



Cutler-Hammer

Motor Control Center Type 9800 Unitrol

Renewal Parts

Supersedes RP.03A.07.S.E
pages 1-24, dated September 2000

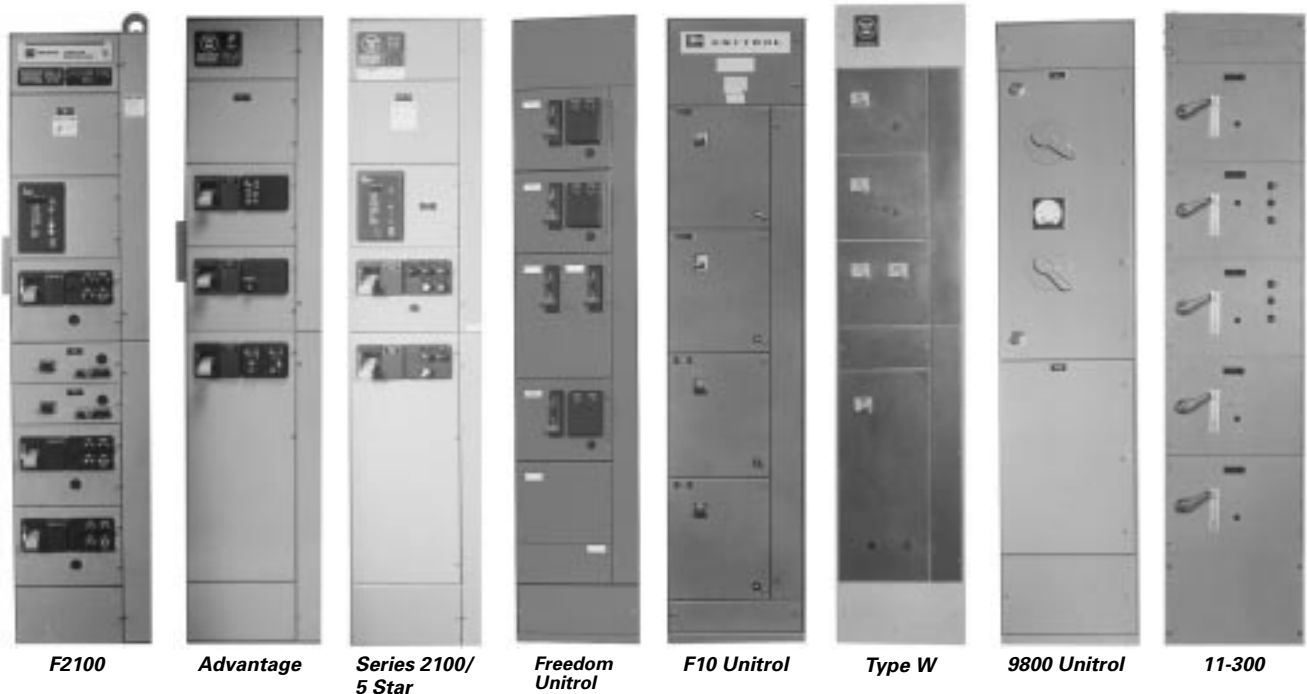
Description

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Motor Control Center Type 9800 Unitrol

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| MCC Type | Dates | Cutler-Hammer Renewal Parts Publication |
|------------------------------------|-------------------------------------|---|
| F2100 Advantage™ Series 2100 | 1995 – 1992 – 1987 – 95 | RP04304001E RP04304002E RP04304003E |
| 5 Star Freedom Unitrol F10 Unitrol | 1975 – 87 1988 – 94 1972 – 89 | RP04304003E RP04304004E RP04304005E |
| Type W 9800 Unitrol 11-300 | 1965 – 75 1956 – 74 1935 – 65 | RP04304006E RP04304007E 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 5 – 16** and turn to the section in this Renewal Parts to identify replacement units, options, structure parts, and unit parts for 9800 Unitrol.
3. For Replacement Feeder Units, refer to **Page 18**.
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*



