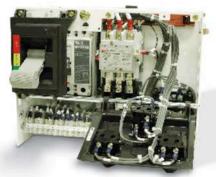
# Quick selector reference guide

Motor Control Center Aftermarket Buckets

Ì.



# Table of contents



Series 2100 MCC bucket

# Motor Control Center (MCC) Aftermarket Buckets

# Overview

| Product contact information                              | 4   |
|--|-----|
| Questions to ask   | 5   |
| MCC selection & sizes                                    | 6-7 |
| Catalog numbering (Aftermarket MCC Starter Buckets)      |     |
| Aftermarket MCC Starter types                            | 9   |
| Catalog numbering (Aftermarket MCC Feeder Buckets/Units) |     |
| Common modifications                                     | 11  |

# Eaton<sup>®</sup> MCC designs

| FlashGard <sup>®</sup> |    |
|------------------------|----|
| <i>IT</i> . MCC        |    |
| Freedom 2100 (F2100)   | 14 |

# Cutler-Hammer® MCC designs

| Freedom Unitrol <sup>®</sup> | 15 |
|------------------------------|----|
| F10 Unitrol                  | 16 |
| 9800 Unitrol                 | 17 |

# Westinghouse® MCC designs

| Advantage          |  |
|--------------------|--|
| Series 2100/5 Star |  |
| Туре W             |  |
| 11-300             |  |
|                    |  |

# Other manufacturer MCC designs

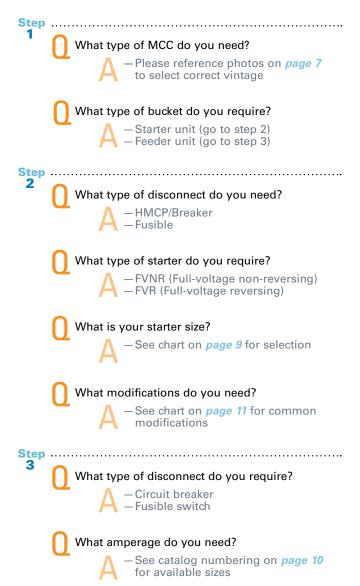
| ITE/Gould® (5600 Series)                                 | 22 |
|--|----|
| General Electric® (7700/8000)                            | 23 |
| Allen-Bradley® (Centerline Series K and later)           |    |
| Siemens®/Furnas® (Series 89)                             |    |
| Square D® (Model 4/ Model 5/ Model 6)                    | 26 |
| Moeller® (Series 90, 100, 170, 200, 3000 and Modan 3000) | 27 |
| FPE® (5325/5320)   | 28 |
|  |    |

# Support services

| MCC Aftermarket selling tips | 29 |
|------------------------------|----|
| Product & service locations  |    |
| MCC terminology              | 31 |

| Product contact information<br>Call: 1-800-OLD-UNIT (1-800-653-8648) |  |  |  |  |  |
|--|--|--|--|--|--|
| Notes:   |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

# **Questions to ask**



# MCC selection & sizes

# Eaton Motor Control Centers Aftermarket products and services

| Table for identifying Motor Control Center types |                                |                            |                          |                              |                |  |  |  |
|--|--------------------------------|----------------------------|--------------------------|------------------------------|----------------|--|--|--|
| МСС Туре   | Type of<br>Handle<br>Mechanism | Starter Type               | Bucket Width<br>(Inches) | Door<br>Width<br>(Inches)    | Page<br>Number |  |  |  |
| 11-300   | Rotary                         | 11-200 Life<br>Line Type N | 15-3/4                   | 20                           | 21             |  |  |  |
| 9800<br>Unitrol                                  | Rotary and<br>Lever            | 3 Star                     | 16-1/8                   | 19-3/8                       | 17             |  |  |  |
| Type W   | Slider                         | A200 or<br>11-200          | 11-3/4                   | 13-3/8                       | 20             |  |  |  |
| F10<br>Unitrol                                   | Slider and<br>Lever            | Citation                   | 14                       | 14-3/4 with<br>Wireway       | 16             |  |  |  |
|  |                                |                            |                          | 19-1/2<br>without<br>Wireway |                |  |  |  |
| Freedom<br>Unitrol                               | Slider                         | Freedom<br>Series          | 13-7/8                   | 15-1/2                       | 15             |  |  |  |
| Series<br>2100/<br>5 Star                        | Lever                          | A200                       | 13-3/4                   | 15-5/8                       | 19             |  |  |  |
| Advantage  | Lever                          | Advantage                  | 13-3/4                   | 15-5/8                       | 18             |  |  |  |
| Freedom<br>2100                                  | Lever                          | Freedom<br>Series          | 13-3/4                   | 15-5/8                       | 14             |  |  |  |
| <i>IT.</i> MCC                                   | Rotary                         | <b>IT.</b> -EM             | 13-3/4                   | 15-5/8                       | 13             |  |  |  |
| FlashGard  | Rotary                         | Freedom<br>Series          | 13-3/4                   | 15-5/8                       | 12             |  |  |  |

