321-3RA500-B	1321-3R500-B	1321-3RA500-B

380...480V, 50/60 Hz, Three-phase, 5% Impedance

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.75	1	Normal	1321-3R2-B	1321-3RA2-B	1321-3R2-B	1321-3RA2-B
1.1	1.5	Heavy	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
1.5	2	Normal	1321-3R4-D	1321-3RA4-D	1321-3R4-D	1321-3RA4-D
		Heavy	1321-3R4-D	1321-3RA4-D	1321-3R8-D	1321-3RA8-D
2.2	3	Normal	1321-3R8-D	1321-3RA8-D	1321-3R8-D	1321-3RA8-D
		Heavy	1321-3R8-D	1321-3RA8-D	1321-3R8-C	1321-3RA8-C
4	5	Normal	1321-3R8-C	1321-3RA8-C	1321-3R8-C	1321-3RA8-C
		Heavy	1321-3R8-C	1321-3RA8-C	1321-3R12-C	1321-3RA12-C
5.5	7.5	Normal	1321-3R12-C	1321-3RA12-C	1321-3R12-C	1321-3RA12-C
		Heavy	1321-3R12-C	1321-3RA12-C	1321-3R18-C	1321-3RA18-C
7.5	10	Normal	1321-3R18-C	1321-3RA18-C	1321-3R18-C	1321-3RA18-C
		Heavy	1321-3R18-C	1321-3RA18-C	1321-3R25-C	1321-3RA25-C
11	15	Normal/Heavy	1321-3R25-C	1321-3RA25-C	1321-3R25-C	1321-3RA25-C
15	20	Normal	1321-3R35-C	1321-3RA35-C	1321-3R25-C	1321-3RA25-C
		Heavy	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
18.5	25	Normal	1321-3R35-C	1321-3RA35-C	1321-3R35-C	1321-3RA35-C
		Heavy	1321-3R35-C	1321-3RA35-C	1321-3R45-C	1321-3RA45-C
22	30	Normal	1321-3R45-C	1321-3RA45-C	1321-3R45-C	1321-3RA45-C
		Heavy	1321-3R45-C	1321-3RA45-C	1321-3R55-C	1321-3RA55-C
30	40	Normal	1321-3R55-C	1321-3RA55-C	1321-3R55-C	1321-3RA55-C
		Heavy	1321-3R55-C	1321-3RA55-C	1321-3R80-C	1321-3RA80-C
37	50	Normal	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
		Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C

380...480V, 50/60 Hz, Three-phase, 5% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
45	60	Normal/Heavy	1321-3R80-C	1321-3RA80-C	1321-3R80-C	1321-3RA80-C
55	75	Normal/Heavy	1321-3R100-C	1321-3RA100-C	1321-3R100-C	1321-3RA100-C
75	100	Normal/Heavy	1321-3R130-C	1321-3RA130-C	1321-3R130-C	1321-3RA130-C
90	125	Normal/Heavy	1321-3R160-C	1321-3RA160-C	1321-3R160-C	1321-3RA160-C
110	150	Normal	1321-3R200-C	1321-3RA200-C	1321-3R200-C	1321-3RA200-C
		Heavy	1321-3R200-C	1321-3RA200-C	1321-3R200-C	1321-3RA200-C
–	200	Normal/Heavy	1321-3RB250-C	1321-3RAB250-C	1321-3RB250-C	1321-3RAB250-C
132	–	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
160	250	Normal/Heavy	1321-3RB320-C	1321-3RAB320-C	1321-3RB320-C	1321-3RAB320-C
–	300	Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
200	–	Normal/Heavy	1321-3RB400-C	1321-3RAB400-C	1321-3RB400-C	1321-3RAB400-C
–	350	Normal/Heavy	1321-3R500-C	1321-3R500-C	1321-3R500-C	1321-3R500-C
250	–	Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
270	–	Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
–	400	Light/Normal/Heavy	1321-3R500-C	1321-3RA500-C	1321-3R500-C	1321-3RA500-C
315	–	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
336	450	Normal/Heavy	1321-3RA600-C	1321-3RA600-C	1321-3R500-C	1321-3RA500-C
–	450	Light/Normal/Heavy	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
355	–	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	500	Light	1321-3R600-C	1321-3RA600-C	1321-3R600-C	1321-3RA600-C
–	–	Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
400	–	Light/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
		Normal	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	600	Light/Normal/Heavy	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
450	–	Light	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
500	–	Normal/Heavy	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
–	650	Light	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	–	Normal	1321-3R750-C	1321-3RA750-C	1321-3R750-C	1321-3RA750-C
–	700	Light/Normal/Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	750	Heavy	1321-3R850-C	1321-3RA850-C	1321-3R850-C	1321-3RA850-C
–	800	Light/Normal/Heavy	1321-3R1000-C	1321-3RA1000-C	1321-3R1000-C	1321-3RA1000-C
560	–	Light/Normal/Heavy	1321-3R600-C (1)	1321-3RA600-C (1)	1321-3R600-C (1)	1321-3RA600-C (1)
630	–	Light/Normal/Heavy	1321-3R600-C (1)	1321-3RA600-C (1)	1321-3R600-C (1)	1321-3RA600-C (1)
–	900	Light/Normal/Heavy	1321-3R600-C (1)	1321-3RA600-C (1)	1321-3R600-C (1)	1321-3RA600-C (1)
710	–	Light/Normal/Heavy	1321-3R600-C (1)	1321-3RA600-C (1)	1321-3R600-C (1)	1321-3RA600-C (1)
–	1000	Light/Normal/Heavy	1321-3R600-C (1)	1321-3RA600-C (1)	1321-3R600-C (1)	1321-3RA600-C (1)

