Certified Test Reports

Eaton breakers can be ordered with certified test reports at the time of order entry. Test report documents the thermal and magnetic or electronic tripping characteristics of the individual breaker. Breaker and test report must be ordered together. Add suffix 12 to breaker catalog number and enter separate line item on order for certified test report.

Standards and Certifications

Molded case circuit breakers are designed to conform with the following standards:

- Underwriters Laboratories Inc., Standard UL 489, molded case circuit breakers and circuit breaker enclosures
- National Electrical Manufacturers Association (NEMA) Standards Publication No. AB1-1993, molded case circuit breakers
- Australian Standard AS 2184, molded case circuit breakers
- British Standards Institution Standard BS 4752: Part 1, switchgear and control gear Part 1: circuit breakers
- Canadian Standards Association (CSA) Standard C22.2 No. 5, service entrance and branch circuit breakers
- International Electrotechnical Commission Recommendations IEC 60947-2, circuit breakers
- Japanese T-Mark Standard molded case circuit breakers
- South African Bureau of Standards, Standard SABS 156, Standard Specification for molded case circuit breakers
- Swiss Electro-Technical Association Standard SEV 157-1, safety regulations for circuit breakers
- Union Technique de l'Electricite Standard NF C 63-120, low voltage switchgear and control gear circuit breaker requirements
- Verband Deutscher Elektrotechniker (Association of German Electrical Engineers) Standard VDE 0660, low voltage switchgear and control gear, circuit breakers

Conformance with these standards satisfies most local and international codes, assuming user acceptability and simplified application.

Molded case circuit breakers equal or exceed Federal Specification Classification W-C-375b requirements for the particular class associated with the circuit breaker frame being considered.

Open breakers do not have service entrance ratings. Service entrance rating is part of the enclosure.

Listed

Typical M-Frame Circuit Breaker

Contents

M-Frame (300–800 Amperes)

Product Description

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

Standards and Certifications

- CE marked

CE

Catalog Number Selection

This information is presented only as an aid to understanding catalog numbers.
It is not to be used to build catalog numbers for circuit breakers or trip units.

2

MDL Frame with Thermal-Magnetic Trip Unit Technology

Thermal-Magnetic Breakers and Frame ①

MDL 3 800 F

Circuit Breaker/ Frame Type	Number of Poles	Circuit Breaker/ Frame Ampere Rating		Suffix
MDL, MDLB HMDL, HMDLB	**2** = Two-pole **3** = Three-pole	**300** ① **350** ① **400** **450**	**500** **600** **700** **800**	**F** = Frame only (800 A only) **K** = High magnetic molded case switch **V** = 50 °C (thermal-magnetic trip units only) **W** = Without terminals **X** = Load side terminals only **Y** = Line side terminals only

Thermal-Magnetic Trip Unit ①

MT 3 800 T

Trip Unit Type	Number of Poles	Trip Unit Rating/ Plug Ampere Rating		Suffix
MT	**2** = Two-pole **3** = Three-pole	**300** ① **350** ① **400** **450**	**500** **600** **700** **800**	**T** = Thermal-magnetic **V** = 50 °C (thermal-magnetic trip units only)

MDL Frame with 310+ Electronic Trip Unit Technology

310+ Circuit Breaker

MDLB 3 800 F T36 B21 W

Performance at 480 Vac	Number of Poles	Amperes	Designation	Trip Unit	Features	Terminals
MDLB = 50 kAIC **HMDLB** = 65 kAIC **CMDLB** = 50 kAIC, 100% rated **CHMDLB** = 65 kAIC, 100% rated	**3** = Three-pole	**800**	**F**	**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	**Blank** = No feature **B20** = High load alarm **B21** = Ground fault alarm, with trip **B22** = Ground fault alarm, no trip **ZG** = Zone selective interlocking	**W** = No terminals

310+ Electronic Trip Unit ①

MES 3 800 ALSIG B21

Trip Unit Type	Number of Poles	Amperes	Trip Unit	Features
MES	**3** = Three-pole	**800**	**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	**Blank** = No feature **B20** = High load alarm **B21** = Ground fault alarm, with trip **B22** = Ground fault alarm, no trip **ZG** = Zone selective interlocking

Note

① Frames are the same for thermal-magnetic or 310+ electronic trip units, e.g., **MDL3800F**, **HMDL3800F**, etc.

