EATON | Cutler-Hammer

Motor Control Center Type F2100

Renewal Parts

Supersedes RP.03A.01A.S.E
pages 1-24, dated September 2000

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MCC Type	Dates	Cutler-Hammer Renewal Parts Publication
F2100	1995 –	RP04304001E
Advantage™	1992 –	RP04304002E
Series 2100	1987 – 95	RP04304003E
5 Star	1975 – 87	RP04304003E
Freedom Unitrol	1988 – 94	RP04304004E
F10 Unitrol	1972 – 89	RP04304005E
Type W	1965 – 75	RP04304006E
9800 Unitrol	1956 – 74	RP04304007E
11-300	1935 – 65	RP04304008E

F2100 | *Advantage* | *Series 2100/ 5 Star* | *Freedom Unitrol* | *F10 Unitrol* | *Type W* | *9800 Unitrol* | *11-300*

Distributor Ordering Instructions

1. Specify the item by catalog or style number.
2. For pricing information, refer to Price List PL04304002E (formerly PL 8991A dated November 1997).
3. Enter the order on VISTALINE™ on Suffix **FVU**, or through e-POD on Suffix **FVU**.
4. Selling Policy 25-000 (SP03000001E) applies, the Discount Symbol is **1CD-2C**.

Procedure for Identifying Motor Control Centers Renewal Units and Parts

1. Identify the design of the Eaton's Cutler-Hammer Motor Control Center (MCC) from the data found on the nameplate. Critical information includes:
   - Type of MCC.
   - Type of contactor.
   - Door width.
   - Bucket width.

   Note: In the event that the nameplate is missing or unreadable, follow the procedure on **Page 4**.
2. Refer to **Pages 6 – 24** and turn to the section in this Renewal Parts to identify replacement units, options, structure parts, and unit parts for F2100.
3. For Replacement Feeder Units, refer to **Page 26**.
4. This publication identifies those replacement units and parts which are most frequently ordered. Units should be ordered by complete catalog number, and parts by complete style number.

   For parts not listed or shown, contact your authorized Cutler-Hammer distributor or local Cutler-Hammer sales representative.
5. If additional assistance is required, contact the Motor Control Center Aftermarket Product Center in Fayetteville, NC at **(910) 483-2222** or **1-800-OLD-UNIT** or Fax (910) 677-5208 or (910) 677-5272.

   You can also contact one of our eight Service Centers for assistance with F2100, Advantage, Series 2100/5 Star, Freedom Unitrol, F10 Unitrol, Type W, 11-300 and 9800 Unitrol Motor Control Centers.

Atlanta
Phone (770) 739-6282
Fax (770) 739-7178

Chicago
Phone (847) 299-1911
Fax (847) 299-0398

Cincinnati
Phone (513) 682-4000
Fax (513) 682-4004

Denver
Phone (303) 373-2133
Fax (303) 375-9095

Hartford
Phone (860) 683-4221
Fax (860) 683-0764

Houston
Phone (713) 939-9696
Fax (713) 939-0427

Los Angeles
Phone (562) 944-6413
Fax (562) 941-7178

Portland
Phone (503) 636-8333
Fax (503) 636-8545

Identifying Motor Control Center Types

In most cases, it is possible to identify MCC design by handle type. Starter type, bucket width and door width can assist in identification.

Table 1. Identifying Motor Control Center Types

MCC Type	Type of Handle Mechanism	Original MCC Starter Type	Bucket Width Inches (mm)	Door Width Inches (mm)	Original Manufacturer ①	Starter Type (Installed in New Unit)
F2100 ②	Lever	Freedom Series	13-3/4 (349.3)	15-5/8 (397.0)	Cutler-Hammer 1994 to Present	Freedom
Advantage ②	Lever	Advantage	13-3/4 (349.3)	15-5/8 (397.0)	Westinghouse until 1994 Cutler-Hammer 1994 to Present	Advantage
Series 2100 ②	Lever	A200	13-3/4 (349.3)	15-5/8 (397.0)	Westinghouse until 1994 Cutler-Hammer 1994 to Present	A200
5 Star ②	Lever	A200	13-3/4 (349.3)	15-5/8 (397.0)	Westinghouse 1975 – 1987	A200
Freedom Unitrol	Slider	Freedom Series	13-7/8 (352.5)	15-1/2 (393.7)	Cutler-Hammer 1988 – 1994	Freedom
F10 Unitrol	Slider and Lever	Citation	14 (355.6)	14-3/4 (374.7) w/ Wireway 19-1/2 (495.3) w/o Wireway	Cutler-Hammer 1972 – 1989	Freedom
Type W	Slider	A200 or 11-200	11-3/4 (298.5)	13-3/8 (339.9)	Westinghouse 1965 – 1975	A200
9800 Unitrol	Rotary ③	3 Star/Citation	16-1/8 (409.7)	19-3/8 (492.3)	Cutler-Hammer 1956 – 1974	Freedom
11-300	Rotary	11-200 Lifeline Type N/A200	15-3/4 (400.1)	20 (508.0)	Westinghouse 1950 – 1965	A200

① MCC types were sometimes produced outside the time spans shown. This was due to the overlap of production when a new design was adopted.
② The unit "wrappers" are mechanically identical for these designs.
③ 9800 originally was supplied with Rotary. New replacement units are manufactured with slider handle mechanism.

Identification by Original Handle Mechanism

F2100, Advantage, Series 2100/5 Star

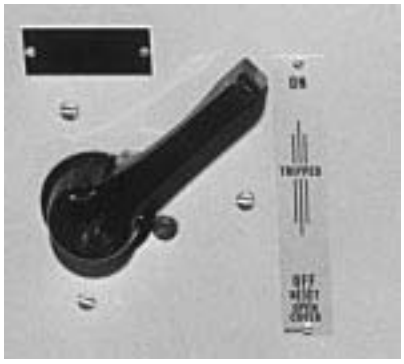
Freedom Unitrol

F10 Unitrol Slider 9800 Unitrol

F10 Unitrol Lever and 9800 Unitrol

Type W

9800 Unitrol



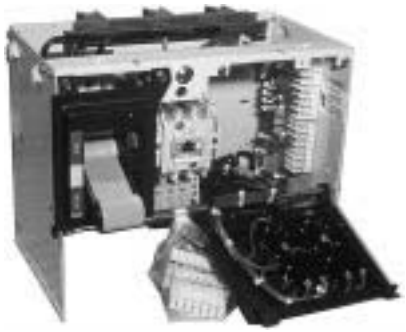
11-300

Procedure for Identifying Motor Control Center Types

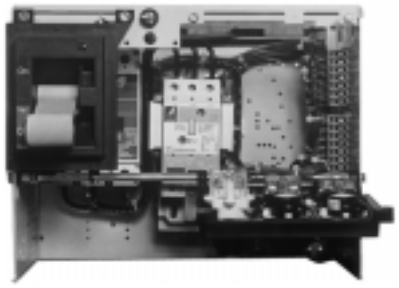
In the event that the nameplate is missing, it is possible to identify the MCC design by the type of handle mechanism, starter type, bucket width and door width.