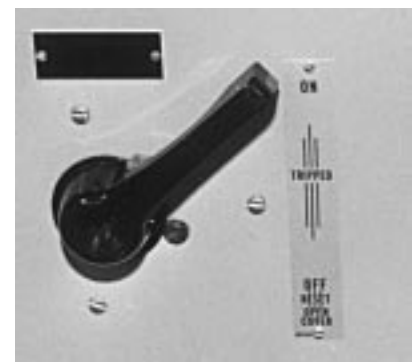
*F10 Unitrol Lever
and 9800 Unitrol*



Type W



9800 Unitrol



11-300

Procedure for Identifying Motor Control Center Types

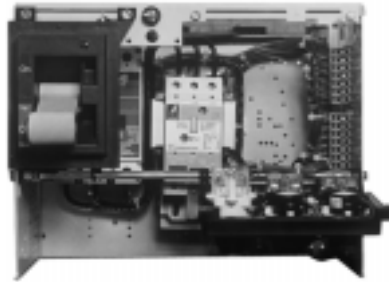
In the event that the nameplate is missing, it is possible to identify the MCC design by the type of handle mechanism, starter type, bucket width and door width.

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 |



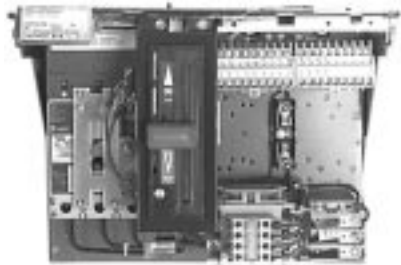
F2100



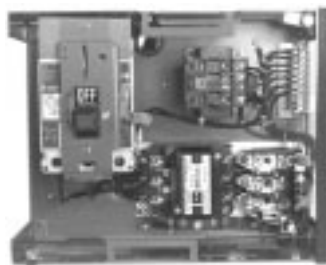
Advantage



Series 2100/5 Star



Freedom Unitrol



F10 Unitrol



Type W



9800 Unitrol



11-300

**9800 Unitrol
Product Description**

Introduced in 1956, the 9800 Unitrol was Cutler-Hammer's initial offering in the motor control center product grouping. The door width of the unit measured 19-3/8 inches (492.1 mm) wide and the bucket width measured 16-1/8 inches (409.6 mm). Unit height was measured in 9-1/3 inches (237.0 mm) and 14-inch (355.6 mm) increments. The MCC did not utilize a wireway.

ANSI 49 was applied to the units, structural framework, roof, side sheets, and all exterior doors.

9800 Unitrol starter units were originally supplied with a 3 Star and/or Citation starter and a rotary handle mechanism. Replacements today utilize the newer Freedom or Advantage starter and a slider handle mechanism and new door. The rotary handle mechanism is no longer available. Bus and bus systems were typically braced to withstand fault currents of 25,000A.



**9800 Unitrol
Structure**



9800 Unitrol Starter Unit

Table 3. 9800 Unitrol Product Rating

| |
|----------------------------------|
| Maximum Ratings |
| 3-Phase, 600V, 100 hp, 1600A Bus |

9800 Unitrol Replacement Starter Units

How to Order

When ordering a replacement unit, you receive:

- Series C® HMCP.
- Freedom Starter or Advantage 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 **Pages 6 – 11**. 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 12 – 14**. Space available determines allowable options.