380...480V, 50/60 Hz, Three-phase, 5% Impedance (Continued)

kW	Hp	Duty	Input Line Reactor		Output Load Reactor	
			IP00 (Open Style)	IP11 (NEMA/UL Type 1)	IP00 (Open Style)	IP11 (NEMA/UL Type 1)
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
–	1100	Light/Normal	1321-3R750-C (1)	1321-3RA750-C (1)	1321-3R750-C (1)	1321-3RA750-C (1)
800	–	Light/Normal	1321-3R750-C (1)	1321-3RA750-C (1)	1321-3R750-C (1)	1321-3RA750-C (1)
850	–	Light/Normal	1321-3R750-C (1)	1321-3RA750-C (1)	1321-3R750-C (1)	1321-3RA750-C (1)
–	1250	Light/Normal	1321-3R750-C (1)	1321-3RA750-C (1)	1321-3R750-C (1)	1321-3RA750-C (1)
900	–	Light	1321-3R850-C (1)	1321-3RA850-C (1)	1321-3R850-C (1)	1321-3RA850-C (1)
–	1350	Light	1321-3R850-C (1)	1321-3RA850-C (1)	1321-3R850-C (1)	1321-3RA850-C (1)
–	1500	Light	1321-3R850-C (2)	1321-3RA850-C (2)	1321-3R850-C (2)	1321-3RA850-C (2)
1000	–	Light	1321-3R850-C (2)	1321-3RA850-C (2)	1321-3R850-C (2)	1321-3RA850-C (2)
–	2000	Light	1321-3R850-C (2)	1321-3RA850-C (2)	1321-3R850-C (2)	1321-3RA850-C (2)
1400	–	Light	1321-3R850-C (2)	1321-3RA850-C (2)	1321-3R850-C (2)	1321-3RA850-C (2)

(1) Requires two reactors that are wired in parallel.
(2) Requires three reactors that are wired in parallel.