Table 2. Identifying Motor Control Center Types

MCC Type	Type of Handle Mechanism	Starter Type	Bucket Width Inches (mm)	Door Width Inches (mm)	Cutler-Hammer Renewal Parts Publication
F2100 Advantage Series 2100	Lever Lever Lever	Freedom Series Advantage A200	13-3/4 (349.3) 13-3/4 (349.3) 13-3/4 (349.3)	15-5/8 (397.0) 15-5/8 (397.0) 15-5/8 (397.0)	RP04304001E RP04304002E RP04304003E
5 Star Freedom Unitrol F10 Unitrol	Lever Slider Lever/Slider	A200 Freedom Series Citation	13-3/4 (349.3) 13-7/8 (352.5) 14 (355.6)	15-5/8 (397.0) 15-1/2 (393.7) 14-3/4 (374.7) w/ Wireway or 19-1/2 (495.3) w/o Wireway	RP04304003E RP04304004E RP04304005E
Type W 9800 Unitrol 11-300	Slider Rotary Rotary	A200 or 11-200 3 Star and/or Citation 11-200 Lifeline N and/or A200	11-3/4 (298.5) 16-1/8 (409.7) 15-3/4 (400.1)	13-3/8 (339.9) 19-3/8 (492.3) 20 (508.0)	RP04304006E RP04304007E RP04304008E

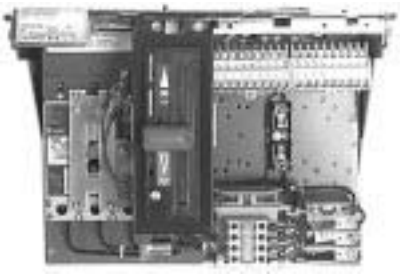


F2100



Advantage

Series 2100/5 Star



Freedom Unitrol

F10 Unitrol

Type W

9800 Unitrol

11-300

F2100 Product Description

The Eaton's Cutler-Hammer business introduced the F2100 MCC in 1995.

The structure is based on the 5 Star, Series 2100, and Advantage MCC design. Vertical structures are normally 20 inches (508.0 mm) wide, 90 inches (2286.0 mm) high, and 16 or 21 inches (406.4 or 533.4 mm) deep. Vertical sections may be bolted together forming a single line-up with continuous horizontal bus and open horizontal wireways. Unit height is measured in 6-inch (152.4 mm) increments, up to a maximum of 72 inches (1828.8 mm) of usable vertical space.

A two-tone paint system is used for this design. Ferro white is applied to the structural framework and units. ANSI 61 gray is applied to the exterior and doors. Starter units are 13-3/4 inches (349.3 mm) wide with 4-5/8 inch (117.6 mm) wireways.

The Freedom starter is used in this design along with the HMCP or HMCPE motor circuit protector. The F2100 starter unit's handle mechanism is a gray toggle type handle with a black exterior mounting panel and is used on the Advantage and Series 2100/ 5 Star designs. Bus and bus support systems are typically braced to withstand fault currents of 65,000 amperes.

Table 3. F2100 Product Rating

Maximum Ratings
3-Phase, 600V, 600 hp, 3200A Bus

F2100 Structure

F2100 Starter Unit

F2100 Replacement Starter Units

How to Order

When ordering a replacement unit, you receive:

- Series C® HMCP or HMCPE.
- Freedom Starter.
- Unit options as specified.
- New steel wrapper, door and handle mechanism.
- New stabs.
- UL® label.

Use the following steps for creating a catalog number for your specific application:

Step 1

Select the correct replacement unit from **Page 6 – 15**. When selecting, you need to know the following:

- MCC type.
- Class of Unit (FVNR, FVR, Reduced Voltage — Autotransformer or Part Winding or Solid State, FV – 2 Speed, 1 Winding or 2 Speed, 2 Winding, etc.).
- Starter size or horsepower rating.
- Protection device (breaker or fusible).
- Service voltage.
- Control voltage.
- Space required.

Step 2

Verify required space is available.

Step 3

Create a catalog number by selecting Catalog Codes from the columns per the example given.

Step 4

Add modifications as required from the Unit Options on **Pages 17 – 19**. Space available determines allowable options.

Table 4. Catalog Numbering System Example

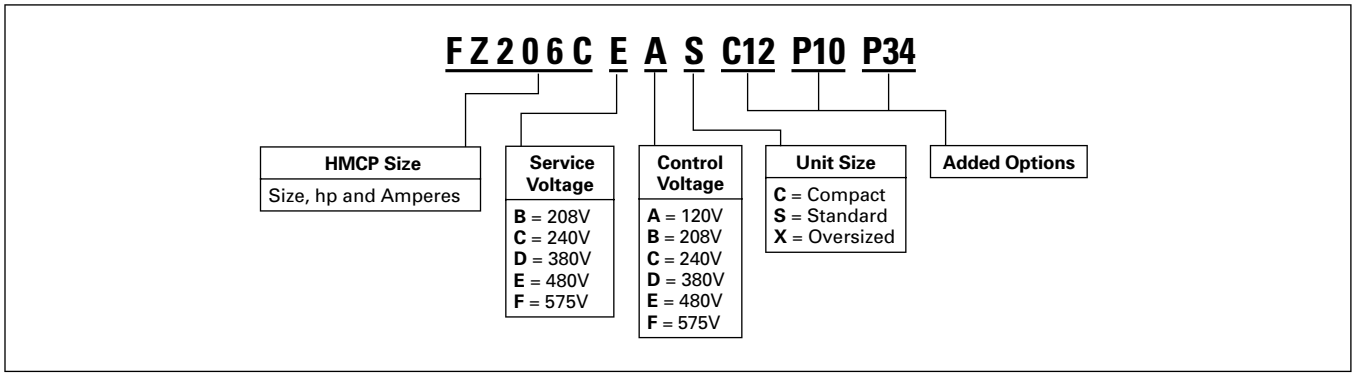


Table 5. Full Voltage Non-Reversing Combination Starter — HMCP (Must specify if HMCPE is required)

NEMA® Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	0.5 1 3 7.5	0.33 1 3 7.5	1 2 5 10	1 3 7.5 10	1.5 3 7.5 10	3 7 15 30	**FZ206A** **FZ206B** **FZ206C** **FZ206D**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	6 (152.4) High 12 (304.8) High 18 (457.2) High	**C** ① **S** **X**
2	10	15	25	25	25	50	**FZ206E**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	12 (304.8) High 18 (457.2) High	**S** **X**
3	25	30	50	50	50	100	**FZ206H**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	18 (457.2) High	**S**
4	40	50	75	100	100	150	**FZ206L**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	18 (457.2) High	**S**
5	60 75	60 100	125 150	150 200	150 200	250 400	**FZ206P** **FZ206R**	208 240 380 480	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**

① On 6-inch (152.4 mm) units, the only options available are (3) E22 pilot devices and separate source fuse or disconnect or CPT.

F2100 Replacement Starter Units

Table 6. Full Voltage Reversing Combination Starter — HMCP ①

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	0.5 1 3 7.5	0.33 1 3 7.5	1 2 5 10	1 3 7.5 10	1.5 3 7.5 10	3 7 15 30	**FZ216A** **FZ216B** **FZ216C** **FZ216D**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	18 (457.2) High 24 (609.6) High	**S** **X**
2	10	15	25	25	25	50	**FZ216E**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	18 (457.2) High 24 (609.6) High	**S** **X**
3	25	30	50	50	50	100	**FZ216H**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
4	40	50	75	100	100	150	**FZ216L**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	30 (762.0) High	**S**
5	50 75	60 100	100 150	125 200	150 200	250 400	**FZ216P** **FZ216R**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	60 (1524.0) High	**S**

① Must specify if HMCPE is required.

Table 7. Full Voltage 2 Speed 1 Winding — Constant/Variable Torque — HMCP ②③

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	0.5 1 3 7.5	0.33 1 3 7.5	1 2 5 10	1 3 7.5 10	1.5 3 7.5 10	3 7 15 30	**FZ946A** **FZ946B** **FZ946C** **FZ946D**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	10	15	25	25	25	50	**FZ946E**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	25	30	50	50	50	100	**FZ946H**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
4	40	50	75	100	100	150	**FZ946L**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**

② Must specify if HMCPE is required.
③ For constant horsepower instead of constant/variable torque, see Option SV6 on **Page 18**.

