

## Technical Data TD01203013E

Effective March 2011  
Supersedes February 2010

# F-Frame circuit breaker

## 10–225 amperes



### Product description

- All of Eaton's F-Frame circuit breakers are HACR rated
- All F-Frame thermal-magnetic circuit breakers 10–50A are suitable for HID (high intensity discharge) use
- All F-Frame circuit breakers are suitable for reverse feed use

**Table 1. Frame Trip Ratings**

Frame	Ampere Rating
EDB, EDS, EDH, EDC	100–225
EHD	10–100
FDB	10–150
ED, HFD, FDC, HFDDC	15–225
FD	15–225
FDE, HFDE, FDCE ①	80, 160, 225

① The 80A FDE, HFDE, FDCE is adjustable from 15–80A.  
The 160A FDE, HFDE, FDCE is adjustable from 60–160A.  
The 225A FDE, HFDE, FDCE is adjustable from 100–225A.

# EATON

Powering Business Worldwide

**Table 2. UL® 489 Interrupting Capacity Ratings**

Circuit Breaker Type	Number of Poles	Trip Type ①	Interrupting Capacity (Symmetrical Amperes)					
			Volts AC (50/60 Hz)				Volts DC	
			240	277	480	600	125	250 ②③
EDB	2, 3	T/M N.I.T.	22,000	—	—	—	10,000	—
EDS	2, 3	T/M N.I.T.	42,000	—	—	—	10,000	—
ED	2, 3	T/M N.I.T.	65,000	—	—	—	10,000	—
EDH	2, 3	T/M N.I.T.	100,000	—	—	—	10,000	—
EDC ④	2, 3	T/M N.I.T.	200,000	—	—	—	10,000	—
EHD	1 2, 3	T/M N.I.T.	— 18,000	14,000 —	— 14,000	— —	10,000 —	— 10,000
FDB	2, 3, 4	T/M N.I.T.	18,000	—	14,000	14,000	—	10,000
FD	1 2, 3, 4	T/M N.I.T.	— 65,000	35,000 —	— 35,000	— 18,000	10,000 —	— 10,000
HFD	1 2, 3, 4	T/M N.I.T.	— 100,000	65,000 —	— 65,000	— 25,000	10,000 —	— 22,000
FDC ④	2, 3, 4	T/M N.I.T.	200,000	—	100,000	35,000	—	22,000
HFDDC ⑤	3	T/M N.I.T.	—	—	—	—	—	50,000 ⑥
FDE	3	Electronic N.I.T.	65,000	—	35,000	18,000	—	—
HFDE	3	Electronic N.I.T.	100,000	—	65,000	25,000	—	—
FDCE ④	3	Electronic N.I.T.	200,000	—	100,000	25,000	—	—

① N.I.T. is non-interchangeable trip unit. T/M is thermal-magnetic. For DC applications, magnetics are approximately 40% higher.

② Two-pole circuit breaker, or two poles of three-pole circuit breaker.

③ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 22 kA.

④ Current limiting.

⑤ HFDDC is UL only and is not tested to other standards.

⑥ Interrupting rating is 42,000A at 600 Vdc with three-poles in series.

**Table 3. Line and Load Terminals**

Maximum Breaker Amperes	Terminal Body Material ①	Wire Type	AWG Wire Range	Metric Wire Range (mm²)	Catalog Number (Package of 3 Terminals)
<b>Standard Pressure Type Terminals</b>					
20 (EHD)	Steel	Cu/Al	(1) #14–#10	2.5–4	<b>3T20FB</b>
100	Steel	Cu/Al	(1) #14–1/0	2.5–50	<b>3T100FB</b>
150	Aluminum	Cu/Al	(1) #4–4/0	25–95	<b>3TA150FB</b>
225	Aluminum	Cu/Al	(1) #4–4/0	25–95	<b>3TA225FD</b>
<b>Optional Pressure Terminals</b>					
50	Aluminum	Cu/Al	(1) #14–#4	2.5–16	<b>3TA50FB</b>
100	Aluminum	Cu/Al	(1) #14–1/0	2.5–50	<b>3TA100FD</b>
225	Aluminum	Cu/Al	(1) #6–300 kcmil	16–150	<b>3TA225FDK ②</b>

① UL listed for use with copper or aluminum conductors as noted.

② Use only on 175–225A. Includes terminal shield and increases height.