# Table for identifying Motor Control Center types

Note: See photos on page 7 to identify the vintage.

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.

Contact 1-800-0LD-UNIT (1-800-653-8648).

#### **MCC type**



11-300



F10 Unitrol



9800 Unitrol



Freedom Unitrol



Type W



Series 2100/5 Star



Advantage



Freedom 2100



FlashGard MCC

# Identification by original handle mechanism



Freedom 2100, Advantage, Series 2100/5 Star



F10 Unitrol Lever



11-300



Freedom Unitrol



F10 Unitrol Slider



Type W



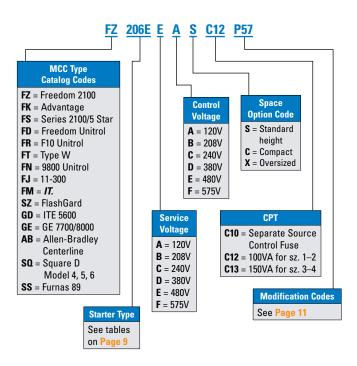
9800 Unitrol



IT. Handles

# Catalog numbering system

Aftermarket MCC Starter Buckets



# Aftermarket MCC Starter types

#### Full-Voltage Non-reversing Combination Starter-HMCP Disconnect

| NEMA | Maxim | um Hors | НМСР | Starter<br>Class |      |         |      |
|------|-------|---------|------|------------------|------|---------|------|
| Size | 208V  | 240V    | 380V | 480V             | 600V | Size    | Code |
| 1    | .50   | .33     | 1    | 1                | 1.50 | 3 Amp   | 206A |
| 1    | 1     | 1       | 2    | 3                | 3    | 7 Amp   | 206B |
| 1    | 3     | 3       | 5    | 7.50             | 7.50 | 15 Amp  | 206C |
| 1    | 7.50  | 7.50    | 10   | 10               | 15   | 30 Amp  | 206D |
| 2    | 10    | 15      | 25   | 25               | 30   | 50 Amp  | 206E |
| 3    | 25    | 30      | 50   | 50               | 50   | 100 Amp | 206H |
| 4    | 40    | 50      | 75   | 100              | 100  | 150 Amp | 206L |

#### Full-Voltage Reversing Combination Starter-HMCP Disconnect

| NEMA | Maxim | um Hors | - НМСР | Starter<br>Class |      |         |      |
|------|-------|---------|--------|------------------|------|---------|------|
| Size | 208V  | 240V    | 380V   | 480V             | 600V | Size    | Code |
| 1    | .50   | .33     | 1      | 1                | 1.50 | 3 Amp   | 216A |
| 1    | 1     | 1       | 2      | 3                | 3    | 7 Amp   | 216B |
| 1    | 3     | 3       | 5      | 7.50             | 7.50 | 15 Amp  | 216C |
| 1    | 7.50  | 7.50    | 10     | 10               | 15   | 30 Amp  | 216D |
| 2    | 10    | 15      | 25     | 25               | 30   | 50 Amp  | 216E |
| 3    | 25    | 30      | 50     | 50               | 50   | 100 Amp | 216H |
| 4    | 40    | 50      | 75     | 100              | 100  | 150 Amp | 216L |