Table 4. Catalog Numbering System Example

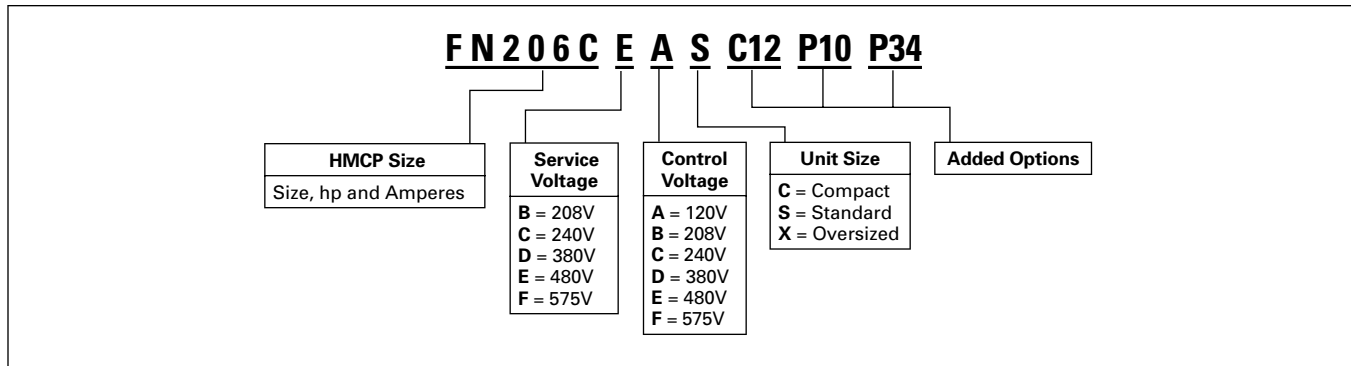


Table 5. Full Voltage Non-Reversing Combination Starter — HMCP

| 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 | FN206A FN206B FN206C FN206D | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 9 (228.6) High 14 (355.6) High | C S |
| 2 | 10 | 15 | 25 | 25 | 15 | 50 | FN206E | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 9 (228.6) High 14 (355.6) High | C S |
| 3 | 25 | 30 | 50 | 50 | 50 | 100 | FN206H | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 18-2/3 (474.1) High 28 (711.2) High | C S |
| 4 | 40 | 50 | 75 | 100 | 100 | 150 | FN206L | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 5 | 60 75 | 60 100 | 125 150 | 150 200 | 150 200 | 250 400 | FN206P FN206R | 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 |

9800 Unitrol Replacement Starter Units

Table 6. Full Voltage Reversing Combination Starter — HMCP

| 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 | 0.33 | 1 | 1 | 1.5 | 3 | FN216A | 208 | B | 120 | A | 18-2/3 (474.1) High 28 (711.2) High | C S |
| | 1 | 1 | 2 | 3 | 3 | 7 | FN216B | 240 | C | 208 | B | | |
| | 3 | 3 | 5 | 7.5 | 7.5 | 15 | FN216C | 380 | D | 240 | C | | |
| | 7.5 | 7.5 | 10 | 10 | 10 | 30 | FN216D | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | 575 | F | 480 | F | | | |
| 2 | 10 | 15 | 25 | 25 | 25 | 50 | FN216E | 208 | B | 120 | A | 28 (711.2) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |
| 3 | 25 | 30 | 50 | 50 | 50 | 100 | FN216H | 208 | B | 120 | A | 42 (1066.8) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |
| 4 | 40 | 50 | 75 | 100 | 100 | 150 | FN216L | 208 | B | 120 | A | 42 (1066.8) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |

Table 7. Full Voltage 2 Speed 1 Winding — Constant/Variable Torque — 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 | 0.33 | 1 | 1 | 1.5 | 3 | FN946A | 208 | B | 120 | A | 28 (711.2) High | S |
| | 1 | 1 | 2 | 3 | 3 | 7 | FN946B | 240 | C | 208 | B | | |
| | 3 | 3 | 5 | 7.5 | 7.5 | 15 | FN946C | 380 | D | 240 | C | | |
| | 7.5 | 7.5 | 10 | 10 | 10 | 30 | FN946D | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | 575 | F | 575 | F | | | |
| 2 | 10 | 15 | 25 | 25 | 25 | 50 | FN946E | 208 | B | 120 | A | 28 (711.2) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |
| 3 | 25 | 30 | 50 | 50 | 50 | 100 | FN946H | 208 | B | 120 | A | 42 (1066.8) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |
| 4 | 40 | 50 | 75 | 100 | 100 | 150 | FN946L | 208 | B | 120 | A | 56 (1422.4) High | S |
| | | | | | | | | 240 | C | 208 | B | | |
| | | | | | | | | 380 | D | 240 | C | | |
| | | | | | | | | 480 | E | 380 | D | | |
| | | | | | | | | 575 | F | 480 | E | | |
| | | | | | | | | 575 | F | 575 | F | | |

① For constant horsepower instead of constant/variable torque, see Option SV6 on Page 14.