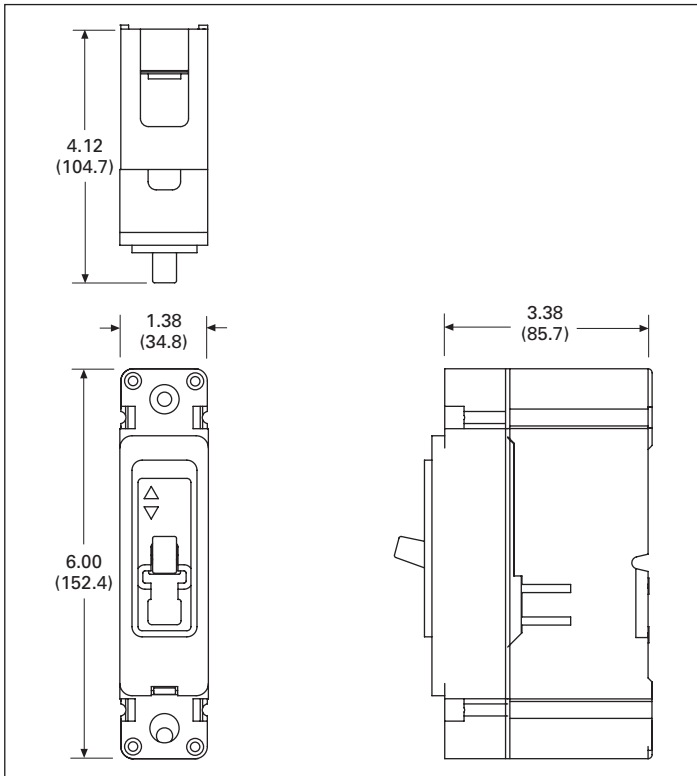
**Table 4. Approximate Shipping Weight in Lbs (kg)**

Circuit Breaker Type	Number of Poles			
	1	2	3	4
ED, EDB, EDS, EDH, EDC	—	3 (1.4)	4.5 (2.0)	—
EHD, FDB, FD, HFD, HFDDC, FDC	2 (0.9)	3 (1.4)	4.5 (2.0)	6 (2.7)
FDE, HFDE, FDCE	—	—	4.2 (1.9)	—

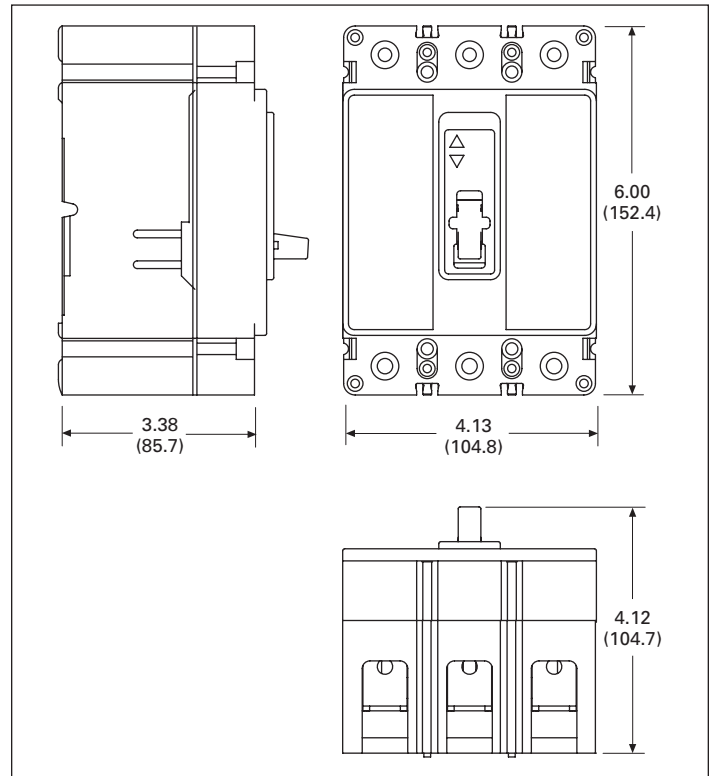
**Table 5. Dimensions in Inches (mm)**

Dimensions	Number of Poles			
	1	2	3	4
Height	6.00 (152.4)	6.00 (152.4)	6.00 (152.4)	6.00 (152.4)
Width	1.38 (34.8)	2.75 (69.9)	4.13 (104.8)	5.50 (139.7)
Depth	3.38 (85.7)	3.38 (85.7)	3.38 (85.7)	3.38 (85.7)