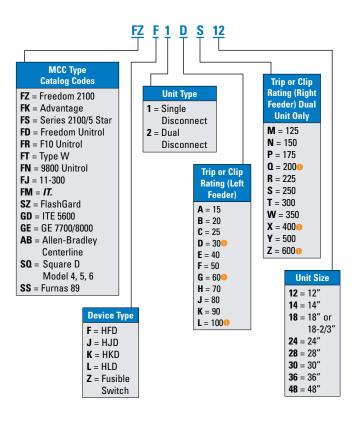
#### Full-Voltage Non-reversing Combination Starter-Fusible Disconnect

|              | Maxim | um Hors | epower |      |      |                           | Starter       |
|--------------|-------|---------|--------|------|------|---------------------------|---------------|
| NEMA<br>Size | 208V  | 240V    | 380V   | 480V | 600V | <sup>—</sup> Fuse<br>Size | Class<br>Code |
| 1            | 7.50  | 7.50    | 10     | 10   | 15   | 30 Amp                    | 204D          |
| 2            | 10    | 15      | 25     | 25   | 30   | 50 Amp                    | 204E          |
| 3            | 25    | 30      | 50     | 50   | 50   | 100 Amp                   | 204H          |
| 4            | 40    | 50      | 75     | 100  | 100  | 150 Amp                   | 204L          |

## Full-Voltage Reversing Combination Starter-Fusible Disconnect

|              | Maxim | - 5  | Starter |      |      |                           |               |
|--------------|-------|------|---------|------|------|---------------------------|---------------|
| NEMA<br>Size | 208V  | 240V | 380V    | 480V | 600V | <sup>–</sup> Fuse<br>Size | Class<br>Code |
| 1            | 7.50  | 7.50 | 10      | 10   | 15   | 30 Amp                    | 214D          |
| 2            | 10    | 15   | 25      | 25   | 30   | 50 Amp                    | 214E          |
| 3            | 25    | 30   | 50      | 50   | 50   | 100 Amp                   | 214H          |
| 4            | 40    | 50   | 75      | 100  | 100  | 150 Amp                   | 214L          |

# Catalog numbering system Aftermarket MCC Feeder Buckets/Units



Fusible Disconnect Sizes

# **Common modifications**

#### Abbreviated list of common modification codes

Note: Please contact your local Service Center for all available modifications and to learn which modifications will work for your aftermarket needs.

| Modification | cations will work for your aftermarket needs.                                       |
|--------------|---|
| Codes        | Option<br>Description   |
| B10          | Breaker Shunt Trip—120V   |
| B11          | Breaker Auxiliary Switch—1NO/1NC  |
| B19          | Breaker Auxiliary Switch—2N0/2NC  |
| C10          | Control fuse wired for separate source in lieu of CPT                               |
| C11          | Control fuse/disconnect for separate source in lieu of CPT                          |
| C12          | CPT 100VA for size 1 and 2 starters, fused  |
| C13          | CPT 150VA for size 3 and 4 starters, fused  |
| C18          | Full capacity CPT for size 5 starters, fused  |
| M12          | Mini Elapsed Time Meter   |
| M16          | IQ-200 Meter with 3 CTs   |
| 019          | Overload Relay Heater/Heater Pack   |
| 020          | C440 Solid-State Overload Relay   |
| P10          | Red 'RUN' Light   |
| P11          | Green 'STOPPED' Light   |
| P15          | Red 'RUN' Push-to-Test Light  |
| P16          | Green 'STOPPED' Push-to-Test Light  |
| P20          | Special Function Light  |
| P32          | 'START/STOP' Pushbutton   |
| P35          | 'ON/OFF' Pushbutton   |
| P36          | 'FORWARD/REVERSE/STOP' Pushbutton   |
| P38          | 'FAST/OFF/SLOW' Pushbutton  |
| P41          | Special Function Pushbutton   |
| P50          | 'ON-OFF' Selector Switch  |
| P53          | 'START-STOP' Selector Switch  |
| P55          | 'FORWARD-REVERSE' Selector Switch   |
| P56          | Special Function 2-Position Selector Switch   |
| P57          | 'HAND-OFF-AUTO' Selector Switch   |
| P58          | 'LOCAL-OFF-REMOTE' Selector Switch  |
| P59          | 'FAST-OFF-SLOW' Selector Switch   |
| P60          | 'HIGH-OFF-LOW' Selector Switch  |
| P61          | Special Function 3-Position Selector Switch   |
| R24          | D15 4-Pole Control Relay  |
| S11          | 1NO-1NC Starter Auxiliary Contacts  |
| S22          | 2NO-2NC Starter Auxiliary Contacts  |
| T10          | Pull-Apart Type Terminal Blocks (Standard on all Vintages except Type W and 11-300) |
| U10          | Surge Suppressor on Coil  |
| U11          | Type SIS Control Wire   |
| U14          | Wiremarkers—Sleeve Type on all Control Wire   |
| U17          | Wiring Diagram Inside Starter Unit Door   |

