

# Series C F-Frame molded-case circuit breaker electronic trip unit



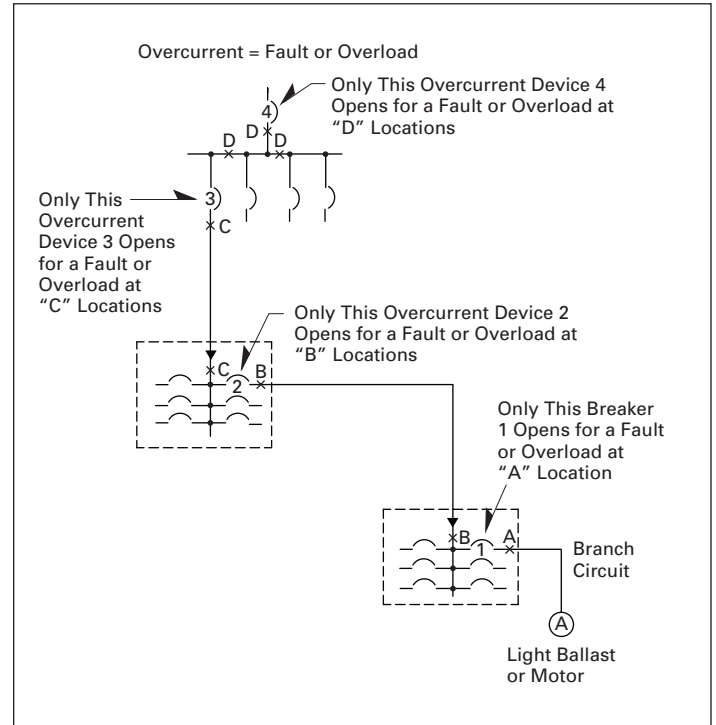
Introducing the 225A F-Frame 310+ breaker, the smallest NEMA®, UL® and CSA® listed molded-case circuit breaker with electronic trip unit.

## Design savings

- Uses accessories available on current F-Frame breaker
- Available for aftermarket replacement of any F-Frame when electronic trip units are preferred. May need to relist panel with UL
- Same physical dimensions and terminal locations as standard F-Frame breaker
- Reduction in total installed cost and size from current Series C® family offering of electronic trip unit
- Three trip units cover ampere range from 15A to 225A. Reduces in-house stock and offers more flexibility

## Easy-to-use trip unit

No DIP switches or rating plugs, just simple-to-use dials adjust the 310+ solid-state trip unit settings, including ground fault. Optional neutral current sensor for ground fault is ordered separately.



Example of zone selective interlocking

## A full range of world-class accessories

- In addition to using the same internal accessories as the standard F-Frame, the 310+ offers various handle locks, plug-in adapters and handle mechanisms
- For internal accessories, left-hand side can accept any available accessory; right-hand side can accept only a special 1A/1B auxiliary contact. Internal accessories must be factory installed
- Uses test kit and Ammeter™ display common to all Series G® 310+ trip units
- Optional zone selective interlock provides system coordination by allowing the breaker closest to the fault to trip without any preset time delays

## Zone selective interlocking accessories

Zone interlocking uses a communication scheme to connect line and load breaker trip units together. When a fault occurs, the trip units communicate to determine which load side breaker is closest to the fault. The trip unit in the breaker closest to the fault overrides any customer-defined delay and opens instantaneously, clearing the fault and allowing line-side breakers to remain closed.

## Available Features

Feature	Availability
UL 489 and CSA C22.2 No. 5	Y
Shunt-trip	Y ①
Auxiliary switch	Y ①
Bell alarm	Y ①
Combination alarm/auxiliary switch	Y ①
Undervoltage release	Y ①
Handle mechanism—Flex Shaft™	Y
Handle mechanism—through-the-door rotary	Y
Handle mechanism—direct mounted	Y
Plug-in blocks, trip-on drawout	Y
Rear-connecting studs	Y
Drawout cassettes	Y
Lock-offs	Y
Interlocks	Y
Finger-safe shields and interphase barriers	Y
Bus extension and spreaders	Y
Multiple conductor terminals	Y
DigiView ammeter	Y
Electrical operator	Y

① Internal accessories are listed with Underwriters Laboratories (UL) for factory installation. They are not listed with UL for field installation. Any one internal accessory may be mounted in the left pole. Only a specially built 1A/1B auxiliary switch may be mounted in the right pole. The part number for the 1A/1B auxiliary switch is A1X1RPKFDE.

