

**Cross Reference to Rockwell
Part Number PN-133176**

Typical L-Frame Circuit Breaker

**L-Frame (125–600 Amperes)****Product Description**

- All Eaton L-Frame circuit breakers are HACR rated
- L-Frame circuit breakers are available as individual components (frame, trip unit, terminals), or factory assembled complete breakers
- L-Frame circuit breakers with non-interchangeable trip units are suitable for reverse feed use

Standards and Certifications

- CE marked



Types LDB, HLDB and LDCB Electronic Circuit Breakers with Non-Interchangeable Electronic Trip Units Suitable for Reverse Feed

Maximum Continuous Ampere Rating at 40°C	Short Time Range	Short Time Delay	Ground Fault Pickup	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit Less Terminals and Rating Plug—Catalog Number				Digitrip RMS 310 Rating Plug (Order as Separate Items)	
					LS	LSI	LSG	LSIG	Fixed	Adjustable
					L – Adjustable Long Delay Pickup (By Adjustable Rating Plug)	S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I ² t Response) or Adjustable Short Time (Flat Response)	I – Adjustable Instantaneous Pickup by Setting Short Time Delay Time to Instantaneous	G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)		
					2–8 x I _n	2–8 x I _n	2–8 x I _n	2–8 x I _n		
					—	1–300 ms	—	0–300 ms		
					—	—	Varies by frame	Varies by frame		
					—	—	0–500 ms	0–500 ms	Fixed	Adjustable
									Catalog Number	
Type LDB, HLDB and LDCB with Digitrip 310 Non-Interchangeable Trip Unit										
600	3	LDB3600FT33W	LDB3600FT32W	LDB3600FT35W	LDB3600FT36W	6LES300T	300/400/500/600	6LES350T	A6LES600T1	
						6LES400T	420/440/460/480	6LES450T	A6LES400T5	
						6LES500T	520/540/560/580	6LES600T	A6LES500T5	
600	3	HLDB3600FT33W	HLDB3600FT32W	HLDB3600FT35W	HLDB3600FT36W	6LES300T	300/400/500/600	6LES350T	A6LES600T1	
						6LES400T	420/440/460/480	6LES450T	A6LES400T5	
						6LES500T	520/540/560/580	6LES600T	A6LES500T5	
600	3	LDCB3600FT33W	LDCB3600FT32W	LDCB3600FT35W	LDCB3600FT36W	6LES300T	300/400/500/600	6LES350T	A6LES600T1	
						6LES400T	420/440/460/480	6LES450T	A6LES400T5	
						6LES500T	520/540/560/580	6LES600T	A6LES500T5	



Technical Data and Specifications

UL 489 Interrupting Capacity Ratings ^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA rms Symmetrical Amperes)				Volts DC	
		Volts AC (50/60 Hz)				125	250 ^{②③}
		240	277	480	600		
LDB	2, 3	65	—	35	25	—	22
LD	2, 3, 4	65	—	35	25	—	22
CLD ^④	2, 3, 4	65	—	35	25	—	—
HLD, HLDB	2, 3, 4	100	—	65	35	—	25
CHLD ^④	2, 3, 4	100	—	65	35	—	—
LDC, LDCB ^⑤	2, 3, 4	200	—	100	50	—	30
CLDC ^{④⑤}	2, 3, 4	200	—	100	50	—	—

IEC 947-2 Interrupting Capacity Ratings ^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA Symmetrical Amperes)				Volts DC			
		Volts AC (50/60 Hz)				250 ^{②③}			
		240	415	690		I_{cu}	I_{cs}	I_{cu}	I_{cs}
LDB	2, 3	85	85	45	45	20	10	20	10
LD	2, 3, 4	85	85	45	45	20	10	20	10
CLD ^④	2, 3, 4	85	85	45	45	20	10	—	—
HLD, HLDB	2, 3, 4	100	100	70	70	25	13	20	10
CHLD ^④	2, 3, 4	100	100	70	70	25	13	—	—
LDC, LDCB	2, 3, 4	200	100	100	75	35	18	20	10
CLDC ^④	2, 3, 4	200	100	100	75	35	18	—	—

Notes

- ① Utilization Category A circuit breakers.
- ② L/R = 8 milliseconds minimum.
- ③ Two-pole circuit breaker or two poles of three-pole circuit breaker. Incorporating thermal-magnetic trip unit only.
- ④ 100% rated breakers.
- ⑤ Current limiting.

Specifications



Trip Unit Type	Digitrip RMS 310	Digitrip OPTIM 550	Digitrip OPTIM 1050
rms sensing	Yes	Yes	Yes
Breaker Type			
Frame	L	L	L
Ampere range	300–600A	300–600A	200–600A
Interrupting rating at 480 volts	35, 65, 100 (kA)	35, 65, 100 (kA)	35, 65, 100 (kA)
Protection			
Ordering options	LS, LSG	LSI, LSIG	LSI, LSI(A), LSIG
Fixed rated plug (I_n)	Yes	Yes	Yes
Overtemperature trip	Yes	Yes	Yes
Long Delay Protection (L)			
Adjustable rating plug (I_n)	Yes	Yes	No
Long delay pickup	0.5–1.0 (I_n) ^①	0.5–1.0 (I_n) ^①	0.4–1.0 (I_n)
Long delay time I^2t	12 seconds	12 seconds	2–24 seconds
Long delay time I^4t	No	No	1–5 seconds
Long delay thermal memory	Yes	Yes	Yes
High load alarm	No	No	0.5–1.0 $x I_r$
Short Delay Protection (S)			
Short delay pickup	200–800% $x (I_n)$	200–800% $x (I_n)$	150–800% $x (I_r)$
Short delay time I^2t	100 ms	No	100–500 ms
Short delay time flat	No	Inst–300 ms	100–500 ms
Short delay time zone selective interlocking	No	No	Yes ^④
Instantaneous Protection (I)			
Instantaneous pickup	No	200–800% $x (I_n)$	200–800% $x (I_n)$
Discriminator	No	No	Yes
Instantaneous override	Yes	Yes	Yes
Ground Fault Protection (G)			
Ground fault alarm	No	No	20–100% $x (I_s)$
Ground fault pickup	1–5 $x I_g$ (120A)	1–5 $x I_g$ (120A)	20–100% $x (I_s)$
Ground fault delay I^2t	No	No	100–500 ms
Ground fault delay flat	Inst–500 ms	Inst–500 ms	100–500 ms
Ground fault zone selective interlocking	No	No	Yes ^④
Ground fault thermal memory	Yes	Yes	Yes
System Diagnostics			
Status LEDs	Yes	Yes	Yes
Cause of trip LEDs	No	No	Yes
Magnitude of trip information	No	No	Yes
Remote signal contact—ground alarm	Yes ^⑤	Yes ^⑤	Yes ^④
Local auxiliary and bell alarm contact	Optional	Optional	Included


