

# Arcflash Reduction Maintenance System available on MDL-Frame 310+ electronic trip unit



Introducing the 800 A Series C<sup>®</sup> MDL-Frame equipped with the MES 310+ electronic trip unit, featuring Arcflash Reduction Maintenance System<sup>™</sup>, zone selective interlocking and ground fault alarm (no trip). The MDL breaker meets NEMA<sup>®</sup>, UL<sup>®</sup>, CSA<sup>®</sup>, and IEC standards.

## Benefits of the MDL-Frame 310+ breaker

- No rating plugs needed. The 310+ has adjustable trip settings integral to the electronic trip unit
- Arcflash Reduction Maintenance System, also known as Maintenance Mode, is an available feature that increases worker safety by providing an accelerated instantaneous trip to reduce arc flash potential
- Ground fault alarm, no trip, is an option. In addition to offering ground fault protection and high load alarms, the 310+ allows for ground fault alarm, no trip. This is essential for critical applications that must stay online when a ground fault is present
- Zone selective interlocking (ZSI) is available. This feature enables the breaker to communicate with the immediate upstream and downstream ZSI-enabled breakers to clear faults in the shortest amount of time using the breaker closest to the fault
- Available for aftermarket replacement of MDL-Frame 310 trip units when zone selective interlocking, cause of trip, ground fault alarm only or Arcflash Reduction Maintenance System is needed
- Available fully configured from the factory or as separate frames and trip units for inventory flexibility

## A full range of world-class accessories

- No changes from current offering
- Internal and external accessories
- The MES 310+ built-in test port allows compatibility with Eaton's ammeter/cause of trip display, panelmount ammeter/cause of trip display, and cause of trip LED module

## Zone selective interlocking

Zone selective interlocking uses a basic 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. ZSI is available on LSI and LSI<sup>g</sup> trip units, and is active for phase and ground faults.

## Arcflash Reduction Maintenance System

This system, also known as Maintenance Mode, uses a separate analog trip circuit that provides faster interruption times than the standard digital instantaneous protection. Work locations downstream of a circuit breaker with an Arcflash Reduction Maintenance System unit will have a significantly lower incident energy level. In MDL breakers, the feature is enabled remotely via a switch and 24 Vdc power, and it is fixed at 2.5 times the frame rating.



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## Breaker optional features

- Electrical motor operators
- Shunt trip
- Auxiliary switch
- Undervoltage release
- Handle mechanism
- Plug-in adapters
- Handle blocks and key interlocks

## Trip unit features

- No external rating plug required
- Available with LS, LSI, LSG, LSIG and Arcflash Reduction Maintenance System via ALSI, ALSIG
- Zone selective interlocking
- Time current curves referenced in document TD012036EN
- Adjustable long-time delay
- Adjustable short-time delay (flat response for LSI and LSIG; I<sup>2</sup>t for LS and LSG)
- Status indicator and no trip test indicator LEDs
- Push-to-trip button
- Functional test kit available
- Wire seal available to protect settings from tampering

## Technical specifications

### Additional Accessories for 310+ Trip Units

Description	Catalog Number
Digiview ammeter with cause of trip indication	<b>DIGIVIEW</b>
Panelmount Digiview with 6-foot wire harness	<b>DIGIVIEWR06</b>
LED cause of trip indication	<b>TRIP-LED</b>
Wire seal for 310+ trip unit	<b>5108A03H01</b>
Functional test kit	<b>MTST230V</b>

### MDL and HMDL with 310+ Rating and Ampere Range

Specification	Breaker/Frame Type	
	MDL/CMDL	HMDL/CHMDL
Short-circuit current ratings (kA rms) 50–60 Hz	50	65
NEMA UL 489	480 Vac	480 Vac
Number of poles	3	3
I <sub>r</sub> = continuous current or long delay pickup	A = 320, B = 400, C = 450, D = 500 E = 600, F = 630, G = 700, H = 800	
Electronic rms	LS, LSI, LSG, LSIG, ALSI, ALSIG	
Dimensions in inches (mm) H x W x D	8.25 x 16.00 x 4.06 (209.6 x 406.4 x 103.1)	
Approximate weight in lbs (kg)	30.0 (13.6)	30.0 (13.6)

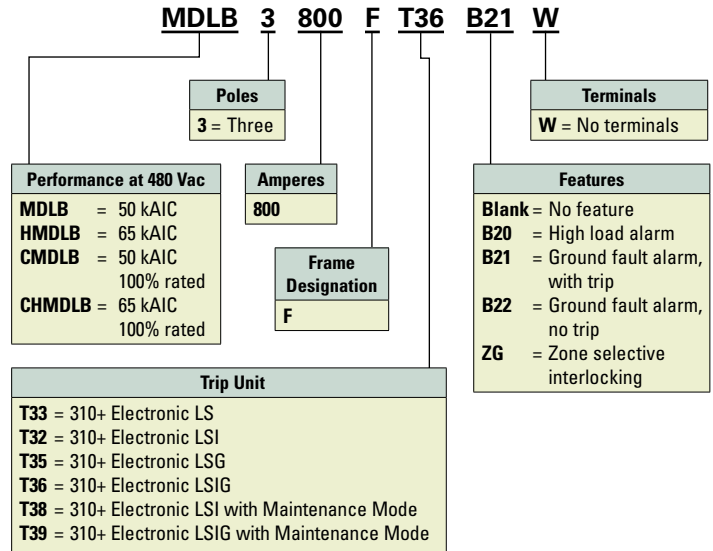
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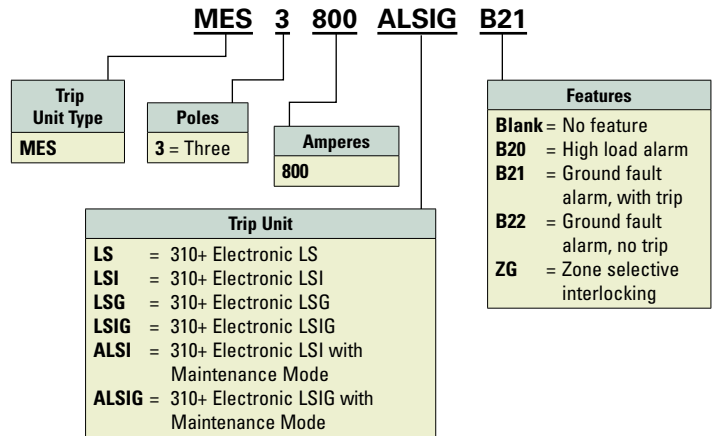
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## Catalog numbering systems

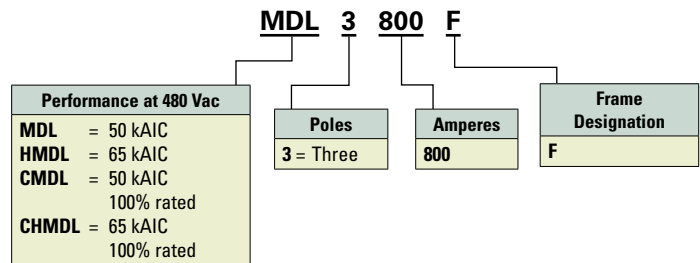
### MDL Breaker Assembly



### MDL Electronic Trip Unit



### MDL Frame Only



### Configuration notes:

- Maintenance Mode and ZSI are only available with LSI and LSIG trip units
- B21 and B22 features available only with LSG, LSIG and ALSIG trip units
- B2x suffixes cannot be combined with other B2x suffixes

For more information,  
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