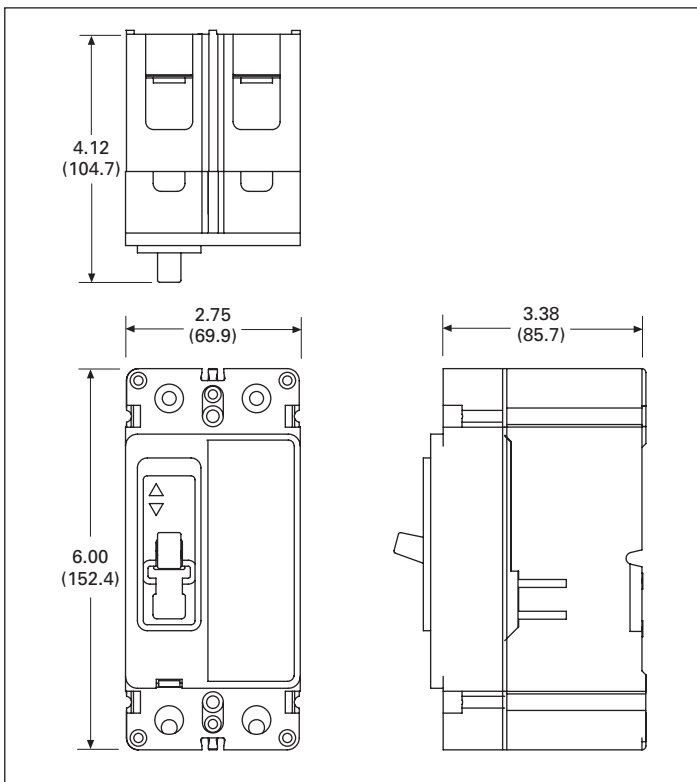
**Dimensions in inches (mm)**



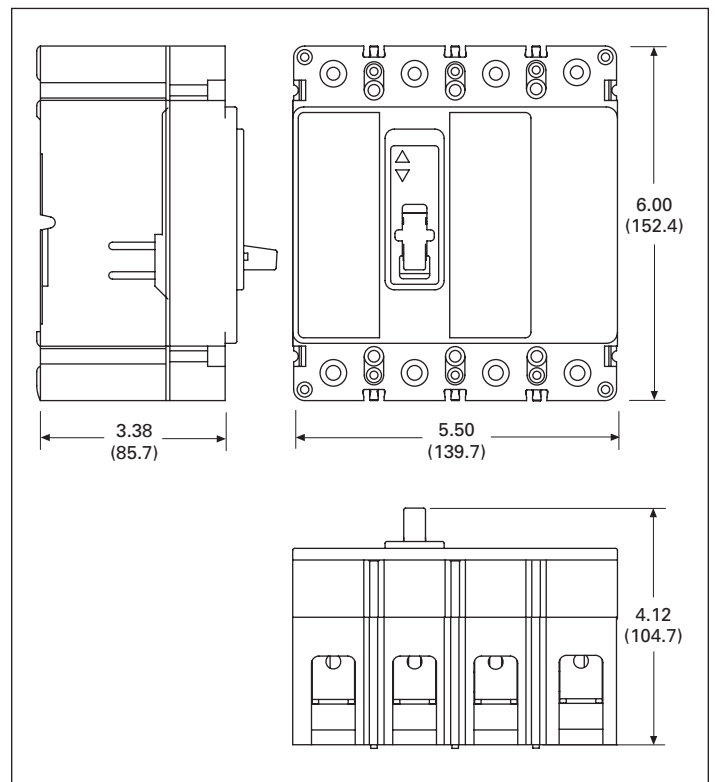
**Figure 1. Single-Pole F-Frame Breaker**



**Figure 3. Three-Pole F-Frame Breaker**



**Figure 2. Two-Pole F-Frame Breaker**



**Figure 4. Four-Pole F-Frame Breaker**

**Note:** For curves and additional technical information, please visit our Web site at [www.eaton.com](http://www.eaton.com).