F2100 Replacement Starter Units

Table 8. Full Voltage 2 Speed 2 Winding — Constant/Variable Torque — HMCP ①②

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	0.5 1 3 7.5	0.33 1 3 7.5	1 2 5 10	1 3 7.5 10	1.5 3 7.5 10	3 7 15 30	**FZ956A** **FZ956B** **FZ956C** **FZ956D**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	10	15	25	25	25	50	**FZ956E**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	25	30	50	50	50	100	**FZ956H**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	30 (762.0) High	**S**
4	40	50	75	100	100	150	**FZ956L**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	30 (762.0) High	**S**

① Must specify if HMCPE is required.
② For constant horsepower instead of constant/variable torque, see Option SV6 on **Page 18**.

Table 9. Reduced Voltage Autotransformer — HMCP ③④

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	10	15	25	25	25	50	**FZ606E**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
3	25	30	50	50	50	100	**FZ606H**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	48 (1219.2) High	**S**
4	40	50	75	100	100	150	**FZ606L**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	48 (1219.2) High	**S** ④

③ Must specify if HMCPE is required.
④ If existing MCC is back-to-back design, 36 inches (914.4 mm) in bottom rear is unusable.

F2100 Replacement Starter Units

Table 10. Reduced Voltage Part Winding — HMCP ①

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	10	10	15	15	15	30	**FZ706D**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	20	25	40	40	40	100	**FZ706F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	40	50	75	75	75	150	**FZ706J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	30 (762.0) High	**S**
4	— 75	— 75	— 150	100 150	125 150	250 400	**FZ706L** **FZ706M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**

① Must specify if HMCPE is required.

Table 11. Reduced Voltage Wye Delta Open Transition — HMCP ②

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	20	25	40	40	40	100	**FZ806F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	42 (1066.8) High	**S**
3	40	50	75	75	75	150	**FZ806J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**
4	60 —	75 —	125 150	150 —	150 —	250 400	**FZ806M** **FZ806N**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	60 (1524.0) High	**S**

② Must specify if HMCPE is required.

F2100 Replacement Starter Units

Table 12. Reduced Voltage Wye Delta Closed Transition — HMCP (Non-Chiller Application) ①

NEMA Size	Maximum Horsepower					HMCP Size	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	20	25	40	40	40	100	**FZ896F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	42 (1066.8) High	**S**
3	40	50	50	50	50	100	**FZ896J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**
4	60 —	75 —	125 150	150 —	150 —	250 400	**FZ896M** **FZ896N**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	60 (1524.0) High	**S**

① Must specify if HMCPE is required.

F2100 Replacement Starter Units

IT06 — Intelligent Technologies *IT.* Solid-State Reduced Voltage Starter — HMCP

The ***IT.*** solid-state reduced voltage starter uses SCRs when starting and a low impedance run circuit during operation. Solid-state starters have (5) 24V DC inputs and 2 relay outputs. Soft start units include a disconnect, starter, 24V DC power supply and 100VA CPT.

Motor Service Factor (SF) Effect on *IT.* Starter Selection

- A 1.0 service factor motor may draw up to 1.00 x full load amperes.
- A 1.15 service factor motor may draw up to 1.15 x full load amperes.
- 15% more current. ***IT.*** starters are current rated devices. In some cases, a larger ***IT.*** SSRV starter must be supplied for 1.15 SF motors. See the maximum horsepower chart below.

Note: Most motors used in industrial applications are 1.15 Service Factor (SF).

Table 13. Replacement *IT.* Soft Start Units

Service Factor	Horsepower	*IT.* Soft-Start Amperes	HMCP Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
1.15	10	37	100	**FZ306A**	208	**B**	120	**A**	12 (304.8) High	**S**
	15	66		**FZ306B**			208	**B**		
	30	105	150	**FZ306C**			240	**C**	18 (457.2) High	
	40	135		**FZ306D**			380	**D**		
	50	180	400	**FZ306E**			480	**E**	36 (914.4) High	
	60	240		**FZ306F**			575	**F**		
	75	304		**FZ306G**			—	**—**		
1.15	10	37	100	**FZ306A**	240	**C**	120	**A**	12 (304.8) High	**S**
	20	66		**FZ306B**			208	**B**		
	30	105	150	**FZ306C**			240	**C**	18 (457.2) High	
	40	135		**FZ306D**			380	**D**		
	60	180	250	**FZ306E**			480	**E**	36 (914.4) High	
	75	240	400	**FZ306F**			575	**F**		
	100	304		**FZ306G**			—	**—**		
1.15	15	37	100	**FZ306A**	380	**D**	120	**A**	12 (304.8) High	**S**
	30	66		**FZ306B**			208	**B**		
	45	105	150	**FZ306C**			240	**C**	18 (457.2) High	
	55	135	250	**FZ306D**			380	**D**		
	75	180	400	**FZ306E**			480	**E**	36 (914.4) High	
	110	240		**FZ306F**			575	**F**		
	132	304	600	**FZ306G**			—	**—**		
1.15	20	37	100	**FZ306A**	480	**E**	120	**A**	12 (304.8) High	**S**
	40	66		**FZ306B**			208	**B**		
	60	105	150	**FZ306C**			240	**C**	18 (457.2) High	
	75	135		**FZ306D**			380	**D**		
	125	180	400	**FZ306E**			480	**E**	36 (914.4) High	
	150	240		**FZ306F**			575	**F**		
	200	304		**FZ306G**			—	**—**		
1.15	30	37	100	**FZ306A**	575	**F**	120	**A**	12 (304.8) High	**S**
	50	66		**FZ306B**			208	**B**		
	75	105	150	**FZ306C**			240	**C**	18 (457.2) High	
	100	135		**FZ306D**			380	**D**		
	150	180	250	**FZ306E**			480	**E**	36 (914.4) High	
	200	240	400	**FZ306F**			575	**F**		
	250	304		**FZ306G**			—	**—**		

F2100 Replacement Starter Units

Table 14. Full Voltage Non-Reversing — Fusible ①

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	7.5	7.5	10	10	10	30	**FZ204C**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	6 (152.4) High 12 (304.8) High 18 (457.2) High	**C** ② **S** **X**
2	— 10	— 15	15 25	15 25	25 —	30 60	**FZ204E** **FZ204F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	12 (304.8) High 18 (457.2) High	**S** **X**
3	— 25	20 30	30 50	40 50	50 —	60 100	**FZ204H** **FZ204J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
4	— 50	— 50	— 50	60 100	75 100	100 200	**FZ204L** **FZ204M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	48 (1219.2) High	**S**
5	60 100	60 100	100 150	150 200	150 200	200 400	**FZ204P** **FZ204R**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480	**A** **B** **C** **D** **E**	60 (1524.0) High	**S**

① Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.
② On 6-inch (152.4 mm) units, the only option available are (3) E22 pilot devices and separate source fuse or disconnect or CPT.

Table 15. Full Voltage Reversing — Fusible ③

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	7.5	7.5	10	10	10	30	**FZ214C**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	— 10	— 15	15 25	15 25	25 —	30 60	**FZ214E** **FZ214F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	— 25	20 30	30 50	40 50	50 —	60 100	**FZ214H** **FZ214J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	30 (762.0) High	**S**
4	— 50	— 50	— 60	60 100	75 100	100 200	**FZ214L** **FZ214M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**

③ Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.

F2100 Replacement Starter Units

Table 16. Full Voltage 2 Speed 1 Winding — Fusible — Constant/Variable Torque ①②

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	7.5	7.5	10	10	10	30	**FZ944C**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	— 10	— 15	15 25	15 25	25 —	30 60	**FZ944E** **FZ944F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
3	— 25	20 30	30 50	40 50	50 —	60 100	**FZ944H** **FZ944J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
4	— 50	— 50	— 60	60 100	75 100	100 200	**FZ944L** **FZ944M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	60 (1524.0) High	**S**

① Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.
② For constant horsepower instead of constant/variable torque, see Option SV6 on **Page 18**.