9800 Unitrol Replacement Starter Units

Table 8. Full Voltage 2 Speed 2 Winding — Constant/Variable Torque — 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 | 0.33 | 1 | 1 | 1.5 | 3 | FN956A | 208 | B | 120 | A | 28 (711.2) High | S | | | | | | | | | | | |
| | 1 | 1 | 2 | 3 | 3 | 7 | FN956B | 240 | C | 208 | B | | | | | | | | | | | | | |
| | 3 | 3 | 5 | 7.5 | 7.5 | 15 | FN956C | 380 | D | 240 | C | | | | | | | | | | | | | |
| | 7.5 | 7.5 | 10 | 10 | 10 | 30 | FN956D | 480 | E | 380 | D | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 575 | F | 480 | E | | | | | | | |
| 2 | 10 | 15 | 25 | 25 | 50 | FN956E | 208 | B | 120 | A | 28 (711.2) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 25 | 30 | 50 | 50 | 100 | FN956H | 208 | B | 120 | A | 42 (1066.8) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 40 | 50 | 75 | 100 | 150 | FN956L | 208 | B | 120 | A | 42 (1066.8) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | |

① For constant horsepower instead of constant/variable torque, see Option SV6 on Page 14.

Table 9. Reduced Voltage Part Winding — HMCP

| 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 | FN706D | 208 | B | 120 | A | 28 (711.2) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 20 | 25 | 40 | 40 | 40 | 100 | FN706F | 208 | B | 120 | A | 28 (711.2) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 40 | 50 | 75 | 75 | 75 | 150 | FN706J | 208 | B | 120 | A | 42 (1066.8) High | S | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 240 | C | 208 | B | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 380 | D | 240 | C | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 480 | E | 380 | D |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

9800 Unitrol 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 10. Replacement *IT*. Soft Start Units

| Service Factor | Horsepower | <i>IT</i> . Soft-Start Amperes | HMCP Amperes | Catalog Code | Service Voltage | Catalog Code | Control Voltage | Catalog Code | Space Options Inches (mm) | Catalog Code |
|----------------|------------|--------------------------------|--------------|--------------|-----------------|--------------|-----------------|--------------|---------------------------|--------------|
| 1.15 | 20 | 37 | 150 | FN306A | 480 | E | 120 | A | 18 (457.2) High | S |
| | 40 | 66 | | FN306B | | | 208 | B | | |
| | 60 | 105 | 250 | FN306C | | | 240 | C | 28 (711.2) High | |
| | 75 | 135 | | FN306D | | | 380 | D | | |
| | 125 | 180 | | 400 ① | | | FN306E | 480 | E | |
| | 150 | 240 | FN306F | | | | 575 | F | | |
| | 200 | 304 | FN306G | | | | — | — | | |

① No stab — unit cable in/cable out.

Table 11. Full Voltage Non-Reversing — Fusible 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 | | | | | | | | |
| 1 | 7.5 | 7.5 | 10 | 10 | 10 | 30 | FN204C | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 14 (355.6) High | S |
| 2 | — 10 | — 15 | 15 25 | 15 25 | 25 — | 30 60 | FN204E FN204F | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 14 (355.6) High | S |
| 3 | — 25 | 20 30 | 30 50 | 40 50 | 50 — | 60 100 | FN204H FN204J | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 4 | — 50 | — 50 | — 60 | 60 100 | 75 100 | 100 200 | FN204L FN204M | 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 |

② Fuse clip ratings shown are based on Class RK1, 5 fuses.