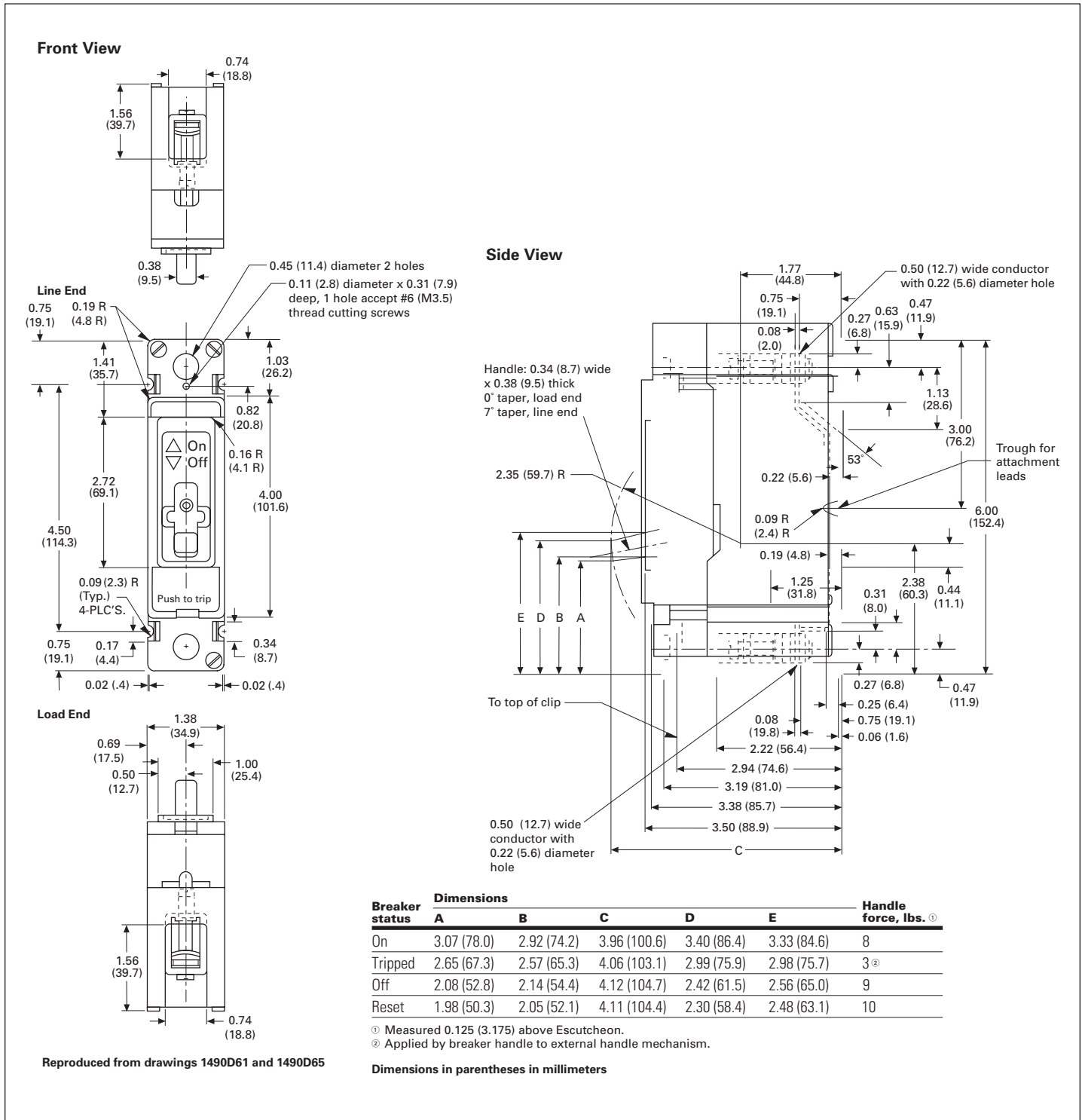


Figure 5. Type FD Single-Pole Outline

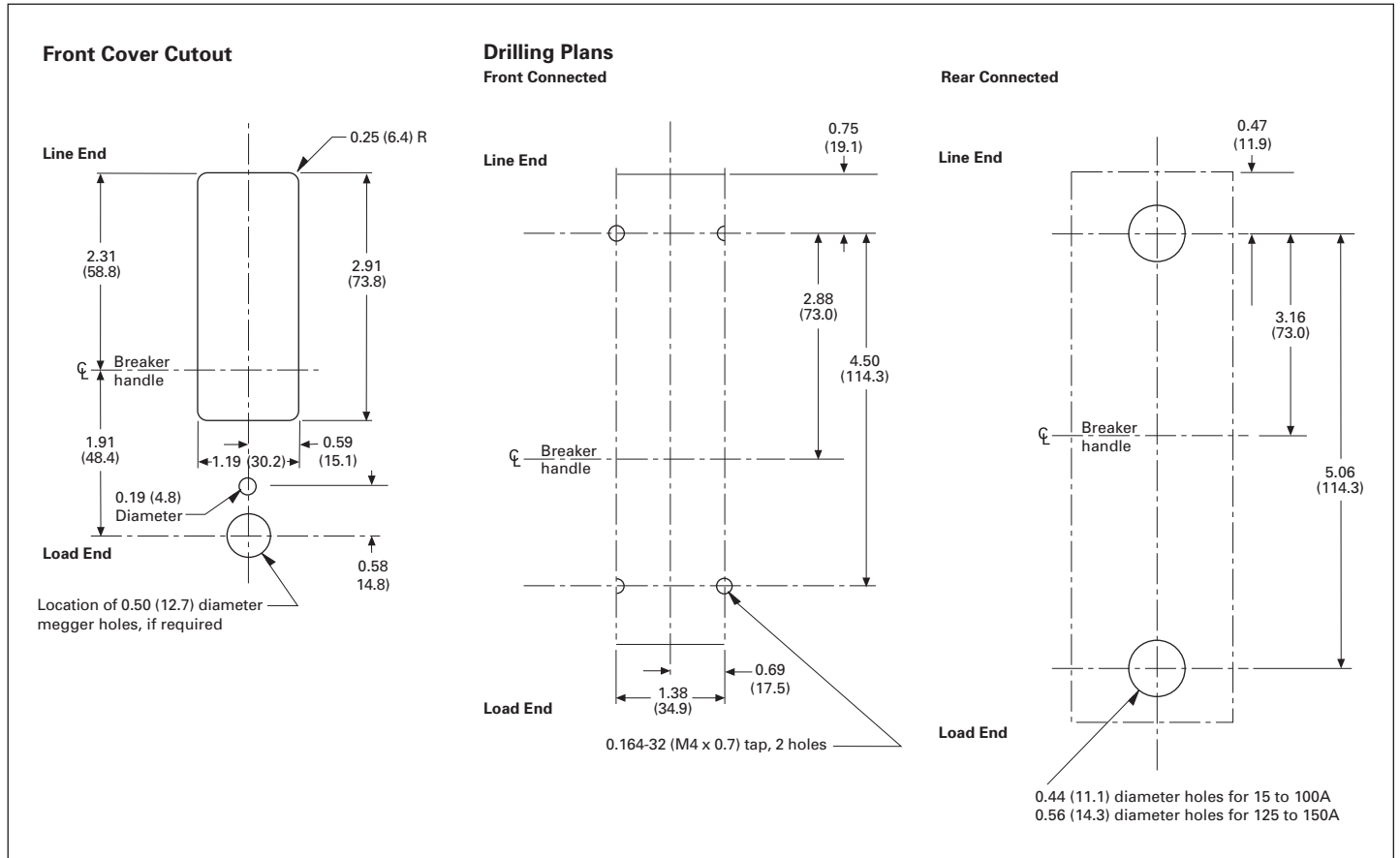