Table 17. Full Voltage 2 Speed 2 Winding — Fusible — Constant/Variable Torque ③④

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	7.5	7.5	10	10	10	30	**FZ954C**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	— 15	— 15	15 25	15 25	25 —	30 60	**FZ954E** **FZ954F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	— 25	20 30	30 50	40 50	50 —	60 100	**FZ954H** **FZ954J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
4	— 50	— 50	— 60	60 100	75 100	100 200	**FZ954L** **FZ954M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**

③ Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.
④ For constant horsepower instead of constant/variable torque, see option SV6 on **Page 18**.

F2100 Replacement Starter Units

Table 18. Reduced Voltage Autotransformer — Fusible ①

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	— 10	— 15	15 25	15 25	25 —	30 60	**FZ604E** **FZ604F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
3	— 25	20 30	30 50	40 50	50 —	60 100	**FZ604H** **FZ604J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**
4	— 50	— 50	— 60	60 100	75 100	100 200	**FZ604L** **FZ604M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	72 (1828.8) High	**S** ②

① Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.
② If existing MCC is back-to-back design, 36 inches (914.4 mm) in bottom rear is unusable.

Table 19. Reduced Voltage Part Winding — Fusible ③

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
1	10	10	15	15	15	60	**FZ704C**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
2	— 20	15 25	25 40	30 40	40 —	60 100	**FZ704E** **FZ704F**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	24 (609.6) High	**S**
3	— 40	— 50	— 75	50 75	60 75	100 200	**FZ704H** **FZ704J**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	36 (914.4) High	**S**
4	50 75	— 75	100 150	100 150	150 —	200 400	**FZ704L** **FZ704M**	208 240 380 480 575	**B** **C** **D** **E** **F**	120 208 240 380 480 575	**A** **B** **C** **D** **E** **F**	54 (1371.6) High	**S**

③ Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.

F2100 Replacement Starter Units

Table 20. Reduced Voltage Wye Delta Open Transition — Fusible ①

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	15	15	30	40	40	60	FZ804F	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	30 (762.0) High	S
	20	25	40	—	—	100	FZ804G					36 (914.4) High	S
3	25	30	50	60	75	100	FZ804J	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	36 (914.4) High	S
	40	50	75	75	—	200	FZ804K					48 (1219.2) High	S
4	50	60	100	125	150	200	FZ804M	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	60 (1524.0) High	S
	60	75	150	150	—	400	FZ804N					72 (1828.8) High	S

① Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.

Table 21. Reduced Voltage Wye Delta Closed Transition — Fusible (Non-Chiller Application) ②

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
2	15	15	30	40	40	60	FZ894F	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	30 (762.0) High	S
	20	25	40	—	—	100	FZ894G					36 (914.4) High	S
3	25 40	30 50	50 75	60 75	75 —	100 200	FZ894J FZ894K	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	48 (1219.2) High	S
4	50	60	100	125	150	200	FZ894M	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	60 (1524.0) High	S
	60	75	150	150	—	400	FZ894N					72 (1828.8) High	S

② Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.

Table 22. Reduced Voltage Non-Reversing Vacuum Starters — Fusible ③

NEMA Size	Maximum Horsepower					Fuse Clip Amperes	Catalog Code	Service Voltage	Catalog Code	Control Voltage	Catalog Code	Space Options Inches (mm)	Catalog Code
	208V	240V	380V	480V	600V								
4	— 50	— 50	— 60	60 100	75 100	100 200	FZV04L FZV04M	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	36 (914.4) High	S
5	60	60	100	150	150	200	FZV04P	208 240 380 480 575	B C D E F	120 208 240 380 480 575	A B C D E F	36 (914.4) High	S
	100	100	150	200	200	400	FZV04R					48 (1219.2) High	S

③ Fuse clip ratings shown are based on Class RK1, 5 fuses for all units except 6-inch (152.4 mm) units which use CC fuses.

F2100 Unit Options

Table 23. Option Groups ①

Groups	Description	Page Number
B	Circuit Breaker Options	**16**
C	Control Power Source Options	**16**
G	Ground Fault Protection Options	**16**
M	Metering Options	**16**
O	Overload Options	**16**
P	Pilot Device Options	**17**
R	Relay and Timer (Control, Voltage, Current) Options	**17**
S	Starter Contact Options	**18**
SV	Vacuum Starter Options	**18**
T	Terminal Block Options	**18**
U	Unit Wiring Options	**18**

① Select your option suffix and attach it to the end of the catalog number.

Table 24. Option Suffix

Suffix	Description	Space Required ②
B — Breaker Options		
B10	Shunt Trip 120V AC Wired to Terminal Blocks for Remote Tripping	**C**
B11	Auxiliary Switch Form C (1NO/1NC) Wired to Terminal Blocks	**C**
B12	Form C Bell Alarm Contact (1NO/1NC) Wired to Terminal Blocks	**C**
B13	Undervoltage Release	**C**
B14	IQ Energy Sentinel — F Frame	③
B15	IQ Energy Sentinel — J Frame	③
B16	IQ Energy Sentinel — K Frame	③
B17	IQ Central Energy Display	③
B18	Thermal Magnetic Circuit Breaker Instead of HMCP	**—**
C — Control Power Source Options		
C10	Control Fuse Wired for Separate Source in Lieu of Control Power Transformer	**C**
C11	Control Fuse with Disconnect for Separate Source in Lieu of Control Power Transformer	**C**
C12	Control Power Transformer 100 VA for Size 1 and 2 Starters (Fused)	**C** ④
C13	Control Power Transformer 150 VA for Size 3 and 4 Starters (Fused)	**C**
C14	Control Power Transformer 100 VA with Interposing Relay for Size 5 Starters, Fused	**C**
C15	Extra 50 VA for Control Power Transformer	**S**
C16	Extra 100 VA for Control Power Transformer	**S**
C17	Service Voltage Control, Fused in Lieu of Control Power Transformer	**C**
C18	Full Capacity Control Power Transformer for Size 5 Starters, Fused	**C**
G — Ground Fault Protection Options		
G10	Class 1 Ground Fault Protection — GRT1 Size 1 – 4	**X**
G11	Class 1 Ground Protection — GRT1 Size 5 – 6	**X**
G12	Ground Fault Test Panel	**X**
M — Metering Options		
M10	Mini Voltmeter	**C** ④
M11	Mini Ammeter with Current Transformer	**S**
M12	Mini Elapsed Time Meter	**C** ④
M13	Current Transformer for Remote Metering	**S**
M14	Current Transducer 4-20 mA Output	**X**
O — Overload Options		
O10	IQ 500 Solid-State Overload Relay	**—**
O11	IQ 500 Load Protection Module	**—**
O16	Bell Alarm (1NO) Wired	**C**
O17	Bi-Metallic Overload Substitution	**C**
O18	Adjustable A200 Overload Substitution	**C**
O19	Overload Relay Heater/Heater Pack	**C**
O20	CEP7 Solid-State Overload Relay	**C**

② Minimum unit size required (refer to Replacement Unit pages).
③ Consult factory for spacing.
④ Not available in 6 inches (152.4 mm).