Product Selection

Types MDL and HMDL Thermal-Magnetic Circuit Breakers with Interchangeable Trip Units—Two-Pole

Maximum Continuous Ampere Rating at 40 °C	Standard Interrupting Capacity 600 Vac Rated 50 kAIC at 480 Vac		High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac		Thermal-Magnetic Trip Unit Only For Use with Standard or High or Ultra High Interrupting Frames Magnetic Trip Range is 5–10 Up Through 600 A; 4–8 on 700 and 800 A x Continuous Ampere Rating	Standard Terminals Only ① See Page V4-T2-217 for Optional Terminals
	Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals Catalog Number	Frame Only Catalog Number	Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals Catalog Number	Frame Only Catalog Number	Catalog Number	Catalog Number
300	**MDL2300**	**MDL2800F**	**HMDL2300**	**HMDL2800F**	**MT2300T**	**TA700MA1**
350	**MDL2350**		**HMDL2350**		**MT2350T**	**TA700MA1**
400	**MDL2400**		**HMDL2400**		**MT2400T**	**TA700MA1**
450	**MDL2450**		**HMDL2450**		**MT2450T**	**TA700MA1**
500	**MDL2500**		**HMDL2500**		**MT2500T**	**TA700MA1**
600	**MDL2600**		**HMDL2600**		**MT2600T**	**TA700MA1**
700	**MDL2700**		**HMDL2700**		**MT2700T**	**TA700MA1**
800	**MDL2800**		**HMDL2800**		**MT2800T**	**TA800MA2**

Types MDL and HMDL Thermal-Magnetic Circuit Breakers with Interchangeable Trip Units—Three-Pole

Maximum Continuous Ampere Rating at 40 °C	Standard Interrupting Capacity 600 Vac Rated 50 kAIC at 480 Vac		High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac		Thermal-Magnetic Trip Unit Only For Use with Standard or High or Ultra High Interrupting Frames Magnetic Trip Range is 5–10 Up Through 600 A; 4–8 on 700 and 800 A x Continuous Ampere Rating	Standard Terminals Only ① See Page V4-T2-217 for Optional Terminals
	Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals Catalog Number	Frame Only Catalog Number	Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals Catalog Number	Frame Only Catalog Number	Catalog Number	Catalog Number
300	**MDL3300**	**MDL3800F**	**HMDL3300**	**HMDL3800F**	**MT3300T**	**TA700MA1**
350	**MDL3350**		**HMDL3350**		**MT3400T**	**TA700MA1**
400	**MDL3400**		**HMDL3400**		**MT3400T**	**TA700MA1**
450	**MDL3450**		**HMDL3450**		**MT3450T**	**TA700MA1**
500	**MDL3500**		**HMDL3500**		**MT3500T**	**TA700MA1**
600	**MDL3600**		**HMDL3600**		**MT3600T**	**TA700MA1**
700	**MDL3700**		**HMDL3700**		**MT3700T**	**TA700MA1**
800	**MDL3800**		**HMDL3800**		**MT3800T**	**TA800MA2**

Note

① Two terminals are required per pole.

Types MDL and HMDL Electronic Circuit Breakers with Interchangeable Trip Units

Order as Individual Components: breaker frame, trip unit and terminals.
See 310+ adjustability specifications on **Page V4-T2-220**.

Types MDL and HMDL Electronic Circuit Breakers with Interchangeable 310+ Trip Units—Three-Pole

	Circuit Breaker Frame Only		Digitrip RMS 310+ Trip Unit Only ①					
			Standard LS	Optional LSI	LSG	LSIG		
Maximum Continuous Ampere Rating at 40 °C	Standard Interrupting Capacity 600 Vac Rated 50 kAIC at 480 Vac Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac Catalog Number	Adjustable Short Time Pickup with I^2t Short Delay Ramp Catalog Number	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I^2t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Ground Fault Protection	Neutral CT for LSG and LSIG ②③ Catalog Number	Terminal Information
800	MDL3800F	HMDL3800F	MES3800LS	MES3800LSI	MES3800LSG	MES3800LSIG	LGFCT600	See **Page V4-T2-218**

Types MDLB and HMDLB Electronic Circuit Breakers with Non-Interchangeable 310+ Trip Units ④