Legend

BIM = Breaker Interface Module
 (A) = GF Alarm
 I_s = Sensor Rating
 I_n = Rating Plug
 I_r = Long Delay Pickup Setting

Notes

- ① Adjust by rating plug.
- ② By OPTIMizer/BIM.
- ③ Eaton's PowerNet kit.
- ④ Zone interlock kit.
- ⑤ With separate ground fault alarm unit (GFAU).

Specifications, continued

Trip Unit Type	Digitrip RMS 310		Digitrip OPTIM 550	Digitrip OPTIM 1050
System Monitoring				
Digital display	No	No	Yes ^①	Yes ^①
Current	No	No	Yes	Yes
Power and energy	No	No	No	Yes
Power quality—harmonics	No	No	No	Yes
Power factor	No	No	No	Yes
Communications				
PowerNet	No	No	Yes ^②	Yes
Testing				
Testing method	Test set	Test set	OPTIMizer, BIM, PowerNet	OPTIMizer, BIM, PowerNet

Legend

BIM = Breaker Interface Module
 (A) = GF Alarm
 I_s = Sensor Rating
 I_n = Rating Plug
 I_r = Long Delay Pickup Setting

Notes

- ^① By OPTIMizer/BIM.
^② Eaton's PowerNet kit.

2.3

Molded Case Circuit Breakers

Series C

Dimensions and Weights

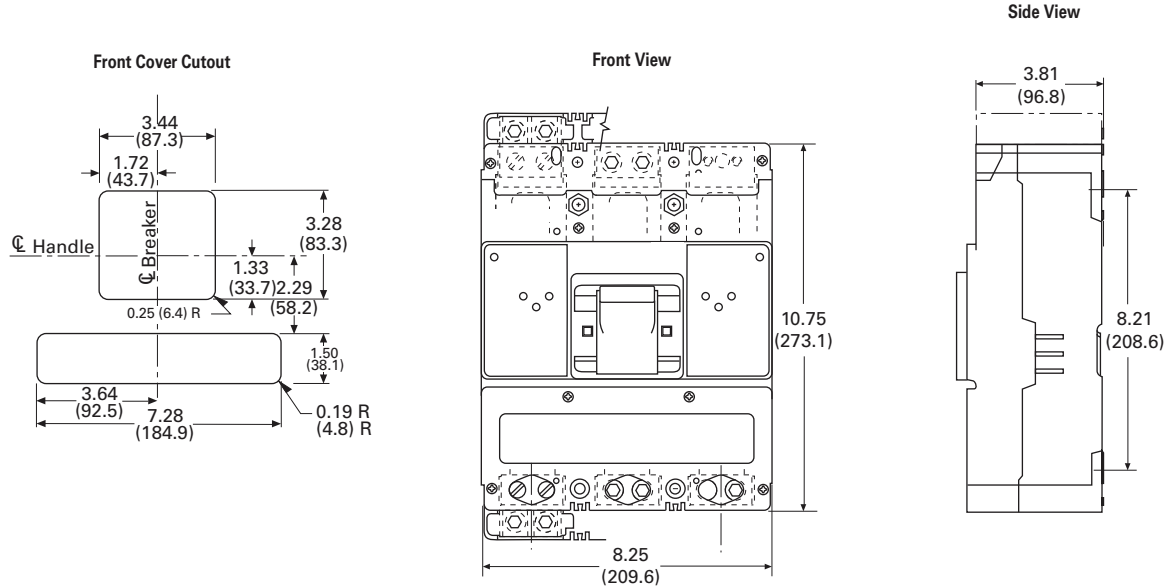
Dimensions in Inches (mm)

2

LD Frame

Number of Poles	Width	Height	Depth
2, 3	8.25 (209.6)	10.75 (273.1)	4.06 (103.1)
4	11.00 (279.4)	10.75 (273.1)	4.06 (103.1)

LD-Frame, Two- and Three-Pole



Approximate Shipping Weight, Lbs (kg)

LD Frame

Breaker Type	Complete Breaker			Frame Only			Trip Unit		
	Two-Pole	Three-Pole	Four-Pole	Two-Pole	Three-Pole	Four-Pole	Two-Pole	Three-Pole	Four-Pole
LD, HLD, LDC	18 (8.2)	20 (9.1)	25 (11.3)	14 (6.4)	15 (6.8)	20 (9.1)	3 (1.4)	4 (1.8)	5 (2.3)
LDB	18 (8.2)	20 (9.1)	25 (11.3)	—	—	—	—	—	—