9800 Unitrol Replacement Starter Units

Table 12. Full Voltage 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 | FN214C | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 2 | — 10 | — 15 | 15 25 | 15 25 | 25 — | 30 60 | FN214E FN214F | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 3 | — 25 | 20 30 | 30 50 | 40 50 | 50 — | 60 100 | FN214H FN214J | 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 |
| 4 | — 50 | — 50 | — 60 | 60 100 | 75 100 | 100 200 | FN214L FN214M | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 56 (1422.4) High | S |

① Fuse clip ratings shown are based on Class RK1, 5 fuses.

Table 13. Full Voltage 2 Speed 1 Winding — Fusible — Constant/Variable Torque ②③

| 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 | FN944C | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 2 | — 10 | — 15 | 15 25 | 15 25 | 25 — | 30 60 | FN944E FN944F | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 3 | — 25 | 20 30 | 30 50 | 40 50 | 50 — | 60 100 | FN944H FN944J | 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 |

② Fuse clip ratings shown are based on Class RK1, 5 fuses.

③ For constant horsepower instead of constant/variable torque, see Option SV6 on Page 14.

9800 Unitrol Replacement Starter Units

Table 14. Full Voltage 2 Speed 2 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 | FN954C | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 2 | — 15 | — 15 | 15 25 | 15 25 | 25 — | 30 60 | FN954E FN954F | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 3 | — 25 | 20 30 | 30 50 | 40 50 | 50 — | 60 100 | FN954H FN954J | 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 |
| 4 | — 50 | — 50 | — 60 | 60 100 | 75 100 | 100 200 | FN954L FN954M | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 56 (1422.4) High | S |

① Fuse clip ratings shown are based on Class RK1, 5 fuses.

② For constant horsepower instead of constant/variable torque, see Option SV6 on Page 14.

Table 15. 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 | FN704D | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 28 (711.2) High | S |
| 2 | — 20 | 15 25 | 25 40 | 30 40 | 40 — | 60 100 | FN704F FN704G | 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 | 50 75 | 60 75 | 100 200 | FN704J FN704K | 208 240 380 480 575 | B C D E F | 120 208 240 380 480 575 | A B C D E F | 56 (1422.4) High | S |

③ Fuse clip ratings shown are based on Class RK1, 5 fuses.

9800 Unitrol Unit Options

Table 16. Option Groups ①

| Groups | Description | Page Number |
|--------|---|-------------|
| A | Advantage Options | 12 |
| B | Circuit Breaker Options | 12 |
| C | Control Power Source Options | 12 |
| G | Ground Fault Protection Options | 12 |
| M | Metering Options | 13 |
| O | Overload Options | 13 |
| P | Pilot Device Options | 13 |
| R | Relay and Timer (Control, Voltage, Current) Options | 14 |
| S | Starter Contact Options | 14 |
| SV | Vacuum Starter Options | 14 |
| T | Terminal Block Options | 14 |
| U | Unit Wiring Options | 14 |

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

Table 17. Option Suffix

| Suffix | Description | Space Required ② |
|--------|-------------|------------------|
|--------|-------------|------------------|

A — Advantage Options

| | | |
|-----|--|------|
| A10 | Substitute Advantage Starter Size 1 | ③ |
| A11 | Substitute Advantage Starter Size 2 | ③ |
| A12 | Substitute Advantage Starter Size 3 | ③ |
| A13 | Substitute Advantage Starter Size 4 | ③ |
| A14 | Substitute Advantage Starter Size 5 | C ③④ |
| A15 | Advantage Hand/Off/Auto ACM for FVNR or RVNR Starters | C ④ |
| A16 | Advantage Stop/Start for FVNR or RVNR Starters | C ④ |
| A17 | Advantage Hand/Off/Auto-Start/Stop ACM for FVNR or RVNR Starters | C ④ |
| A18 | Advantage Fast/Slow/Stop 2-Speed Starters | C ④ |
| A19 | Advantage Forward/Reverse/Stop for Reversing Starters | C ④ |
| A20 | Advantage Fast/Slow/Off/Auto for 2-Speed Starters | C ④ |
| A21 | Advantage Forward/Reverse/Off/Auto for Reversing Starters | C ④ |
| A22 | ACM Metering Module | C ④ |
| A23 | WBELL Form C Bell Alarm Contact | C ④ |
| A24 | Reset with Overload Alarm and Trip Indication | C ④ |
| A25 | 120V AC PLC Circuit Compatible Load Resistor | C ④ |
| A26 | WPONI PowerNet Communications Module | C ④ |
| A27 | Advantage Status Only ACM | C ④ |
| A28 | WPONIDNA DeviceNet Communications Module | C ④ |