F2100 Unit Options

Table 24. Option Suffix (Continued)

Suffix	Description	Space Required ①
P — Pilot Device Options ②		
P10	Red "RUN" Light	C
P11	Green "STOPPED" Light	C
P12	Amber "OVERLOAD TRIPPED" Light	C
P13	Green "RUN" Light	C
P14	Red "STOPPED" Light	C
P15	Red "RUN" Push-to-Test Light	C
P16	Green "STOPPED" Push-to-Test Light	C
P17	Amber "OVERLOAD TRIPPED" Push-to-Test Light	C
P18	Green "RUN" Push-to-Test Light	C
P19	Red "STOPPED" Push-to-Test Light	C
P20	Special Function Light	C
P30	"START" Pushbutton	C
P31	"STOP" Pushbutton	C
P32	"START/STOP" Pushbutton	C
P33	"ON" Pushbutton	C
P34	"OFF" Pushbutton	C
P35	"ON/OFF" Pushbutton	C
P36	"FORWARD/REVERSE/STOP" Pushbutton	C
P37	"FAST/SLOW/STOP" Pushbutton	C
P38	"FAST/OFF/SLOW" Pushbutton	C
P39	"HIGH/LOW/STOP" Pushbutton	C
P40	"HIGH/LOW/OFF" Pushbutton	C
P41	Special Function Pushbutton	C
P50	"ON-OFF" Selector Switch	C
P51	"HIGH-LOW" Selector Switch	C
P52	"OFF-AUTO" Selector Switch	C
P53	"START-STOP" Selector Switch	C
P54	"SLOW-FAST" Selector Switch	C
P55	"FORWARD-REVERSE" Selector Switch	C
P56	Special Function 2-Position Selector Switch	C
P57	"HAND-OFF-AUTO" Selector Switch	C
P58	"LOCAL-OFF-REMOTE" Selector Switch	C
P59	"FAST-OFF-SLOW" Selector Switch	C
P60	"HIGH-OFF-LOW" Selector Switch	C
P61	Special Function 3-Position Selector Switch	C
P62	"HIGH-LOW-OFF-AUTO" Selector Switch	C
P63	Special Function 4-Position Selector Switch	C
R — Relay and Timer Options		
R10	Auxiliary Control Relay 2-Pole (1NO/1NC) Convertible Contacts Wired in Parallel with Starter Coil	S
R11	Auxiliary Control Relay 4-Pole (2NO/2NC) Convertible Contacts Wired in Parallel with Starter Coil	S
R12	Auxiliary Control Relay 2-Pole Overload Alarm (1NO/1NC) Convertible Contacts	S
R13	Mechanical Latching Relay (Specify Connection)	X
R14	Ice Cube Relay 300 Volts 3-Pole Blade Type (Specify Connection)	S
R15	Phase Voltage Relay	X
R16	Current Sensing Relay with Contacts Wired to Terminal Blocks	X
R17	Deceleration Timing Relay (Pneumatic "OFF" Delay)	S
R18	Compelling Timing Relay (Pneumatic "ON" Delay)	S
R19	Time Clock 24 Hour	③
R20	Time Clock 7 Day	③
R21	Solid-State Timer Type TR (Specify Connection)	S
R22	DN65 DeviceNet Interface Module	S
R23	D15 2-Pole Control Relay	C
R24	D15 4-Pole Control Relay	C

① Minimum unit size required (refer to Replacement Unit pages).
② Available only with F2100, Advantage, Series 2100/5 Star, Freedom Unitrol, F10 Unitrol and Type W. Consult factory for specific size limitations.
③ Consult factory for spacing.

F2100 Unit Options

Table 24. Option Suffix (Continued)

Suffix	Description	Space Required ①
S — Starter Contact Options (Maximum of 8 Contacts)		
S_ _	To order extra starter contacts, you must specify the number of NO/NC contacts, given a maximum of eight (8). To define the unit option required, create a suffix based on the following example: S — Quantity of Normally Open Contacts: 2 — Quantity of Normally Closed Contacts: 3	
SV — Vacuum Starter Options		
SV4	Vacuum Starter Size 4 Substitution FVNR	②
SV5	Vacuum Starter Size 5 Substitution FVNR	②
SV6	Constant Horsepower Instead of Constant/Variable Torque	—
T — Terminal Block Options		
T10	Pull-apart Type Terminal Blocks (Standard on all Vintages Except TYPE W and 11-300)	**S**
T11	Utility Screw Type Terminal Blocks (Add 6 Inches (152.4 mm) for Every 18 Points)	—
T12	Front-mounted Pull-apart Terminal Block for F2100, Advantage, Series 2100/5 Star	**S**
T13	T-Lead Power Terminal Blocks for Size 1 Starter	—
U — Unit Wiring Options		
U10	Surge Suppressor on Coil	**C**
U11	Type SIS Control Wire	**C**
U12	Type SIS Power Wire	**C**
U13	Type 14 Gauge Control Wire (Standard for all Vintages Except F2100, Series 2100/5 Star, Type W and 11-300)	**C**
U14	Wiremarkers — Sleeve Type on all Control Wire	**C**
U15	Locking Fork Terminals on all Control Wiring	**S**
U16	Ring Wire Terminals on Power Wiring	**S**
U17	Wiring Diagram Inside Starter Unit Door	**C**
U18	Pre-insulated Ring Terminals on all Control Wiring	**C**
U19	Pre-insulated Ring Terminals on all Control Wiring, except for Freedom Starter Terminals	**C**
U20	Wiremarkers for Power Wiring	**C**

① Minimum unit size required (refer to Replacement Unit pages).
② Consult factory for spacing.