## FDE, HFDE and FDCE Rating and Ampere Range

Specification	Description			
	Breaker Type	FDE	HFDE	FDCE
<b>Short-circuit current ratings (kA rms) AC 50–60 Hz</b>				
NEMA UL 489	240 Vac	65	100	200
	480 Vac	35	65	100
	600 Vac	18	25	25
Number of poles	3	3	3	3
Adjustable Long-time pickup CSA 22.2 No. 5	225A	A = 100, B = 110, C = 125, D = 150, E = 160, F = 175, G = 200, H = 225		
	160A	A = 60, B = 70, C = 80, D = 90, E = 100, F = 125, G = 150, H = 160		
	80A	A = 15, B = 20, C = 30, D = 40, E = 50, F = 60, G = 70, H = 80		
Electronic rms	LS, LSI, LSG, LSIG			
Dimensions in inches (mm)	H	W	D	
	Three-pole	6.00 (152.4)	4.13 (104.9)	3.38 (85.9)
Weight (approximate) lbs (kg)	4.5 (2.0)	4.5 (2.0)	4.5 (2.0)	

## Current Sensor for Ground Fault

Catalog Number	Breaker Ampere Range
CTF080	15–80
CTF160	60–160
CTF225	100–225

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

© 2010 Eaton Corporation  
All Rights Reserved  
Printed in USA  
Publication No. PA0120006E / Z10350  
December 2010

**EATON**  
Powering Business Worldwide



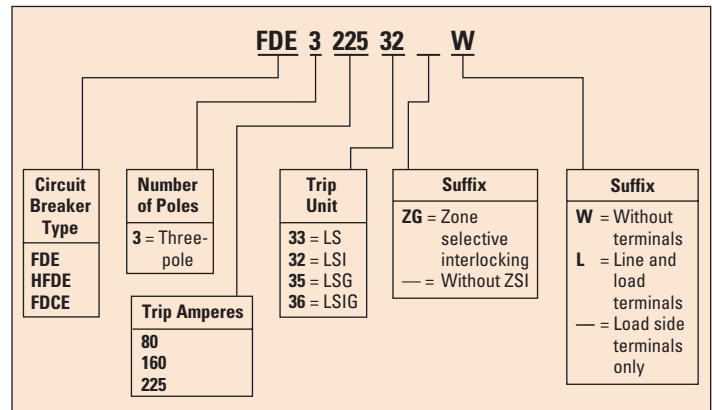
Optional DigiView Ammeter/  
Cause of Trip Display module



310+ trip unit

## F 310+ trip unit features

- No rating plug required
- Adjustable short-time delay: 2–10, 12 x (I<sub>n</sub>)
- Status indicator and no trip test indicator LEDs
- Factory-installed only; non-interchangeable
- Push-to-trip
- Available with LS, LSI, LSG or LSIG
- Optional self-powered plug-in test kit
- Three trip units with wide ampere ranges: 15–80A, 60–160A and 100–225A
- Optional DigiView Ammeter display
- Ground fault adjustment: 0.2–1
- Adjustable long-time delay 2–24 seconds
- Optional zone selective interlock (LSI, LSIG electronic trip units)
- Time current curve TC01200002E
- Adjustable long-time pickup setting has sealable cover to comply with UL and CSA
- Thermal memory



## F 310+ ordering guidelines

## Reference

Document	Publication Number
Technical data	TD01203013E
FAQ	MZ01203001E



PowerChain Management is a registered trademark of Eaton Corporation.

All other trademarks are property of their respective owners.