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 |

② Minimum unit size required (refer to Replacement Unit pages).

③ Consult factory for spacing.

④ Not available in 9 inches (228.6 mm).

9800 Unitrol Unit Options

Table 17. Option Suffix (Continued)

| Suffix | Description | Space Required ^① |
|--|---|-----------------------------|
| M — Metering Options | | |
| M10 | Mini Voltmeter | C ^② |
| M11 | Mini Ammeter with Current Transformer | S |
| M12 | Mini Elapsed Time Meter | C ^② |
| 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 Contact (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 |
| P — Pilot Device Options ^③ | | |
| 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 |

^① Minimum unit size required (refer to Replacement Unit pages).

^② Customer to supply range of meter required.

^③ Available only with F2100, Advantage, Series 2100/5 Star, Freedom Unitrol, F10 Unitrol and Type W. Consult factory for specific size limitations.

9800 Unitrol Unit Options

Option Suffix (Continued)

| Suffix | Description | Space Required ^① |
|--------|-------------|-----------------------------|
|--------|-------------|-----------------------------|

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 | ② |
| R20 | Time Clock 7 Day | ② |
| 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 |

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: | | | | | | | |
|-----|--|--------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|
| | <table border="1"> <thead> <tr> <th></th> <th>Quantity of Normally Open Contacts</th> <th>Quantity of Normally Closed Contacts</th> </tr> </thead> <tbody> <tr> <td>S</td> <td>2</td> <td>3</td> </tr> </tbody> </table> | | Quantity of Normally Open Contacts | Quantity of Normally Closed Contacts | S | 2 | 3 | |
| | Quantity of Normally Open Contacts | Quantity of Normally Closed Contacts | | | | | | |
| S | 2 | 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.

9800 Unitrol Structure Parts



9800 Structure

Door Mounting Hardware Kit



Door Mounting Hardware Kit

Table 18. Door Mounting Hardware Kit

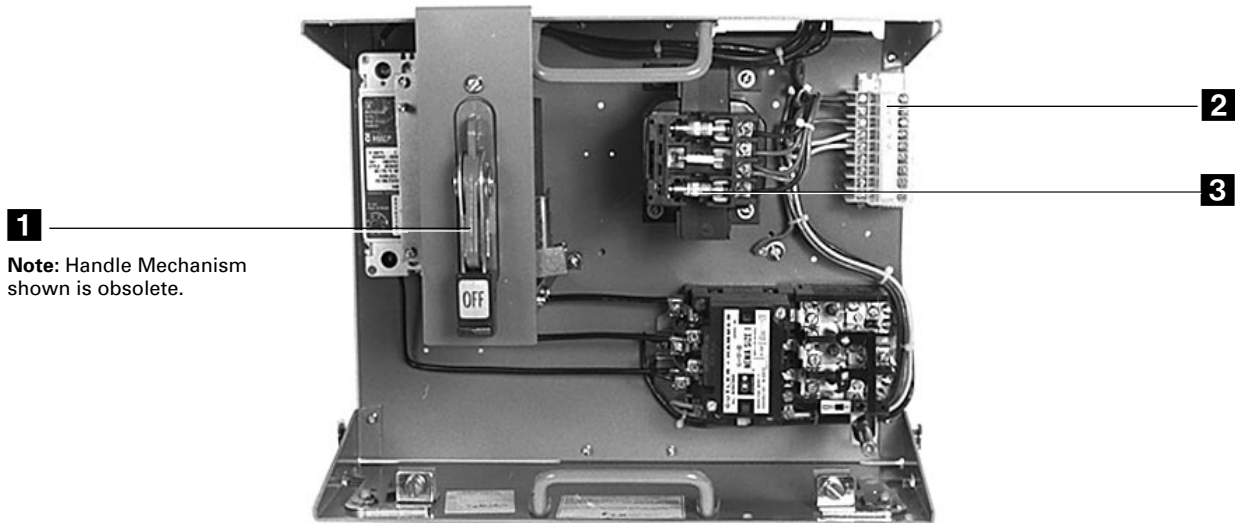
| Description | Style Number |
|--|-------------------|
| Kit includes (2) 1/4 turn latches, 2 hinges, clip and label. | 3A73619G01 |

