Units—2163Q

Combination PowerFlex 70 AC Variable Frequency Drive (VFD) Units with Circuit Breaker, 220-240V

- See page 150 for product description.
- All PowerFlex ratings are **Normal Duty**.
- Branch circuit (overload) protection is provided by the internal drive overload.
- See page 239 for Combination Unit Short Circuit Withstand Ratings table.
- Wiring is Type A only. Drive can accept 16AWG control wire only.
- Proper placement of drive units in the MCC is essential for proper operation and life cycle of the drive. Strong consideration should be given to placing units with drives at the bottom of the section. When more than one drive unit is placed in a section, the drive unit with the highest rating should be located at the bottom of the section.
- Do not mount transformer units below drive units. Heat from transformer units may cause drive to trip.
- HIM (Human Interface Module) is required. Select on page 187.
- PowerFlex 70 AC drives are cUL US (UL and cUL listed) as motor overload protective devices. An external overload relay is not required for single motor applications. PowerFlex 70 AC drives are not intended for use with single phase motors.

Maximum Continuous Output Amperes [1]	Nominal kW	Nominal HP	Space Factor	Catalog Number NEMA Type 1 and Type 1 w/ gasket [2]	Space Factor	Catalog Number NEMA 12 [2]	Delivery Program
	The horsepower and kW ratings shown are for reference only. PowerFlex 70 drive units should be sized according to the application and output ampere rating.						
	220-230V [3]	240V					
2.2	0.37	0.5	1.5	2163QA-2P2K_-_	2.0	2163QA-2P2J_-_	PE
4.2	0.55-0.75	0.75-1		2163QA-4P2K_-_		2163QA-4P2J_-_	
6.8	1.1-1.5	1.5-2		2163QA-6P8K_-_	2.5	2163QA-6P8J_-_	
9.6	2.2	3	2.0	2163QA-9P6K_-_	3.0	2163QA-9P6J_-_	
15.3	3.7	5		2163QA-015K_-_		2163QA-015J_-_	
22	5.5	7.5	2.5	2163QA-022K_-_		2163QA-022J_-_	
28	7.5	10		2163QA-028K_-_	3.5	2163QA-028J_-_	

[1] Ampere ratings are at a 4kHz carrier frequency. If carrier frequencies above 4kHz are selected, the drive output ampere ratings **must** be derated. For derating information, contact your local Rockwell Automation Sales Office and/or refer to *PowerFlex 70/700 Reference Manual*, PLEX-RM001*x*-EN-E.

[2] The catalog numbers listed are not complete:
- Select the voltage code from table on page 206 (e.g., 2163QA-2P2K**A**).
- If horsepower rated, select number from table on page 206 that corresponds to the nominal horsepower desired (e.g., 2163QA-2P2KA-**33**).
- If kilowatt rated, select number from table on page 206 that corresponds to the nominal kilowatt rating desired (e.g., 2163QA-2P2KA-**33K**).
- Select the appropriate suffix from Circuit Breaker Type table on page 212 to identify circuit breaker type (e.g., 2163QA-2P2KA-33**CA**).

[3] Units at these voltages are not UL listed or cUL listed.

Units—2163Q

Combination PowerFlex 70 AC Variable Frequency Drive (VFD) Units with Circuit Breaker, 380-480V

- See page 150 for product description.
- All PowerFlex ratings are **Normal Duty**.
- Branch circuit (overload) protection is provided by the internal drive overload.
- See page 239 for Combination Unit Short Circuit Withstand Ratings table.
- Wiring is Type A only. Drive can accept 16AWG control wire only.
- Proper placement of drive units in the MCC is essential for proper operation and life cycle of the drive. Strong consideration should be given to placing units with drives at the bottom of the section. When more than one drive unit is placed in a section, the drive unit with the highest rating should be located at the bottom of the section.
- Do not mount transformer units below drive units. Heat from transformer units may cause drive to trip.
- HIM (Human Interface Module) is required. Select on page 187.
- PowerFlex 70 AC drives are cUL US (UL and cUL listed) as motor overload protective devices. An external overload relay is not required for single motor applications. PowerFlex 70 AC drives are not intended for use with single phase motors.

Maximum Continuous Output Amperes [1]	Nominal kW	Nominal HP	Space Factor	Catalog Number NEMA Type 1 and Type 1 w/ gasket [2]	Space Factor	Catalog Number NEMA 12 [2]	Delivery Program
	The kW ratings shown below are for reference only. PowerFlex 70 drive units should be sized according to the application and output ampere rating.						
	380-415V[3]	480V					
1.1	—	0.5	1.5	2163QA-1P1K_-_	2.0	2163QA-1P1J_-_	SC
1.3	0.37	—		2163QA-1P3K_-_		2163QA-1P3J_-_	
2.1	0.55-0.75	0.75-1		2163QA-2P1K_-_		2163QA-2P1J_-_	
3.4	—	1.5-2		2163QA-3P4K_-_		2163QA-3P4J_-_	
3.5	1.1-1.5	—		2163QA-3P5K_-_		2163QA-3P5J_-_	
5	2.2	3		2163QA-5P0K_-_		2163QA-5P0J_-_	
8	—	5		2163QA-8P0K_-_	2.5	2163QA-8P0J_-_	
8.7	3.7	—		2163QA-8P7K_-_		2163QA-8P7J_-_	
11	—	7.5	2.0	2163QA-011K_-_	3.0	2163QA-011J_-_	
11.5	5.5	—		2163QA-011K_-_		2163QA-011J_-_	
14	—	10		2163QA-014K_-_		2163QA-014J_-_	
15.4	7.5	—		2163QA-015K_-_		2163QA-015J_-_	
22	11	15	2.5	2163QA-022K_-_		2163QA-022J_-_	
27	—	20		2163QA-027K_-_	3.5	2163QA-027J_-_	
30	15	—		2163QA-030K_-_		2163QA-030J_-_	