F2100 Structure Parts

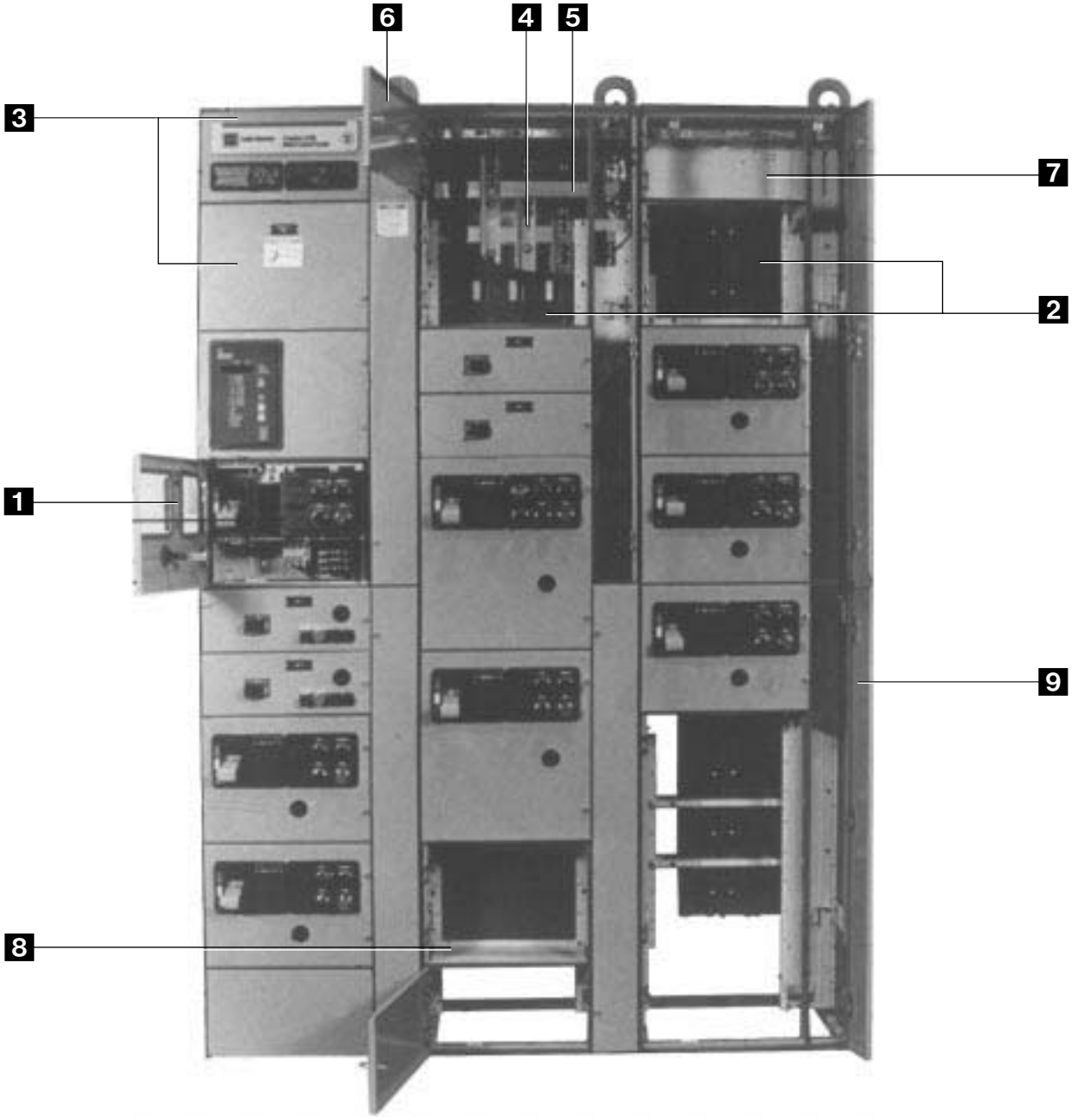


Table 25. Structure Parts

Reference	Description	Page
1	Blank Unit Door	20
2	Shutter Kit	20
3	Sheet Metal Covers Touch-up Paint Kit	20 20
4	Vertical Bus Bar Vertical Bus Barrier Kits Vertical Bus Insulation Kit	20 20 20
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Reference	Description	Page
6	Horizontal Wireway Door	21
7	Horizontal Bus Barriers	21
8	Divider Pan/Guide Rails	21
9	Vertical Wireway Door Horizontal to Vertical Bus Connection Kit Horizontal Bus Insulator Kit Horizontal Bus Splice Kit Door Mounting Hardware Kit	21 22 22 22 22

F2100 Structure Parts

Vertical Bus Bar 4

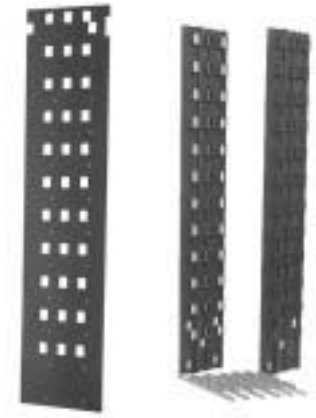
65,000 ampere rms bus bracing.

Vertical Bus Bar

Table 26. Vertical Bus Bar — Copper Only

Ampere Rating	Mounting Type	Style Number
300	Front	**4719A80G01**
600	Front/Back-to-Back	**4719A80G02**
800	Front	**4719A80G04**
1200	Front	**4719A80G05**

Vertical Bus Barrier Kits 4

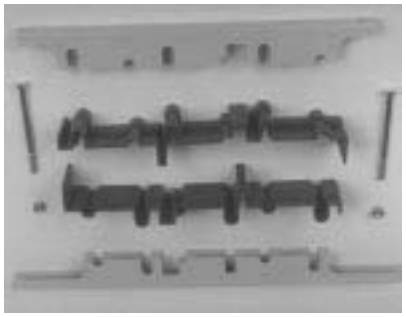


Standard Flat Barrier *Labyrinth Barrier*

Table 27. Vertical Bus Barrier Kits

Description	Style Number
Standard flat barrier kit includes one flat barrier, 12 covers and clips.	**4719A91G13**
Labyrinth barrier kit includes front and rear barrier, bus supports and hardware (does not include shutters).	**4719A91G14**

Vertical Bus Insulation Kit 4



Vertical Bus Insulation Kit

Table 28. Vertical Bus Insulation Kit

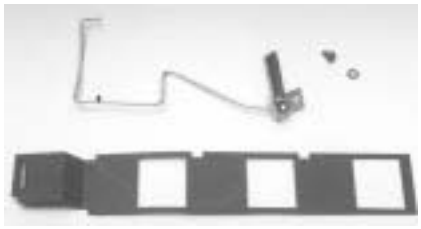
Description	Style Number
Kit includes 2 insulators, 2 mounting brackets and mounting hardware.	**4719A91G12**

Sheet Metal Covers with Mounting Hardware 3

Table 29. Sheet Metal Covers with Mounting Hardware

Description	Style Number
Side Sheets	
16-Inches (406.4 mm) Deep, Front Mounted	**4719A91G31**
21-Inches (533.4 mm) Deep, Front Mounted	**4719A91G32**
21-Inches (533.4 mm) Deep, Back-to-Back Mounted	**4719A91G33**
Rear Sheets	
20-Inches (508.0 mm) Wide x 90-Inches (2286.0 mm) High	**4719A91G34**
24-Inches (609.6 mm) Wide x 90-Inches (2286.0 mm) High	**4719A91G35**
Top Sheets	
20-Inches (508.0 mm) Wide x 16-Inches (406.4 mm) Front Mounted	**4719A91G36**
20-Inches (508.0 mm) Wide x 21-Inches (533.4 mm) Front Mounted	**4719A91G37**
20-Inches (508.0 mm) Wide x 21-Inches (533.4 mm) Back-to-Back Mounted	**4719A91G38**
24-Inches (609.6 mm) Wide x 16-Inches (406.4 mm) Front Mounted	**4719A91G39**
24-Inches (609.6 mm) Wide x 21-Inches (533.4 mm) Front Mounted	**4719A91G40**

Shutter Kit 2



Shutter Kit

Table 30. Shutter Kit

Description	Style Number
Kit includes shutter, spring loaded coupler and mounting screws.	**4719A91G15**

Blank Unit Door with Mounting Hardware 1

Table 31. Blank Unit Door with Mounting Hardware

Description	Style Number
6-Inches (152.4 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G20**
12-Inches (304.8 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G21**
18-Inches (457.2 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G22**
24-Inches (609.6 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G23**
30-Inches (762.0 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G24**
36-Inches (914.4 mm) High x 15-1/2 Inches (393.7 mm) Wide	**4719A91G25**

Touch-up Paint Kit 3

Table 32. Touch-up Paint Kit

Description	Style Number
Kit includes three spray cans of ANSI-61 Gray.	**4719A91G10**

F2100 Structure Parts

Horizontal Bus Bar 5

65,000 ampere rms Bus Bracing.

Horizontal Bus Bar

Table 33. Horizontal Bus Bar — Tin-Plated Copper

Structures		Bar Size Inches (mm)	Bars/ Phase	Ampere Rating		Style Number
Number	Width Inches (mm)			UL (50°C)	NEMA (65°C)	
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 2 (6.4 x 50.8)	1	600	600	**4719A97G28** **4719A97G29** **4719A97G30**
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 2 (6.4 x 50.8)	1	—	800	**4719A97G31** **4719A97G32** **4719A97G33**
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 3 (6.4 x 76.2)	1	—	1000	**4719A97G34** **4719A97G35** **4719A97G36**
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 3 (6.4 x 76.2)	2	—	1200	**4719A97G37** **4719A97G38** **4719A97G39**
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 3 (6.4 x 76.2)	1	800	—	**4719A97G40** **4719A97G41** **4719A97G42**
1 2 3	20 (508.0) 40 (1016.0) 60 (1524.0)	1/4 x 2-1/2 (6.4 x 63.5)	2	1200	—	**4719A97G43** **4719A97G44** **4719A97G45**

Horizontal Wireway Door Kit 6

Horizontal Wireway Door kit

Table 34. Horizontal Wireway Door Kit

Description Inches (mm)	Style Number
9 (228.6) High x 15-1/2 (393.7) Wide (Standard Kit of 2)	**4719A91G18**
(1) 15 (381.0) High x 15-1/2 (393.7) Wide, (1) 3 (76.2) High	**4719A91G19**

Horizontal Bus Barrier Kit 7

Horizontal Bus Barrier Kit

Table 35. Horizontal Bus Barrier Kit

Description Inches (mm)	Style Number
9 (228.6) High, Front Mounted 15 (381.0) High, Front Mounted 15 (381.0) High, Rear Mounted	**4719A91G02** **4719A91G03** **4719A91G04**

Kit includes divider pan, horizontal and vertical barriers, junction piece, and mounting hardware.