# Eaton MCC designs



Compatible with 1981–Present Vintages of Freedom 2100, Series 2100/5 Star and Advantage only.

# **Replacement Starter Units**

### Specifications

|                   | Breaker   |               | Fusible   |               |
|-------------------|-----------|---------------|-----------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA      | Spacing (in.) |
| FVNR              | 1–5       | Call          | 1–5       | Call          |
| FVR               | 1–5       | Call          | 1–5       | Call          |
| IT. Soft Starters | 10–200 hp | Call          | 10–200 hp | Call          |
| 2-Speed 1 Winding | 1–4       | Call          | 1–4       | Call          |
| 2-Speed 2 Winding | 1—4       | Call          | 1—4       | Call          |
| RVAT              | 2–4       | Call          | 2–4       | Call          |
| Part Winding      | 1–4       | Call          | 1–4       | Call          |
| Wye Delta         | 2–4       | Call          | 2–4       | Call          |

# **Feeder Units**

- Breaker: 15–400 Amps
- Fusible: 30–400 Amps

# Units supplied with

- UL label
- New stabs
- · New steel wrapper
- New door
- · Mounting hardware
- Complete upgrade kit

#### Options

Eaton FlashGard

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call<sup>1</sup> and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)





## **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible   |               |
|-------------------|-----------|---------------|-----------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA      | Spacing (in.) |
| FVNR              | 1–5       | Call          | 1—5       | Call          |
| FVR               | 1–5       | Call          | 1—5       | Call          |
| 2-Speed 1 Winding | 1–4       | Call①         | 1-4       | Call          |
| 2-Speed 2 Winding | 1–4       | Call          | 1—4       | Call          |
| IT. Soft Starters | 10–200 hp | Call          | 10–200 hp | Call          |

# Feeder Units

- Breaker: 15-600 Amps
- Fusible: 30–400 Amps

Note: 600 Amp units are fixed mounted.

# Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- · Mounting hardware

# **Options**

- · Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: *IT.* components have reached end-oflife status. Please contact Eaton MCC Aftermarket for replacement options.
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.

1-800-0LD-UNIT (1-800-653-8648)



Eaton Freedom 2100 (F2100) 1994–Present

#### **Replacement Starter Units**

| c |    | -:4 |    | ati | -   |    |
|---|----|-----|----|-----|-----|----|
| э | pe | CII | 10 | au  | UI. | 12 |

|                         | Breaker   |               | Fusible |               |
|-------------------------|-----------|---------------|---------|---------------|
| Units                   | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR                    | 1–5       | 6—36          | 1–5     | 6–60          |
| FVR                     | 1–5       | 18–60         | 1—4     | 24–54         |
| 2-Speed 1 Winding       | 1–4       | 24–36         | 1–4     | 24–60         |
| 2-Speed 2 Winding       | 1-4       | 24–30         | 1-4     | 24–54         |
| Autotransformer         | 2–4       | 36–48         | 2–4     | 36–72         |
| Part Winding            | 1-4       | 24–36         | 1-4     | 24–54         |
| Wye Delta Open          | 2–4       | 42–60         | 2–4     | 30–72         |
| Wye Delta Closed        | 2–4       | 42–60         | 2–4     | 30–72         |
| Non-reversing<br>Vacuum | _         | _             | 4–5     | 36–48         |
| IT. Soft Starters       | 10–200 hp | 12–36         | _       | _             |

# **Feeder Units**

- Breaker: 15–600 Amps
- Fusible: 30–600 Amps

Note: 600 Amp units are fixed mounted.

