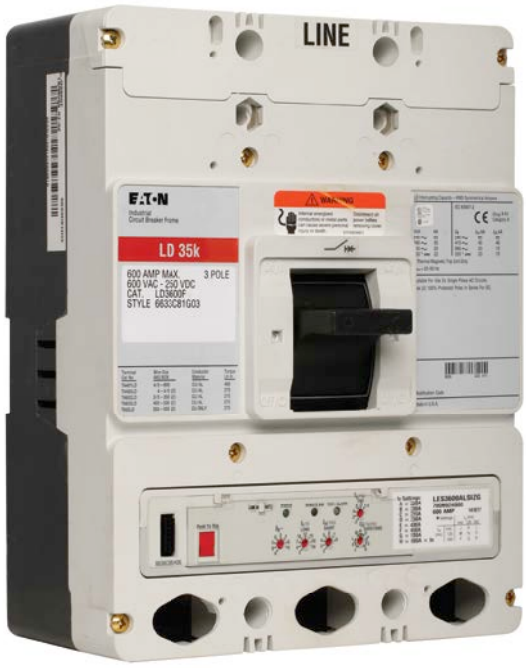
Arcflash Reduction Maintenance System available on LD-Frame 310+ electronic trip unit



Introducing the 600 A Series C® LD-Frame equipped with the LES 310+ electronic trip unit, featuring Arcflash Reduction Maintenance System™, zone selective interlocking and ground fault alarm (no trip). The LD breaker meets NEMA®, UL®, CSA®, and IEC standards.

Benefits of the LD-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 LD-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 LES 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 LSIG 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 LD 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 operator
- 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 TD012035EN
- Adjustable long-time delay
- Adjustable short-time delay (flat response for LSI and LSIG; I^2t 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	**DIGIVIEW**
Panelmount Digiview with 6-foot wire harness	**DIGIVIEWR06**
LED cause of trip indication	**TRIP-LED**
Wire seal for 310+ trip unit	**5108A03H01**
Functional test kit	**MTST230V**

LD, HLD and LDC with 310+ Rating and Ampere Range

	Breaker/Frame Type		
Specification	**LD/CLD**	**HLD/CHLD**	**LDC/CLDC**
Short-circuit current ratings (kA rms) 50–60 Hz	35	65	100
NEMA UL 489	480 Vac	480 Vac	480 Vac
Number of poles	3, 4	3, 4	3, 4
I_r = continuous current or long delay pickup	A = 250, B = 300, C = 315, D = 350 E = 400, F = 450, G = 500, H = 600		
Electronic rms	LS, LSI, LSG, LSIG, ALSI, ALSIG		
Dimensions in inches (mm) H x W x D	8.25 x 10.75 x 4.06 (209.6 x 273.1 x 103.1)		
Approximate weight in lbs (kg)	20.0 (9.1)	20.0 (9.1)	20.0 (9.1)

Catalog numbering systems

LD Breaker Assembly

LDB 3 600 F T36 B22ZG W

Poles
3 = Three
4 = Four

Terminals
W = No terminals

Performance at 480 Vac
LDB = 35 kAIC
HLDB = 65 kAIC
LDCB = 100 kAIC
CLDB = 35 kAIC 100% rated
CHLDB = 65 kAIC 100% rated
CLDCB = 100 kAIC 100% rated

Amperes
600

Frame Designation
F

Features
Blank = No feature
B20 = High load alarm
B21 = Ground fault alarm, with trip
B22 = Ground fault alarm, no trip
ZG = Zone selective interlocking

Trip Unit
T33 = 310+ Electronic LS
T32 = 310+ Electronic LSI
T35 = 310+ Electronic LSG
T36 = 310+ Electronic LSIG
T38 = 310+ Electronic LSI with Maintenance Mode
T39 = 310+ Electronic LSIG with Maintenance Mode

LD Electronic Trip Unit

LES 3 600 LSIG B22ZG

Trip Unit Type
LES

Poles
3 = Three
4 = Four

Amperes
600

Features
Blank = No feature
B20 = High load alarm
B21 = Ground fault alarm, with trip
B22 = Ground fault alarm, no trip
ZG = Zone selective interlocking

Trip Unit
LS = 310+ Electronic LS
LSI = 310+ Electronic LSI
LSG = 310+ Electronic LSG
LSIG = 310+ Electronic LSIG
ALSI = 310+ Electronic LSI with Maintenance Mode
ALSIG = 310+ Electronic LSIG with Maintenance Mode

LD Frame Only

LD 3 600 F

Performance at 480 Vac ❶
LD = 35 kAIC
HLD = 65 kAIC
LDC = 100 kAIC
CLD = 35 kAIC 100% rated
CHLD = 65 kAIC 100% rated
CLDC = 100 kAIC 100% rated

Poles
3 = Three
4 = Four

Amperes
600

Frame Designation
F

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
- LSG, LSIG and ALSIG trip units are not available in four-pole breakers with neutral protection
- Four-pole trip units include fully protected neutral pole; contact Eaton for other four-pole requirements

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