Figure 6. Type FD Single-Pole Outline Drilling Plans

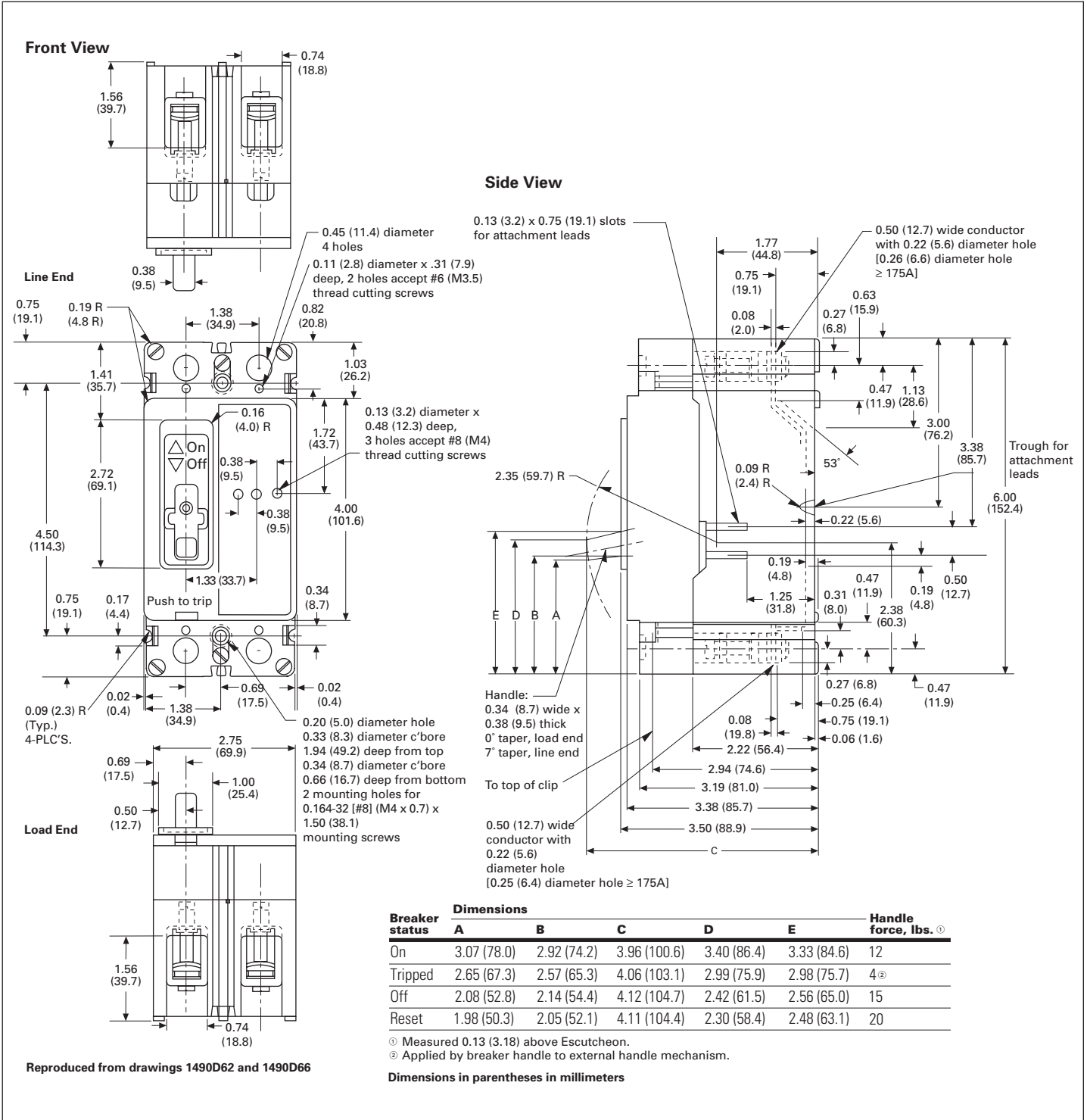