Blank Unit Door Kit

Table 19. Blank Unit Door Kit

| Dimensions in Inches (mm) | | Style Number |
|---------------------------|----------------|-------------------|
| Height | Width | |
| 4-1/3 (110.1) | 19-3/8 (492.1) | 3A73619G09 |
| 4-1/3 (110.1) | 19-3/8 (492.1) | 3A73619G10 |
| 14 (355.6) | 19-3/8 (492.1) | 3A73619G11 |
| 18-2/3 (711.2) | 19-3/8 (492.1) | 3A73618G12 |
| 28 (711.2) | 19-3/8 (492.1) | 3A73618G13 |
| 42 (1066.8) | 19-3/8 (492.1) | 3A73618G14 |
| 56 (1422.4) | 19-3/8 (492.1) | 3A73618G15 |

9800 Unitrol Unit Parts



1
Note: Handle Mechanism shown is obsolete.

Table 20. Unit Parts

| Reference | Description | Page |
|-----------|------------------------------|------|
| 1 | Operating Handle Mechanism | 16 |
| | Lever | 16 |
| | Slider | 16 |
| | External Operator Interlocks | 16 |
| 2 | Terminal Blocks | 16 |

| Reference | Description | Page |
|-----------|-------------------------------------|------|
| 2 | Overload Reset Button and Reset Rod | 16 |
| | Disconnect Switch | 16 |
| | Load Side Fuse Base | 16 |
| | Fuse Clip Kit | 16 |
| | Unit Mounting Hardware | 16 |

9800 Unitrol Unit Parts

Operating Handle Mechanism Kit 1



Operating Handle Mechanism Kit

Table 21. Operating Handle Mechanism Kit

| Description | Style Number |
|--|--------------|
| Slider Type for Circuit Breaker | |
| HMCP or FS | 10-7175 |
| KS, LS, MS or JD | 10-7176 |
| Lever Type for Circuit Breaker | |
| Obsolete — Consult Factory | — |
| Lever Type for Fusible Switch | |
| Obsolete — Consult Factory | — |
| Rotary Type | |
| Obsolete | — |

Note: Kit includes handle mechanism with mounting hardware.

Unit Mounting Hardware Kit 3



Unit Mounting Hardware Kit

Table 22. Unit Mounting Hardware Kit

| Description | Style Number |
|--|--------------|
| Kit includes left and right support brackets, horizontal cross channel, and 2 mounting brackets with hardware. | 3A73619G08 |

Overload Reset Button and Reset Rod Extension Kit 2

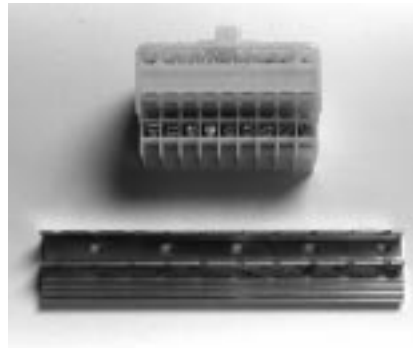


Overload Reset Button and Reset Rod Extension Kit

Table 23. Overload Reset Button and Reset Rod Extension Kit

| Description | Style Number |
|---|--------------|
| For sizes 1 – 4, the kit includes reset button, retainer, reset rod, and adapter. | 3A73619G03 |