# **Units supplied with**

- UL label
- New stabs
- New steel wrapper
- New door
- · Mounting hardware

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)

# Cutler-Hammer MCC designs



Cutler-Hammer Freedom Unitrol 1988–1994

#### **Replacement Starter Units**

#### Specifications

|                   |           |               | E       |               |
|-------------------|-----------|---------------|---------|---------------|
|                   | Breaker   |               | Fusible |               |
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1—5       | 6–48          | 1–5     | 6–72          |
| FVR               | 1—5       | 18–72         | 1—4     | 18–48         |
| 2-Speed 1 Winding | 1–5       | 24–72         | 1–4     | 24–60         |
| 2-Speed 2 Winding | 1–5       | 24–72         | 1—4     | 24–60         |
| Autotransformer   | 2–5       | 48–72         | 2–4     | 48–72         |
| Part Winding      | 1–5       | 24–72         | 1–4     | 24–60         |
| Wye Delta Open    | 2–5       | 30–72         | 2–5     | 30–72         |
| Wye Delta Closed  | 2–5       | 36–72         | 2–4     | 30–72         |
| IT. Soft Starters | 10–200 hp | 18–36         | —       |               |
|                   |           |               |         |               |

# Feeder Units

- Breaker: 15–600 Amps
- Fusible: 30-600 Amps
- Note: 400 Amp units and above are cable in/out. No stabs are provided.

# Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- Mounting hardware

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)



Cutler-Hammer F10 Unitrol 1972–1989

#### **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible |               |
|-------------------|-----------|---------------|---------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1–5       | 12–48         | 1–4     | 12–36         |
| FVR               | 1—4       | 18–36         | 1—4     | 18–42         |
| 2-Speed 1 Winding | 1–4       | 24–42         | 1–4     | 24–48         |
| 2-Speed 2 Winding | 1-4       | 18–36         | 1-4     | 18–42         |
| Part Winding      | 1–3       | 18–30         | 1–3     | 18–42         |
| Wye Delta Open    | 2–4       | 24–48         | 2-4     | 30–60         |
| Wye Delta Closed  | 2–5       | 30–72         | 2–3     | 36–48         |
| IT. Soft Starters | 10–200 hp | 18–48         | _       | _             |

# **Feeder Units**

- Breaker: 15–400 Amps
- Fusible: 30–400 Amps
- Note: 400 Amp units and above are cable in/out. No stabs are provided.

## Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- Mounting hardware

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)



Cutler-Hammer 9800 Unitrol 1956–1974

## **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible |               |
|-------------------|-----------|---------------|---------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1–5       | 9–42          | 1—4     | 14–42         |
| FVR               | 1-4       | 18-2/3-42     | 1—4     | 28–56         |
| 2-Speed 1 Winding | 1–4       | 28–56         | 1–3     | 28–42         |
| 2-Speed 2 Winding | 1-4       | 28–42         | 1—4     | 28–56         |
| Part Winding      | 1–3       | 28–42         | 1–3     | 28–56         |
| IT. Soft Starters | 10–200 hp | 18–42         | _       | _             |

# Feeder Units

- Breaker: 15–400 Amps
- Fusible: 30–400 Amps
- Note: 400 Amp units and above are cable in/out. No stabs are provided.

#### Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- · Mounting hardware

- Pushbuttons
- Pilot lights
- Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)

# Westinghouse MCC designs



Westinghouse Advantage 1991–Present

#### **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible |               |
|-------------------|-----------|---------------|---------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1–5       | 6–36          | 1—5     | 6–54          |
| FVR               | 1–5       | 18–60         | 1—4     | 24–48         |
| 2-Speed 1 Winding | 1–4       | 24–36         | 1—4     | 24–54         |
| 2-Speed 2 Winding | 1–5       | 24–72         | 1—4     | 24–48         |
| Autotransformer   | 2–4       | 36–48         | 2-4     | 36–72         |
| Part Winding      | 1—4       | 24–36         | 1—4     | 24–48         |
| Wye Delta Open    | 2–4       | 30–42         | 2—4     | 36–60         |
| Wye Delta Closed  | 2–4       | 48–60         | 2—4     | 54–72         |
| IT. Soft Starters | 10–200 hp | 12–36         | _       | _             |