Figure 7. Type FD Two-Pole Outline

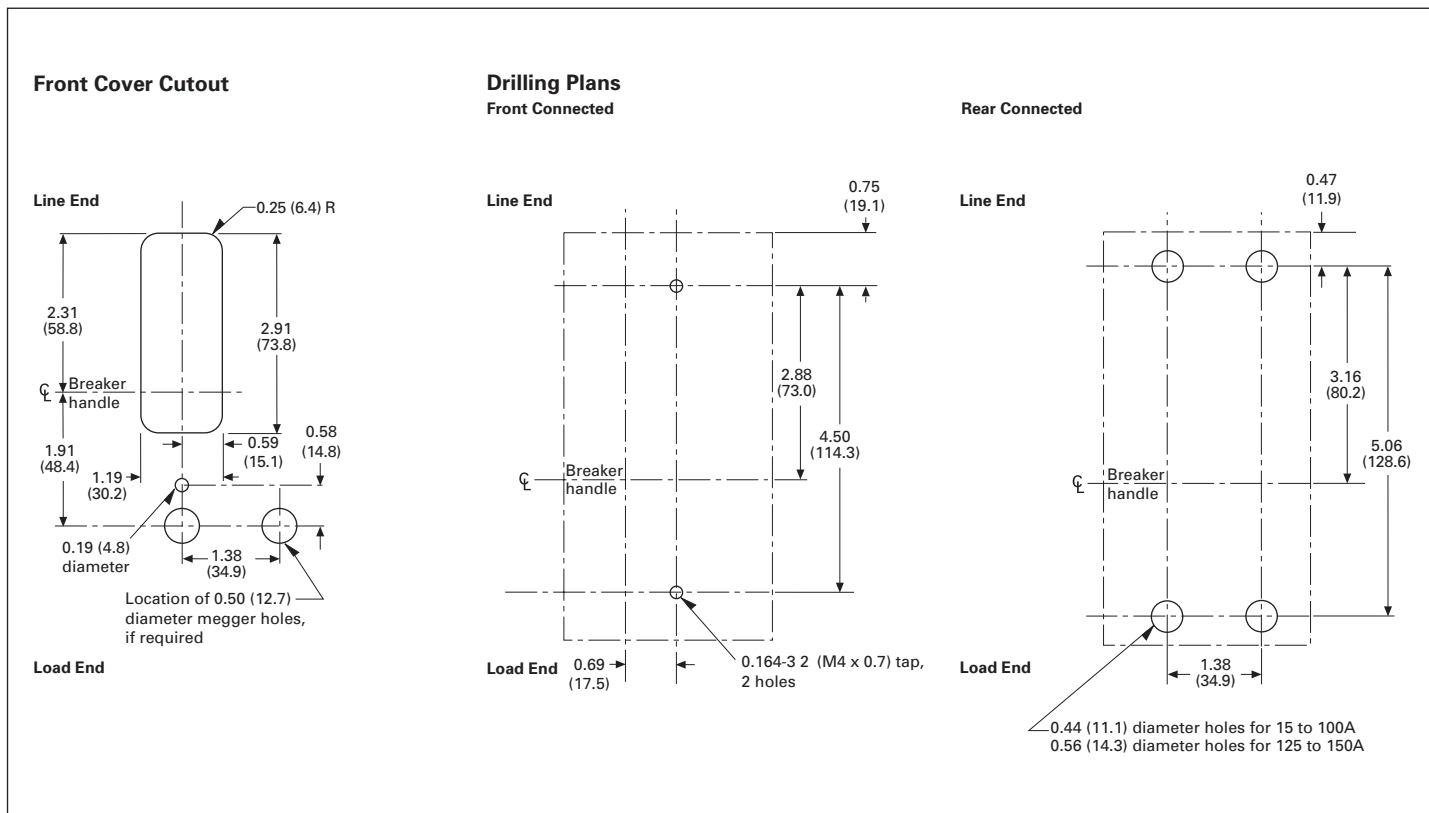


Figure 8. Type FD