Additional Resources

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

Resource	Description
PowerFlex 755TM IP00 Open Type Kits Technical Data, publication 750-TD101	Provides detailed information on: • Kit selection • Kit ratings and specifications • Option specifications
PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119	Provides the basic steps to install PowerFlex 755TL low harmonic drives, PowerFlex 755TR regenerative drives, and PowerFlex 755TM drive systems.
PowerFlex TotalFORCE Firmware Documentation Set: • PowerFlex Drives with TotalFORCE Control Programming Manual, publication 750-PM101 • PowerFlex Drives with TotalFORCE Control Parameters Reference Data, publication 750-RD101 • PowerFlex Drives with TotalFORCE Control Conditions Reference Data, publication 750-RD102	Provides detailed information on: • Startup, control algorithms, and status indicators • Parameters and programming • Faults, alarms, events, and troubleshooting
PowerFlex Low Voltage Drives Selection Guide, publication PFLEX-SG002	Provides overview and selection information for PowerFlex low voltage drive products.
Drives in Common Bus Configurations with PowerFlex 755TM Bus Supplies Application Techniques, publication DRIVES-AT005	Provides basic information to properly wire and ground the following products in common bus applications: • PowerFlex 755TM drive system for common bus solutions • PowerFlex 750-Series AC and DC input drives • Kinetix 5700 servo drives
PowerFlex 755T Flux Vector Tuning, publication 750-AT006	Provides guidance on how to tune Flux Vector position and velocity loops, filters, and other features to achieve the level of performance that is required for a given application. This publication is intended for novice drives users and users with advanced skills.
PowerFlex Drives with TotalFORCE Control Built-in EtherNet/IP Adapter User Manual, publication 750COM-UM009	Provides information on how to install, configure, and troubleshoot applications for the PowerFlex drives with the built-in EtherNet/IP adapter.
PowerFlex 755TS Products with TotalFORCE Control Hardware Service Manual, publication 750-TG101	Provides detailed information on: • Preventive maintenance • Component testing • Hardware replacement procedures
PowerFlex 750-Series Safe Speed Monitor Option Module Safety Reference Manual, publication 750-RM001	These publications provide detailed information on installation, set-up, and operation of the 750-Series safety option modules.
PowerFlex 750-Series Safe Torque Off Option Module User Manual, publication 750-UM002	
PowerFlex 750-Series ATEX Option Module User Manual, publication 750-UM003	
PowerFlex 755 Integrated Safety - Safe Torque Off Option Module User Manual, publication 750-UM004	
PowerFlex 755/755T Integrated Safety Functions Option Module User Manual, publication 750-UM005	
PowerFlex 20-HIM-A6 / -C6S HIM (Human Interface Module) User Manual, 20HIM-UM001	Provides detailed information on HIM components, operation, and features.
PowerFlex 755TM AC Precharge Modules Unpacking and Lifting Instructions, publication 750-IN102	These publications provide detailed information on: • Component weights • Precautions and recommendations • Hardware attachment points • Lifting the component out of the packaging
PowerFlex 755TM DC Precharge Modules Unpacking and Lifting Instructions, publication 750-IN103	
PowerFlex 755TM Power and Filter Modules Unpacking and Lifting Instructions, publication 750-IN104	
PowerFlex 750-Series Service Cart Instructions, publication 750-IN105	Provides detailed set-up and operating instructions for the module service cart and DC precharge module lift.
PowerFlex 755TM Power and Filter Module Storage Hardware Instructions, publication 750-IN106	Provides detailed installation and usage instructions for this hardware accessory.
PowerFlex 750-Series Products with TotalFORCE Control Product Information, publication 750-PC100	These publications identify technical documentation resources that can be obtained on-line at http://www.rockwellautomation.com/global/literature-library/overview.page.
PowerFlex 755TM IP00 Open Type Kits Product Information, publication 750-PC101	
PowerFlex 755TM UL-Listed Accessories Product Information, publication 750-PC102	
PowerFlex 755TM Accessories Product Information, publication 750-PC103	
PowerFlex 750-Series Products with TotalFORCE Control Renewal Parts, publication 750-PC104	

Resource	Description
Industry Installation Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-AT003	Provides basic information on enclosure systems, considerations to help protect against environmental contaminants, and power and grounding considerations for installing Pulse Width Modulated (PWM) AC drives.
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001	Provides basic information to properly wire and ground PWM AC drives.
EtherNet/IP Network Devices User Manual, ENET-UM006	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, ENET-RM002	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
CIP Security Application Technique, SECURE-AT001	Describes how to plan an implement a Rockwell Automation system that support the CIP Security protocol.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.
Rockwell Automation Knowledge Base	The Rockwell Automation Support Forum

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

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Publication 750-TD104A-EN-P - March 2022

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