Terminal Blocks 2



Terminal Blocks

Table 24. Terminal Blocks

| Description | Style Number |
|---------------------------------------|--------------|
| Terminal Blocks with Mounting Bracket | 3A73619G02 |

Disconnect Switch for Fusible Devices 3



Disconnect Switch for Fusible Devices

Obsolete — Consult Factory

Load Side Fuse Base 3

Obsolete — Consult Factory

Fuse Clip Kit 3

Table 25. Fuse Clip Kit

| Description | Style Number |
|-------------|--------------|
| 30A | 3A73618G04 |
| 60A | 3A73618G05 |
| 100A | 3A73618G06 |
| 200A | 3A73618G07 |

Note: Kit includes one set of fuse clips.

External Operator Interlocks 1



External Operator Interlocks

Table 26. External Operator Interlocks

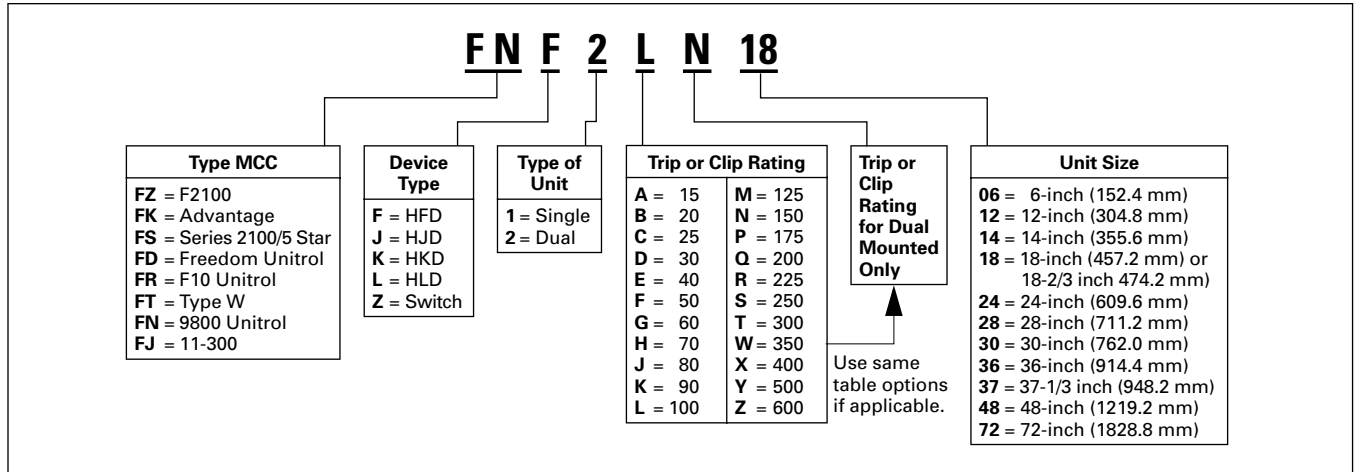
| Description | Style Number |
|---------------|--------------|
| Lever | |
| 1 NO/1 NC | 10-5355-2 |
| 2 NO/2 NC | 10-5355-3 |
| Slider | |
| 1 NO/1 NC | 10-5355 |
| 2 NO/2 NC | 10-5355-5 |

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 27. Catalog Numbering System Example



NEMA is the registered trademark and service mark of the National Electrical Manufacturers Association. UL is a registered trademark of Underwriters Laboratories Inc.

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 28** below.

Step 2

Verify the amount of space available.

Step 3

Create a catalog number using **Table 27** on **Page 17**.

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 28. Electrical Characteristics and Space Requirements of Molded Case Circuit Breakers 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 ^④ (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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