Two-Pole Outline Drilling Plans

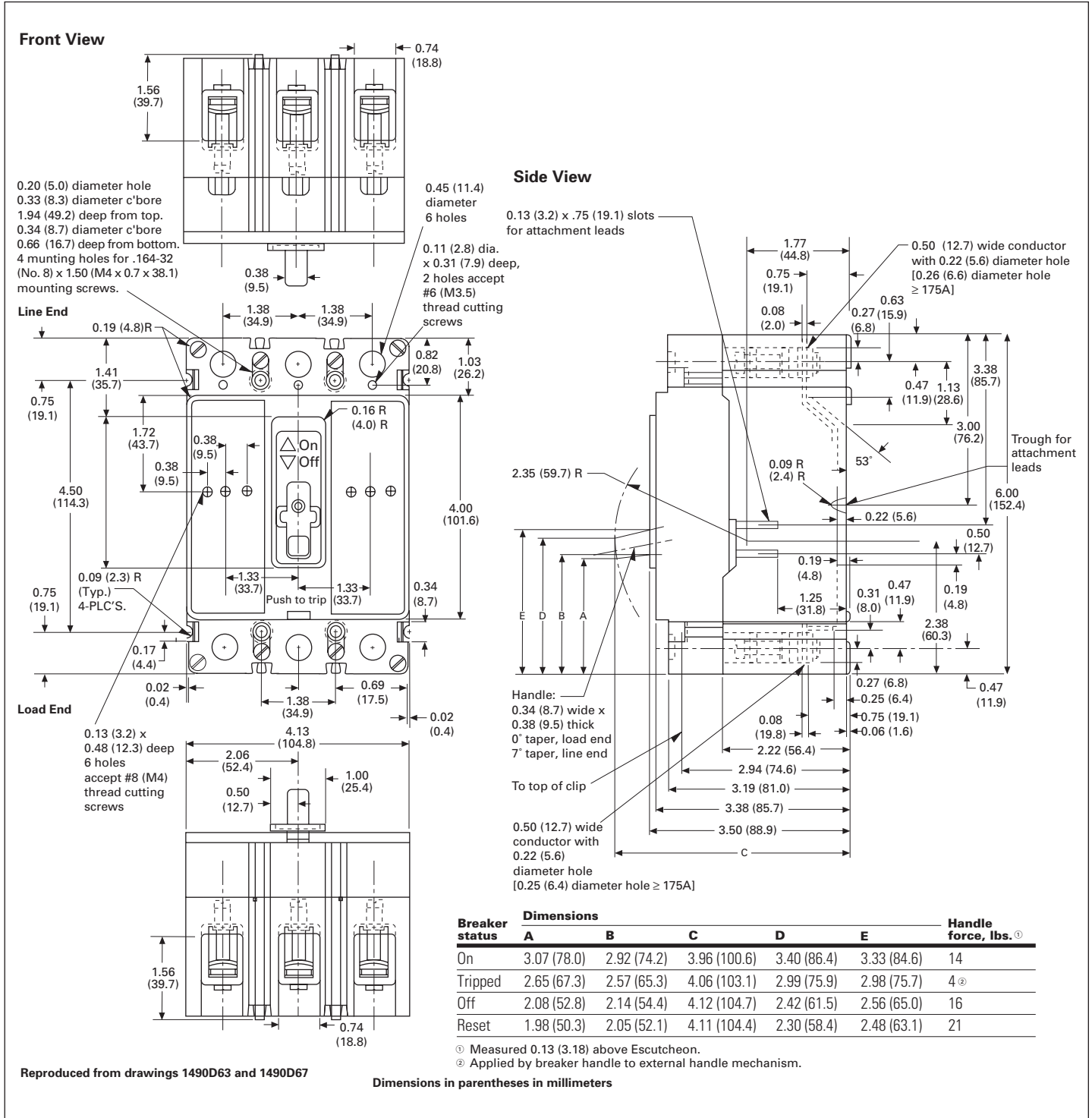


Figure 9. Type FD Three-Pole Outline