# **Feeder Units**

- Breaker: 15–600 Amps
- Fusible: 30–600 Amps

# Units supplied with

- UL label
- New stabs
- · New steel wrapper
- New door
- Mounting hardware

#### Options

- · Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- Note: In addition to size and spacing, many Advantage components have reached end-of-life status. Please contact Eaton MCC Aftermarket for replacement options.

1-800-0LD-UNIT (1-800-653-8648)



Westinghouse Series 2100/5 Star 1975–1994

#### **Replacement Starter Units**

#### Specifications

|                         | Breaker   |               | Fusible |               |
|-------------------------|-----------|---------------|---------|---------------|
| Units                   | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR                    | 1–5       | 12–36         | 1–5     | 12–60         |
| FVR                     | 1–5       | 18–54         | 1–5     | 18–72         |
| 2-Speed 1 Winding       | 1–5       | 18–42         | 1–4     | 18–54         |
| 2-Speed 2 Winding       | 1–5       | 18–54         | 1—4     | 18–54         |
| Autotransformer         | 2–5       | 36–72         | 2–4     | 36–72         |
| Part Winding            | 1–5       | 18–72         | 2–4     | 24–54         |
| Wye Delta Open          | 2–5       | 30–72         | 2–4     | 30–72         |
| Wye Delta Closed        | 2–5       | 30–72         | 2–4     | 30–72         |
| Non-Reversing<br>Vacuum | _         | _             | 4–5     | 36–72         |
| IT. Soft Starters       | 10–200 hp | 12-36         | _       | _             |

# **Feeder Units**

- Breaker: 15-600 Amps
- Fusible: 30–600 Amps

# Units supplied with

- UL label
- New stabs
- · New steel wrapper
- New door
- Mounting hardware

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call<sup>1</sup> and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)





## **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible |               |
|-------------------|-----------|---------------|---------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1—5       | 12–36         | 1—5     | 12–54         |
| FVR               | 1—5       | 18–60         | 1—4     | 18–42         |
| 2-Speed 1 Winding | 1—4       | 18–36         | _       | _             |
| 2-Speed 2 Winding | 1-4       | 18–36         | _       | _             |
| IT. Soft Starters | 10–200 hp | 18–36         | _       | _             |

# **Feeder Units**

- Breaker: 15–400 Amps
- Fusible: 30–400 Amps

# Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- Mounting hardware

- · Pushbuttons
- · Pilot lights
- · Selector switches
- · And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)



Westinghouse 11-300 1950–1965

## **Replacement Starter Units**

#### Specifications

|                   | Breaker   |               | Fusible |               |
|-------------------|-----------|---------------|---------|---------------|
| Units             | NEMA      | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1—5       | 9–37-1/3      | 1–5     | 14–56         |
| FVR               | 1–5       | 18-2/3-56     | _       | _             |
| 2-Speed 1 Winding | 1-4       | 28–37-1/3     | _       | _             |
| 2-Speed 2 Winding | 1–5       | 18-2/3-56     | _       | _             |
| IT. Soft Starters | 10–200 hp | 18-2/3-37     | _       | _             |

# **Feeder Units**

- Breaker: 15–400 Amps
- Fusible: 30–400 Amps

# Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- Mounting hardware

- · Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)

# Other manufacturer MCC designs



## **Replacement Starter Units**

#### Specifications

|                   | Breaker  |               | Fusible |               |
|-------------------|----------|---------------|---------|---------------|
| Units             | NEMA     | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1–5      | 12–48         | _       | _             |
| FVR               | 1-4      | Call          | _       | _             |
| IT. Soft Starters | 10–75 hp | 18–24         | _       |               |

## **Feeder Units**

- Breaker: 15–400 Amps
- Note: 400 Amp units and above are cable in/out. No stabs are provided.

#### Units supplied with

- UL label
- New stabs
- · New steel wrapper
- New door
- · Mounting hardware

Note: Midshelves are not supplied.

