

Compact MCC offering



Big space savings
in a compact design

Product description

Eaton Corporation now has in its arsenal of products another weapon to maximize the space per horsepower ratio of the motor control center (MCC). New for the Freedom 2100 MCC (from 1996 to the present vintage) is a compact AC or DC control offering allowing a traditional MCC to be shrunk by 50%. To accomplish this drastic size reduction, Eaton has standardized on a cool running solid-state overload (SSOL) for all starter combinations and a new line of compact feeder options that include the J-Frame breaker. With this design, there is no need for any special structural modifications—simply remove the old unit and add two of the new units in its place. All starter units use the industry-tested HMCPE combination circuit breaker and can be provided with either a control power transformer (CPT), a separate source or 24 Vdc control.

Features and benefits

- Complete UL® 845 listed assemblies
- Fully capable of replacing one unit with two compact units in new or existing applications
- Ethernet ready without sacrificing any space
- Fully featured SSOL with wide turndown and integral ground fault option

- The SSOL is self-powered, making it a perfect choice for separate source applications
- The SSOL has one of the widest ranges of selectable trip class from 5 to 30
- The SSOL has advanced trip features, which include thermal OL, phase loss and phase imbalance
- The control source can be separate, 24 Vdc or can use an integrated CPT
- Local operator control provided through buttons and lights mounted directly on the cover if needed
- Field control wiring easily accessible via the front mount 12-point pull-apart terminal block on the 1X units and up to 14 points on the 2X units
- The cool running SSOL allows for up to 12 compact starter units per vertical section
- Compact feeder offerings using the EG (125A) and JG (250A) in a 1X unit spacing
- Compact units can be installed within Eaton's unique back-to-back structure configuration, creating the smallest footprint offering available in the market
- Compact offering is compatible with Eaton's i2100 user interface package



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Ratings and standards

- Agency ratings include:
 - NEMA® ICS 18
 - UL 845
 - CSA® C22.2 No. 14
 - NMX J353
- Meets the standard operating temperature range (0°C–40°C) of the Freedom 2100 MCC
- Meets all seismic CBC and IBC requirements
- Compatible with 3200A horizontal bus and 1200A vertical bus structures
- Used with or without labyrinth barriers for insulated and isolated vertical bus
- 600 Vac rated, three-phase, three-wire or four-wire
- NEMA 1, 1A, 2, 3R or 12 enclosure
- Compact back-to-back configuration
 - 21 inches deep
 - 72 inches on the front, 66 inches on the rear
 - 23 usable spaces per section

Availability

Available for the standard 65 kA and also 100 kA braced MCC.

The compact design is available from all service centers and also from the main plant for both new applications and aftermarket. The phone number 1-800-OLD-UNIT (1-800-653-8648) will direct you to your local service center.

Service center locations (www.eaton.com):

- Atlanta, GA
- Chicago, IL
- Denver, CO
- Hartford, CT
- Houston, TX
- Los Angeles, CA
- Portland, OR

Options

Operator control options

- Pilot light (OL trip, run, other)
- Selector switch (local remote, HOA, MOA)
- Pushbuttons (start, stop, run, emergency, test, jog)

Contactor options

- Freedom contactor fed with integral CPT or from separate source
- NEMA **XT** contactor fed from redundant fail safe DC power supplies within the MCC

Overload options

- C440 SSOL without ground fault
- C440 SSOL with ground fault

Communications options

- Control and monitoring
- Modbus® TCP
- EtherNet/IP
- One bucket = one node
- Web page configuration
- i2100 ready

Application examples

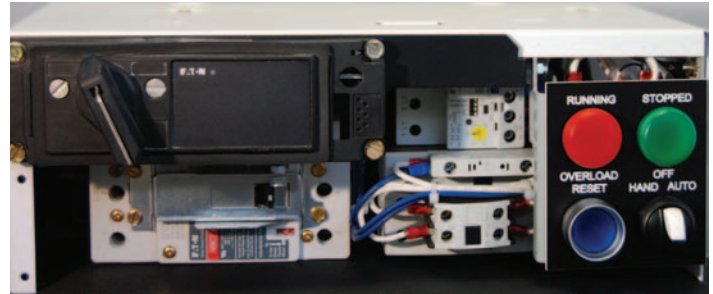
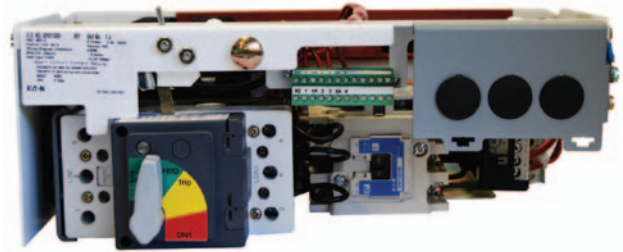
The industry average for NEMA 1 and NEMA 2 loads is 80%. This makes the new NEMA Compact Unit a perfect fit for any application where space is at a premium.

Aftermarket/renovation

During a plant upgrade, it is decided that more motor loads are needed for a particular process, and there isn't space or capital to add more structures. By removing the existing NEMA starters and replacing them with the new compact design, 2X of space is freed up for every two starters replaced.

New construction

A particular control house has limited space for traditional-sized buckets. This new compact size allows for doubling up the number of NEMA starters in the same space as a conventional bucket.



Compact starter unit overload sizing chart—maximum horsepower ①

NEMA	Overload Range (A)	208V	230V	380V	460V	Space Required
1	0.33–1.65	—	—	0.5	0.75	1X
1	1–5	1	1	2	3	1X
1	4–20	5	5	10	10	1X
1	9–45	7.5	7.5	10	10	1X
2	9–45	10	15	25	25	1X
3	20–100	25	30	50	50	2X
4	28–140	40	50	75	100	2X

① All compact starter units use a motor circuit protector, which has an interrupting rating of 100 kAIC and 65 kAIC at 460 Vac. Feeders have an interrupting rating of only 65 kAIC.

Compact feeder units

Circuit Breaker	Available Range (A)	Space Required
EG	15–125	1X
JG	50–250	1X

Compact feeder unit interrupting ratings

Circuit Breaker	208V	230V	380V	460V
EG	65 kAIC	65 kAIC	65 kAIC	65 kAIC
JG	65 kAIC	65 kAIC	65 kAIC	65 kAIC

Compact offering

	Freedom		XT	
	Freedom	Communicating	XT	Communicating
Compact	■	■	■	■
120V control	■	■		
24V control			■	■
Modbus TCP		■		■
EtherNet/IP		■		■

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Printed in USA
Publication No. PA04302004E / Z12499
October 2012

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