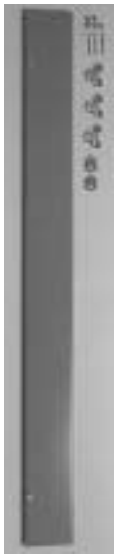
Divider Pan/Guide Rails with Mounting Hardware 8

Divider Pan/Guide Rails with Mounting Hardware

Table 36. Divider Pan/Guide Rails with Mounting Hardware

Description	Style Number
Divider Pan/Guide Rails with mounting hardware.	**4719A91G05**

Vertical Wireway Door Kit 9



Vertical Wireway Door Kit

Table 37. Vertical Wireway Door Kit

Description Inches (mm)	Style Number
Kit includes 4 x 45 (101.6 x 1143.0) door, hinges, hinge pins and mounting hardware.	**4719A91G17**

F2100 Structure Parts

Horizontal to Vertical Bus Connection Kit 9

Horizontal to Vertical Bus Connection Kit

Table 38. Horizontal to Vertical Bus Connection Kit

Description	Horizontal Bus		Vertical Bus		Style Number
	Ampere Rating	Bars/Phase	Ampere Rating	Material	
Kit includes bus spacers with mounting hardware.	600	1	300	Cu	**4719A97G64**
			600	Cu	**4719A97G65**
	800	2	300	Cu	**4719A97G72**
			600	Cu	**4719A97G73**
			800	Cu	**4719A97G74**
	1200	3	300	Cu	**4719A97G80**
			600	Cu	**4719A97G81**
			800	Cu	**4719A97G82**
			1200	Cu	**4719A97G84**

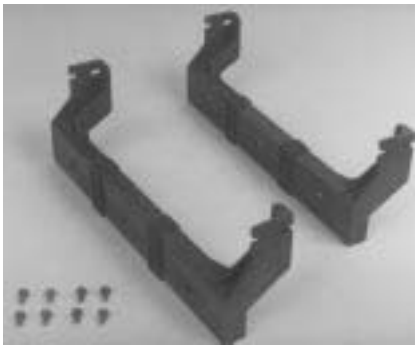
Horizontal Bus Splice Kit 9

Horizontal Bus Splice Kit

Table 39. Horizontal Bus Splice Kit — Tin-Plated Copper

Description	Bus Ampere Rating		Bus Size Inches (mm)	Bars/ Phase	Style Number
	UL (50°C)	NEMA (65°C)			
Kit includes bus splice plates with mounting hardware.	600	600	2 (50.8)	1	**4719A97G86**
	—	800	2 (50.8)	1	**4719A97G87**
	800	—	3 (76.2)	1	**4719A97G88**
	—	1000	3 (76.2)	1	**4719A97G89**
	1000	1200	3 (76.2)	2	**4719A97G90**
	1200	—	2-1/2 (63.5)	2	**4719A97G91**

Horizontal Bus Insulator Kit 9



Horizontal Bus Insulator Kit

Table 40. Horizontal Bus Insulator Kit

Description	Style Number
Kit includes 2 insulators with mounting hardware.	**4719A91G11**

Door Mounting Hardware Kit 9

Door Mounting Hardware Kit

Table 41. Door Mounting Hardware Kit

Description	Style Number
Kit includes 2 hinges, hinge pins and (2) 1/4 turn latches.	**4719A91G26**

F2100 Unit Parts

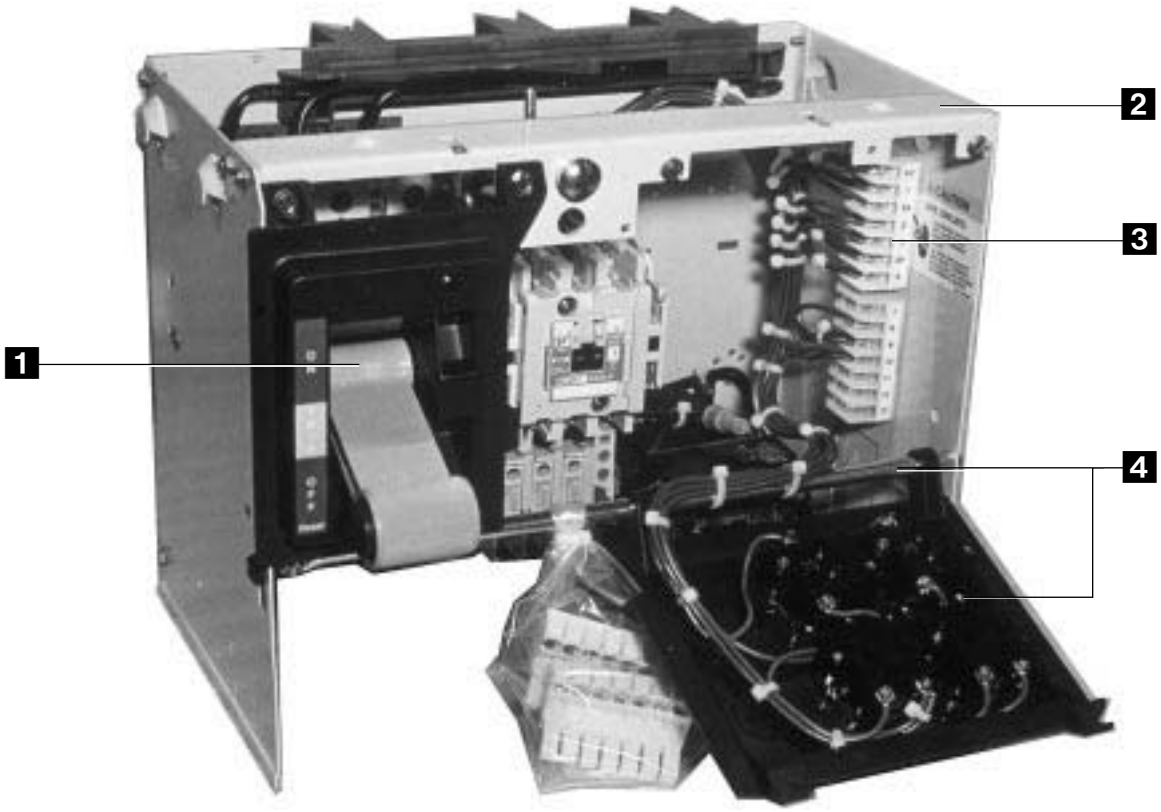


Table 42. Unit Parts

Reference	Description	Page
1	Operating Handle Mechanism Overload Reset Button and Reset Rod Ext. Kit	23 23
2	Unit Drawout Top Rail	24
3	Terminal Blocks	24
4	Control Transformers Primary/Secondary Fuse Holder Kit Device Panel/Pivot Tube	24 24 24

Operating Handle Mechanism Kit 1

Operating Handle Mechanism Kit

Kit includes operating arm, adjustable linkage, and mounting hardware.

Table 43. Operating Handle Mechanism Kit

Description	Style Number
Circuit Breaker Units	
FB/MCP	4719A92G43
KB	4719A92G05
HFD/HMCP	4719A88G01
HMCPE	4700A99G69
HLD	4700A99G65
HJD/HKD	4719A89G01
LB	4719A92G06
MA/MC	4719A92G07
NB	4719A92G08
FCL	4719A92G44
LCL	4719A92G45
HFD/HMCP (6-Inch Unit)	4719A92G56
Fusible Switch Units	
30/60/100A K Switch	5A10098G01
200A K Switch	5A10098G03
400A K Switch	5A10098G05

Overload Reset Button and Reset Rod Extension Kit 1

Overload Reset Button and Reset Rod Extension Kit

Table 44. Overload Reset Button and Reset Rod Extension Kit

Description	Style Number
For Freedom starters, the kit includes reset button, retainer, and adapter.	4719A92G58