[1] Ampere ratings are at a 4kHz carrier frequency. If carrier frequencies above 4kHz are selected, the drive output ampere ratings **must** be derated. For derating information, contact your local Rockwell Automation Sales Office and/or refer to *PowerFlex 70/700 Reference Manual*, PLEX-RM001*x*-EN-E.

[2] The catalog numbers listed are not complete:
- Select voltage code from table on page 206 (e.g., 2163QA-1P3K**N**).
- Select kW rating code from table on page 206 that corresponds to the nominal kilowatt rating desired (e.g., 2163QA-1P3KN-**33K**).
- Select the appropriate suffix from the Circuit Breaker Type table on page 212 to identify circuit breaker type (e.g., 2163QA-1P3KN-33K**CA**).

[3] Units at these voltages are not UL listed or cUL listed.

Units—2163Q

Combination PowerFlex 70 AC Variable Frequency Drive (VFD) Units with Circuit Breaker, 600V

- See page 150 for product description.
- All PowerFlex ratings are **Normal Duty**.
- Branch circuit (overload) protection is provided by the internal drive overload.
- See page 239 for Combination Unit Short Circuit Withstand Ratings table.
- Wiring is Type A only. Drive can accept 16AWG control wire only.
- Proper placement of drive units in the MCC is essential for proper operation and life cycle of the drive. Strong consideration should be given to placing units with drives at the bottom of the section. When more than one drive unit is placed in a section, the drive unit with the highest rating should be located at the bottom of the section.
- Do not mount transformer units below drive units. Heat from transformer units may cause drive to trip.
- HIM (Human Interface Module) is required. Select on page 187.
- PowerFlex 70 AC drives are cUL US (UL and cUL listed) as motor overload protective devices. An external overload relay is not required for single motor applications. PowerFlex 70 AC drives are not intended for use with single phase motors.

Maximum Continuous Output Amperes [1]	Nominal HP The horsepower ratings shown below are for reference only. PowerFlex 70 AC drive units should be sized according to the application and output ampere rating.	Space Factor	Catalog Number NEMA Type 1 and Type 1 w/ gasket [2]	Space Factor	Catalog Number NEMA 12 [2]	Delivery Program
0.9	0.5	1.5	2163QA-0P9K_-_	2.0	2163QA-0P9J_-_	PE in U.S SC in Canada
1.7	0.75-1		2163QA-1P7K_-_		2163QA-1P7J_-_	
2.7	1.5-2		2163QA-2P7K_-_		2163QA-2P7J_-_	
3.9	3		2163QA-3P9K_-_		2163QA-3P9J_-_	
6.1	5		2163QA-6P1K_-_	2.5	2163QA-6P1J_-_	
9	7.5	2.0	2163QA-9P0K_-_	3.0	2163QA-9P0J_-_	
11	10		2163QA-011K_-_		2163QA-011J_-_	
17	15	2.5	2163QA-017K_-_		2163QA-017J_-_	
22	20		2163QA-022K_-_	3.5	2163QA-022J_-_	

[1] Ampere ratings are at a 4kHz carrier frequency. If carrier frequencies above 4kHz are selected, the drive output ampere ratings **must** be derated. For derating information, contact your local Rockwell Automation Sales Office and/or refer to *PowerFlex 70/700 Reference Manual*, PLEX-RM001*x*-EN-E.

[2] The catalog numbers listed are not complete:
- Select voltage code from table on page 206 (e.g., 2163QA-0P9K**C**).
- Select Hp rating code from table on page 206 that corresponds to the nominal horsepower rating desired (e.g., 2163QA-0P9KC-**33**).
- Select the appropriate suffix from the Circuit Breaker Type table on page 212 to identify circuit breaker type (e.g., 2163QA-0P9KC-33**CA**).

Control Voltage Type for Bulletins 2162, 2163, 2164, and 2165

Line Voltage	Voltage Code
220/230	P [1],[2]
240	A [2]
380	N [1],[2]
400	KN [1],[2]
415	I [1],[2]
480	B
600	C

[1] Units at these voltages are not UL listed or CSA certified.
[2] Not applicable to 2164 or 2165.