#### Options

- · Pushbuttons
- · Pilot lights
- · Selector switches

**ITE/Gould** 5600 Series 1957–1976

- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)





#### **Replacement Starter Units**

#### Specifications

|       | Breaker |               | Fusible |               |
|-------|---------|---------------|---------|---------------|
| Units | NEMA    | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR  | 1-4     | 12-24         | _       | _             |
| FVR   | 1-4     | 18–36         | _       |               |

# **Feeder Units**

Breaker: 15–225 Amps

# **Units supplied with**

- UL label
- New stabs
- · New steel wrapper
- New door
- · Mounting hardware

Note: Midshelves are not supplied.

## Options

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...

1-800-0LD-UNIT (1-800-653-8648)

Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.



Allen-Bradley Centerline Series K and later 1971–Present

## **Replacement Starter Units**

#### Specifications

|                   | Breaker  |               | Fusible |               |  |
|-------------------|----------|---------------|---------|---------------|--|
| Units             | NEMA     | Spacing (in.) | NEMA    | Spacing (in.) |  |
| FVNR              | 1-4      | 12–30         | 1-4     | 12–42         |  |
| FVR               | 1-4      | 18–48         | 1-4     | 24–48         |  |
| IT. Soft Starters | 10–75 hp | 12–18         |         |               |  |

# **Feeder Units**

- Breaker: 15–225 Amps
- Fusible: 30–200 Amps

# **Units supplied with**

- UL label
- New stabs
- New steel wrapper
- New door
- · Mounting hardware

Note: Midshelves are not supplied.

Units are compatible with Series K and later.

- · Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)



Siemens/ Furnas Series 89 1979-2001

#### **Replacement Starter Units**

#### Specifications

|                   | Breaker  |               | Fusible |               |
|-------------------|----------|---------------|---------|---------------|
| Units             | NEMA     | Spacing (in.) | NEMA    | Spacing (in.) |
| FVNR              | 1—4      | 12–24         | _       | _             |
| FVR               | 1—4      | 18–36         | _       | _             |
| IT. Soft Starters | 10—75 hp | 12–18         | _       | _             |

# **Feeder Units**

• Breaker: 15-225 Amps

# Units supplied with

- UL label
- · New stabs
- · New steel wrapper
- New door
- Mounting hardware

Note: Midshelves are not supplied.

#### **Options**

- Pushbuttons
- · Pilot lights
- · Selector switches
- · And more...

Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.

1-800-0LD-UNIT (1-800-653-8648)



Square D Model 4, Model 5 and Model 6 1970–Present

## **Replacement Starter Units**

#### Specifications

|                   | Breaker  |               | Fusible |               |  |
|-------------------|----------|---------------|---------|---------------|--|
| Units             | NEMA     | Spacing (in.) | NEMA    | Spacing (in.) |  |
| FVNR              | 1-4      | 12–30         | _       | _             |  |
| FVR               | 1–4      | 18–36         | _       | _             |  |
| IT. Soft Starters | 10–75 hp | 12–18         |         |               |  |

# **Feeder Units**

Breaker: 15–225 Amps

# **Units supplied with**

- UL label
- New stabs
- · New steel wrapper
- New door
- Mounting hardware

Note: Midshelves are not supplied.

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)



Moeller Series 90, 100, 170, 200, 3000 and Modan 3000 1967–Present

#### **Replacement Starter Units**

#### Specifications

|       | Breaker         |               | Fusible         |               |
|-------|-----------------|---------------|-----------------|---------------|
| Units | HP              | Spacing (in.) | HP              | Spacing (in.) |
| FVNR  | 1–100<br>@ 480V | 9–24          | 1-100<br>@ 480V | 9–24          |
| FVR   | 1–100<br>@ 480V | 12–36         | 1-100<br>@ 480V | 12–36         |

#### **Feeder Units**

- Breaker: 15-250 Amps
- Fusible: 30-200 Amps

# **Units supplied with**

- · New stabs
- New steel wrapper
- · New door
- Mounting hardware

Note: Midshelves are not supplied.