F2100 Unit Parts

Unit Drawout Top Rail 2

Unit Drawout Top Rail

Table 45. Unit Drawout Top Rail

Description	Style Number
Unit Top Rail with Hardware	**4719A92G02**

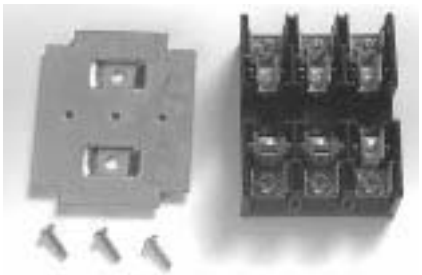
Terminal Blocks 3

Terminal Blocks

Table 46. Terminal Blocks

Description	Style Number
White, 7 Circuit, Pull-apart	**4719A92G57**

Primary/Secondary Fuse Holder Kit 4



Primary/Secondary Fuse Holder Kit

Table 47. Primary/Secondary Fuse Holder Kit

Description	Style Number
Kit includes fuse block, mounting bracket and screws.	**4719A92G59**

Control Transformers (480/240V to 120V Single-Phase) 4

Table 48. Control Transformers (480/240V to 120V Single-Phase)

Description	Style Number
50 VA	**4719A92G46**
100 VA	**4719A92G48**
150 VA	**4719A92G49**
200 VA	**4719A92G50**
250 VA	**4719A92G51**
300 VA	**4719A92G52**
350 VA	**4719A92G53**
500 VA	**4719A92G54**

Device Panel/Pivot Tube with Mounting Hardware 4

Device Panel/Pivot Tube with Mounting Hardware

Table 49. Device Panel/Pivot Tube with Mounting Hardware

Description	Style Number
Device panel/pivot tube with mounting hardware.	**4719A92G03**

K-SW Clip Change-Over Information

Fuse Clip Kits are the parts you will need to order to change out the fuse clips on an order.

The kits include clip and hardware for the switch and fuse block. Refer to Vista for pricing.

Table 50. Fuse Clip Kits

Need	Order Kit Number
30 Ampere 600V/R	
30A 250V/R	**C351KC21R**
30A 600V/J	**C351KD71**
30A 600V/R	**C351KD22-61R**
30A Form II	**C351KD81**
60 Ampere 600V/R	
60A 250V/R	**C351KD22-61R**
60A 600V/J	**C351KD72**
60A 600V/R	**C351KD62R**
60A Form II	**C351KD82**
100 Ampere 600V/R	
100A 250V/R	**C351KE23-63**
100A 600V/J	**C351KE73**
100A 600V/R	**C351KE23-63**
100A Form II	**C351KE83**
200 Ampere 600V/R	
200A 250V/R	**C351KF24-64**
200A 600V/J	**C351KF74**
200A 600V/R	**C351KF24-64**
200A Form II	**C351KF84**

How to Create a Catalog Number

After selecting the circuit device required, create a Dual Mounted feeder unit catalog number based on the following:

Note: Catalog number varies in length based on single or dual mounted unit.

Table 51. Catalog Numbering System Example

FZ F 2 L N 18

Type MCC
FZ = F2100
FK = Advantage
FS = Series 2100/5 Star
FD = Freedom Unitrol
FR = F10 Unitrol
FT = Type W
FN = 9800 Unitrol
FJ = 11-300

Device Type
F = HFD
J = HJD
K = HKD
L = HLD
Z = Switch

Type of Unit
1 = Single
2 = Dual

Trip or Clip Rating	
A = 15	**M** = 125
B = 20	**N** = 150
C = 25	**P** = 175
D = 30	**Q** = 200
E = 40	**R** = 225
F = 50	**S** = 250
G = 60	**T** = 300
H = 70	**W** = 350
J = 80	**X** = 400
K = 90	**Y** = 500
L = 100	**Z** = 600

Trip or Clip Rating for Dual Mounted Only
Use same table options if applicable.

Unit Size
06 = 6-inch (152.4 mm)
12 = 12-inch (304.8 mm)
14 = 14-inch (355.6 mm)
18 = 18-inch (457.2 mm) or 18-2/3 inch (474.2 mm)
24 = 24-inch (609.6 mm)
28 = 28-inch (711.2 mm)
30 = 30-inch (762.0 mm)
36 = 36-inch (914.4 mm)
37 = 37-1/3 inch (948.2 mm)
48 = 48-inch (1219.2 mm)
72 = 72-inch (1828.8 mm)

Replacement Feeder Units

Product Description

Each Feeder Unit consists of a single mounted 3-pole molded case circuit breaker or fusible switch (dual mounted are also available). Each unit includes a new wrapper, stab assembly, door, handle mechanism and customer specific disconnect device. They are shipped assembled and ready to install into the existing motor control center.

The following are simple steps to select and order a new feeder unit:

Step 1

Select the circuit device required from **Table 52** below.

Step 2

Verify the amount of space available.

Step 3

Create a catalog number using **Table 51** on **Page 25**.

Unit options and modifications for replacement feeder units:

For factory installed molded case circuit breaker modifications or additional unit options, contact the factory for prices and availability.

Table 52. Electrical Characteristics and Space Requirements of Molded Case Circuit Breaker and Fusible Switch Replacement Feeder Units — Inches (mm)

Device Type	Maximum Amperes	Interrupting Rating (kAIC)			Trip Rating or Clip	Freedom 2100 Series 2100/5 Star Advantage		Freedom Unitrol		F10		Type W		9800		11-300	
		240V	480V	600V		Single	Dual	Single	Dual ①	Single	Dual ①	Single	Dual	Single	Dual ①	Single	Dual
HFD	150	100	65	25	15 20 25 30 40 50 60 70												
					80	6 ② (152.4)		6 ② (152.4)						9 (228.6)			
					90	12 ③ (304.8)	12 (304.8)	12 (304.8)	12 (304.8)	12 ③ (304.8)	12 (304.8)	12 ③ (304.8)	12 (304.8)	14 (355.6)	14 (355.6)	14 (355.6)	14 (355.6)
					100												
					125	12 (304.8)	12 (304.8)	12 (304.8)	18 (457.2)	12 (304.8)	18 (457.2)	12 (304.8)	12 (304.8)	14 (355.6)	18 (457.2)	14 (355.6)	14 (355.6)
					150	12 ③ (304.8)						12 ③ (304.8)		9 (228.6)			
HJD	250	100	65	25	175 200												
					225	18 (457.2)		24 (609.6)		18 (457.2)		18 (457.2)		18 (457.2)		14 (355.6)	
					250												
HKD	400	100	65	35	300 350												
					400	24 (609.6)		24 ④ (609.6)		24 ④ (609.6)		24 (609.6)		28 ④ (711.2)		14 (355.6)	
HLD	600	100	65	35	500												
					600	24 (609.6)		24 ④ (609.6)		24 ④ (609.6)							
Fusible Switch	30	100	100	100	30	12 (304.8)	12 ③ (304.8)	12 (304.8)	18 (457.2)	12 (304.8)	18 (457.2)	12 (304.8)	12 ③ (304.8)	14 (355.6)	18 (457.2)	14 (355.6)	14 (355.6)
	60	100	100	100	60	12 (304.8)	12 ③ (304.8)	12 (304.8)	18 (457.2)	18 (457.2)	18 (457.2)	12 (304.8)	12 ③ (304.8)	14 (355.6)	18 (457.2)	14 (355.6)	14 (355.6)
	100	100	100	100	100	18 (457.2)		18 (457.2)		18 (457.2)		12 ③ (304.8)		18 (457.2)		18 (457.2)	18-2/3 (474.2)
	200	100	100	100	200	36 (914.4)		30 (762.0)		30 (762.0)		24 (609.6)		28 (711.2)		28 (711.2)	
	400	100	100	100	400	36 (914.4)		72 ④ (1828.8)		48 ④ (1219.2)		42 (1066.8)		42 ④ (1066.8)		42 (1066.8)	
	600	100	100	100	600	48 (1219.2)		72 (1828.8)									

① Combined ampacity no greater than 150A for 12-inch (304.8 mm) height. For greater than 150A, 18-inch (457.2 mm) required.
② 100A maximum.
③ Available in 18-inch (457.2 mm) height.
④ Cable in/cable out, no stab assembly.

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