	Factory-Assembled Circuit Breaker Consisting of Frame and Trip Unit Less Terminals				
	LS	LSI	LSG	LSIG	
Maximum Continuous Ampere Rating at 40 °C	Adjustable Short Time Pickup with I^2t Short Delay Ramp Catalog Number	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I^2t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Ground Fault Protection	Neutral CT for LSG and LSIG ②③ Catalog Number
Three-Pole Standard Interrupting Capacity 600 Vac Rated 50 kAIC at 480 Vac					
800	MDLB3800FT33W	MDLB3800FT32W	MDLB3800FT35W	MDLB3800FT36W	LGFCT600
Three-Pole High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac					
800	HMDLB3800FT33W	HMDLB3800FT32W	HMDLB3800FT35W	HMDLB3800FT36W	LGFCT600

100% Rated Types CMDL and CHMDL Electronic Circuit Breakers with Interchangeable Trip Units

The NEC allows the breaker to be rated at 100% of its frame size in an assembly, provided that 90 °C wire is applied at the 75 °C ampacity. All 100% rated circuit breakers have electronic trip units. Order as individual components: breaker frame, trip unit and terminals. See 310+ adjustability specifications on **Page V4-T2-220**.

100% Rated Types CMDL and CHMDL Electronic Circuit Breakers with Interchangeable 310+ Trip Units—Three-Pole

	Circuit Breaker Frame Only		Digitrip RMS 310+ Trip Unit Only ①					
			Standard LS	Options LSI	LSG	LSIG		
Maximum Continuous Ampere Rating at 40 °C	Standard Interrupting Capacity 600 Vac Rated 50 kAIC at 480 Vac Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac	Adjustable Short Time Pickup with I^2t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I^2t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Ground Fault Protection	Neutral CT for LSG and LSIG ②③ Catalog Number	Terminal Information
800	CMDL3800F	CHMDL3800F	MES3800LS	MES3800LSI	MES3800LSG	MES3800LSIG	LGFCT600	See **Page V4-T2-218**

Notes

① For AC use only.
② Required for four-wire systems if neutral protection is desired.
③ Included with LSG and LSIG trip units or breakers.
④ Factory sealed, suitable for reverse feed application. CMDLB and CHMDLB are also available.

Dimensions and Weights

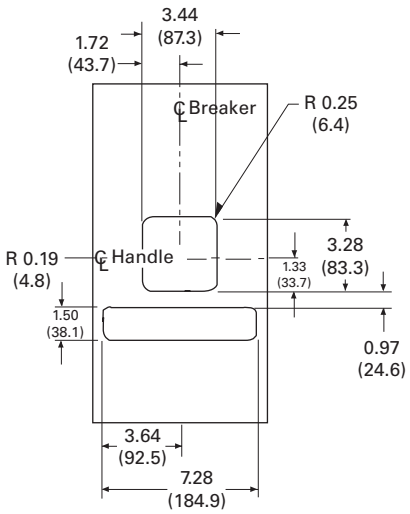
Dimensions in Inches (mm)

MD Frame

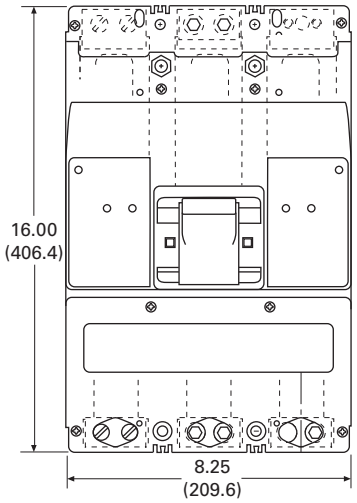
Number of Poles	Width	Height	Depth
2, 3	8.25 (209.6)	16.00 (406.4)	4.06 (103.1)

MDL-Frame, Two- and Three-Pole

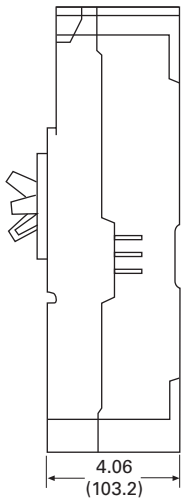
Drilling Plan



Front View



Side View



Approximate Shipping Weight, Lbs (kg)

MD Frame

Breaker Type	Complete Breaker		Frame Only		Trip Unit ①	
	Two-Pole	Three-Pole	Two-Pole	Three-Pole	Two-Pole	Three-Pole
MDL, HMDL (T/M T.U.)	26.5 (12.0)	29.0 (13.2)	24.5 (11.1)	26.0 (11.8)	2.5 (1.1)	3.0 (1.4)
MDL, HMDL (Elec. T.U.)	—	30.0 (13.6)	—	26.0 (11.8)	—	4.0 (1.8)

Note

① Thermal-magnetic only.