Horsepower Ratings for All Bulletins

Motor Hp	Number	Motor Hp	Number	Motor Hp	Number	Motor Hp	Number
0.125	30	3	38	40	46	250	56
0.25	31	5	39	50	47	300	57
0.33	32	7.5	40	60	48	350	58
0.50	33	10	41	75	49	400	59
0.75	34	15	42	100	50		
1	35	20	43	125	51	450	60
1.5	36	25	44	150	52	500	61
2	37	30	45	200	54		

kW Ratings for Bulletins 2154, 2155, 2162, and 2163 [1]

kW	Number	kW	Number
0.25	32K	37	47K
0.37	33K	45	48K
0.55	34K	55	49K
0.75	35K	75	50K
1.1	36K	90	51K
1.5	37K	110	52K
2.2	38K	132	53K
3.7	39K	150	54K
5.5	40K	160	55K
7.5	41K	185	56K
11	42K	200	57K
15	43K	220	58K
18.5	44K	250	59K
22	45K		
30	46K		

[1] kW rated units are not UL listed, cUL listed or CSA certified.

Circuit Breaker Type for Horsepower and kW Rated Units for Bulletins 2155E, 2155F, 2155G, 2155H and 2155J*

Rating (Amperes)	Instantaneous Circuit Breakers [1] (For motor applications where transient inrush currents exceed 13 times the full load current, contact your local Rockwell Automation Sales Office.)		Inverse Time (Thermal Magnetic or Solid-State) Circuit Breakers [2]					
	High I.C.		Standard I.C.		Medium I.C.		High I.C.	
	Suffix	Frame	Suffix	Frame	Suffix	Frame	Suffix	Frame
3	CA	HMCP	CT	FDB	CB	FD	CM	HFD
5								
9								
16								
24								
25								
30								
35								
37								
54								
97				FDB JD		FD [3]	CM	HFD [3] HJD
108		HMCP		JD		FD[4]	CM	HFD HJD
135		HMCP HMCP250		JD	—	—	CM	HJD
180		HMCP250 HMCP400		JD KD	—	—	CM	HJD HKD
201		HMCP250 HMCP400		JD KD	—	—	CM	HJD HKD
240		HMCP400 HMCP600		KD	—	—	CM	HKD
251		HMCP600		KD LD	—	—	CM	HKD HLD
317		HMCP600		LD	—	—	CM	HLD
360 - 361		HMCP600		LD	—	—	CM	HLD
480		HMCP600 [5]		LD	—	—	CM	HLD
500		HMCP600 [5]		LD MDL	—	—	CM	HLD HMDL

[1] Refer to publication 2100-TD001*x*-EN-P, *CENTERLINE Motor Control Centers HMCP Circuit Breakers*, for more information.
[2] Refer to publication 2100-TD002*x*-EN-P, *CENTERLINE Motor Control Centers Thermal Magnetic Circuit Breakers*, for more information.
[3] 30 Hp maximum at 240V, 50 Hp maximum at 480V and 600V, 22kW maximum at 220-230V, and 37kW maximum at 380-415V.
[4] 30Hp maximum at 240V, 50HP maximum at 480-600V, 22kW maximum at 220-230V, and 37kW maximum at 380-415V
[5] Not available at 240V, 350 Hp maximum at 480V, 450 Hp maximum at 600V, 132kW maximum at 220-230V, and 220kW maximum at 380-415V.

Circuit Breaker Type for Bulletins 2163P, 2163Q, 2163R, 2165Q, and 2165R *, †

Type	Instantaneous High Interrupting Capacity			Inverse Time (Thermal Magnetic) Standard Interrupting Capacity				Inverse Time (Thermal Magnetic) Medium Interrupting Capacity		Inverse Time (Thermal Magnetic) High Interrupting Capacity			
Hp Range	0.5-60	75-150 [1]	—	0.5-40	50-60	60-150 [1]	—	0.5-40	50	0.5-40	50-60	60-150 [1]	—
kW Range	0.25-37	45-75	90	0.25-22 [2]	18.5, 30-37 [3]	22, 45-75 [4]	90	0.25-22 [2]	18.5, 30-37 [3]	0.25-22 [2]	18.5, 30-37 [3]	22, 45-75 [4]	90
Suffix	CA	CA	CA	CT[5]	CT [5]	CT [6]	CT	CB [5]	CB [5]	CM [5]	CM [5]	CM [6]	CM
Frame Size	HMCP	HMCP250	HMCP400	FDB	FDB	JD	KD	FD	FD	HFD	HFD	HJD	HKD

[1] 150 Hp rating for 480V variable torque applications only.
[2] Only available through 15kW at 220-230V.
[3] 18.5kW rating is at 220-230V only.
[4] 22kw rating is at 220-230V only.
[5] Only available through 30 Hp at 240V, through 50 Hp at 480V, and through 60 Hp at 600V.
[6] Used for 60 Hp at 480V.

* For combination short circuit withstand ratings, see page 236.
† Refer to publication 2100-TD002*x*-EN-P, *CENTERLINE Motor Control Centers Thermal Magnetic Circuit Breakers*, for more information.