- Pushbuttons
- · Pilot lights
- · Selector switches
- And more...
- Note: Size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)





#### **Replacement Starter Units**

#### Specifications

|                   | Breaker |               | Fusible | usible        |  |
|-------------------|---------|---------------|---------|---------------|--|
| Units             | NEMA    | Spacing (in.) | NEMA    | Spacing (in.) |  |
| FVNR              | 1–5     | 12–42         | _       | _             |  |
| FVR               | 1—4     | 18–24         | _       | _             |  |
| IT. Soft Starters | _       | Call          |         | _             |  |

## **Feeder Units**

- Breaker: 15-400 Amps
- Note: 400 Amp units and above are cable in/out. No stabs are provided.

# Units supplied with

- UL label
- New stabs
- New steel wrapper
- New door
- Mounting hardware

Note: Midshelves are not supplied.

- · Pushbuttons
- · Pilot lights
- · Selector switches
- · And more...
- Note: NEMA size and spacing can vary depending on starter unit. Refer to the parts catalogs for each manufacturer or call and request a quote for more information.
- 1-800-0LD-UNIT (1-800-653-8648)

# **Support services**

# MCC Aftermarket selling tips

- Call your Service Center! You have a local plant that is ready to help you quote all MCC Aftermarket.
- Use Bid Manager. MCC Aftermarket is under Take Offs-Motor Control Centers.
- Know what Eaton can do to help you! We can get you nearly any aftermarket unit in one day!
- Eaton's Web site will help you too! Just go to www.eaton.com/MCCAftermarket.
- Be sure when quoting MCC Aftermarket Starters that you ask your customer if they need standard wiring in the unit or if there is a custom wiring diagram.
- Be sure to find out how much space is available in the MCC structure where the customer wants to install a new bucket. Your customer may need to purchase a blank cover to fill in empty space.

# Product & service locations MCC Aftermarket



Visit our Internet Web page at: http://www.Eaton.com/Electrical

# **MCC terminology**

# мсс

A Motor Control Center (MCC) is a series of structures fed from a main device that is filled with motor starters, soft starters, and breaker and fusible disconnect switches. They may also have metering, TVSS and communications.

# Bucket

A bucket is the assembly containing the motor starter or feeder breaker/fusible switch that gets plugged into the MCC vertical bus. The vertical power bus is then fed through the stab assembly to the breaker or fusible switch. That breaker/fusible switch is able to disconnect power to all components it feeds. The bucket generally contains the disconnect, a CPT (Control Power Transformer), motor starter, relays, and any cover controls used to control the motor starter.

# Unit

A unit is another term for bucket (see above).

# **Cover Controls**

Cover controls are the devices seen and operated on the cover and the outside of the bucket. The most common cover controls are selector switches, pushbuttons and pilot lights. When quoting a new bucket, it is very important to find out what cover controls the customer needs so the bucket is wired properly from the factory.

# X Space

MCC structures are measured in X space. Each X equals 6" of height. An example of how this is used is a Size 1 motor starter is generally built in a 2X bucket, or 12". Where this becomes key is in determining how much space the customer has available to add new loads.

# Stab Assembly

The stab assembly is on the rear of the bucket and is what plugs the bucket onto the vertical bus. This must mate cleanly with the vertical bus to provide complete power to the bucket and to not arc.

# Cover

The cover is literally the cover over the bucket or a blank cover over empty space. Many times when customers are buying new buckets, they will need additional covers to fill blank space. ★ At Eaton, we believe that power is a fundamental part of just about everything people do. Technology, transportation, energy and infrastructure—these are things the world relies on every day. That's why Eaton is dedicated to helping our customers find new ways to manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. To improve people's lives, the communities where we live and work, and the planet our future generations depend upon. Because that's what really matters. And we're here to make sure it works.

# See more at Eaton.com/whatmatters

Eaton

Electrical Sector 1111 Superior Ave. Cleveland, OH 44114 United States 877-ETN-CARE (877-386-2273) Eaton.com

© 2018 Eaton Corporation All Rights Reserved Printed in USA Publication No. CA04304001E / Z22074 December 2018 Eaton is a registered trademark of Eaton.

All other trademarks are property of their respective owners.