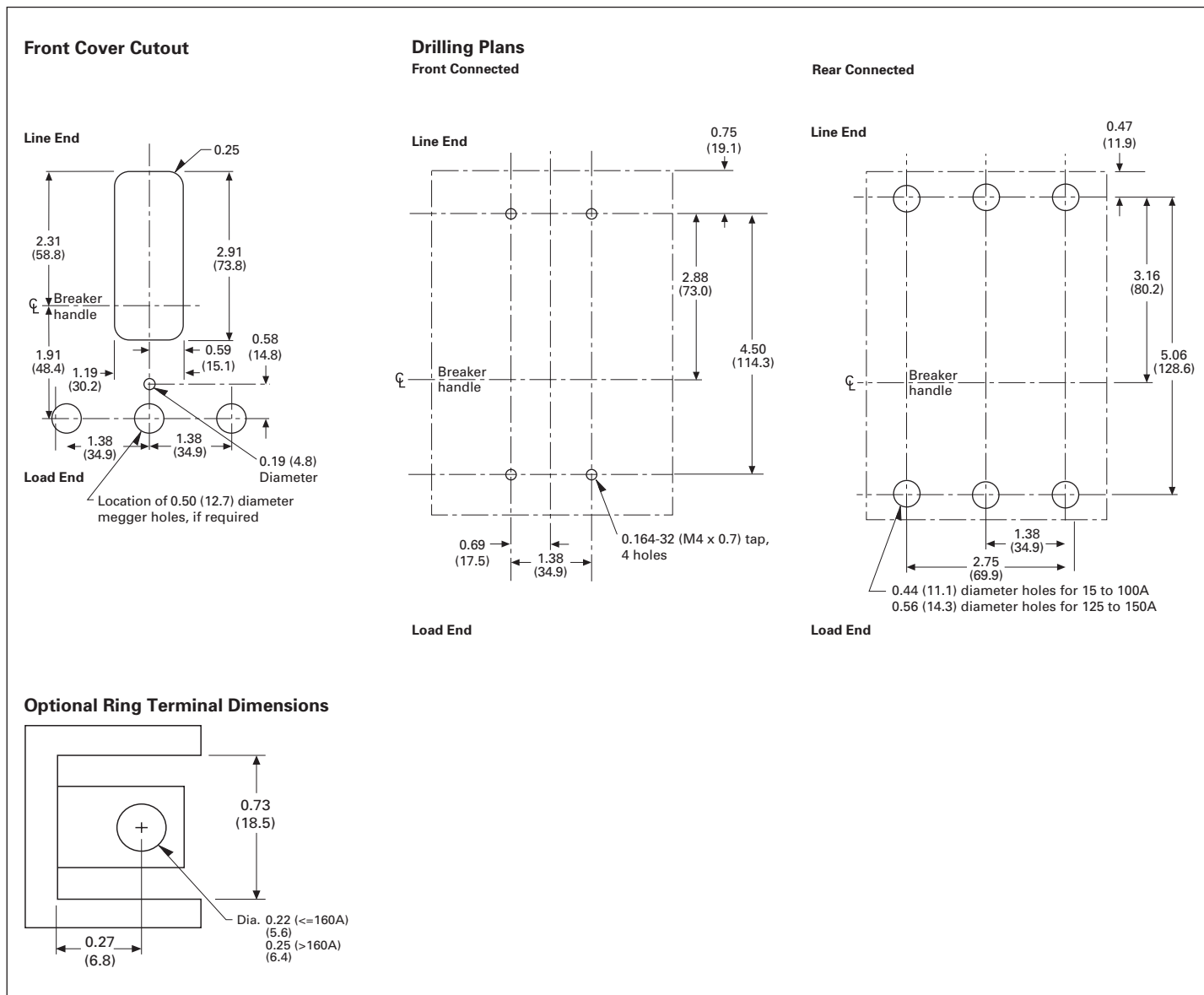


Figure 10. Type FD Three-Pole Outline Drilling Plans

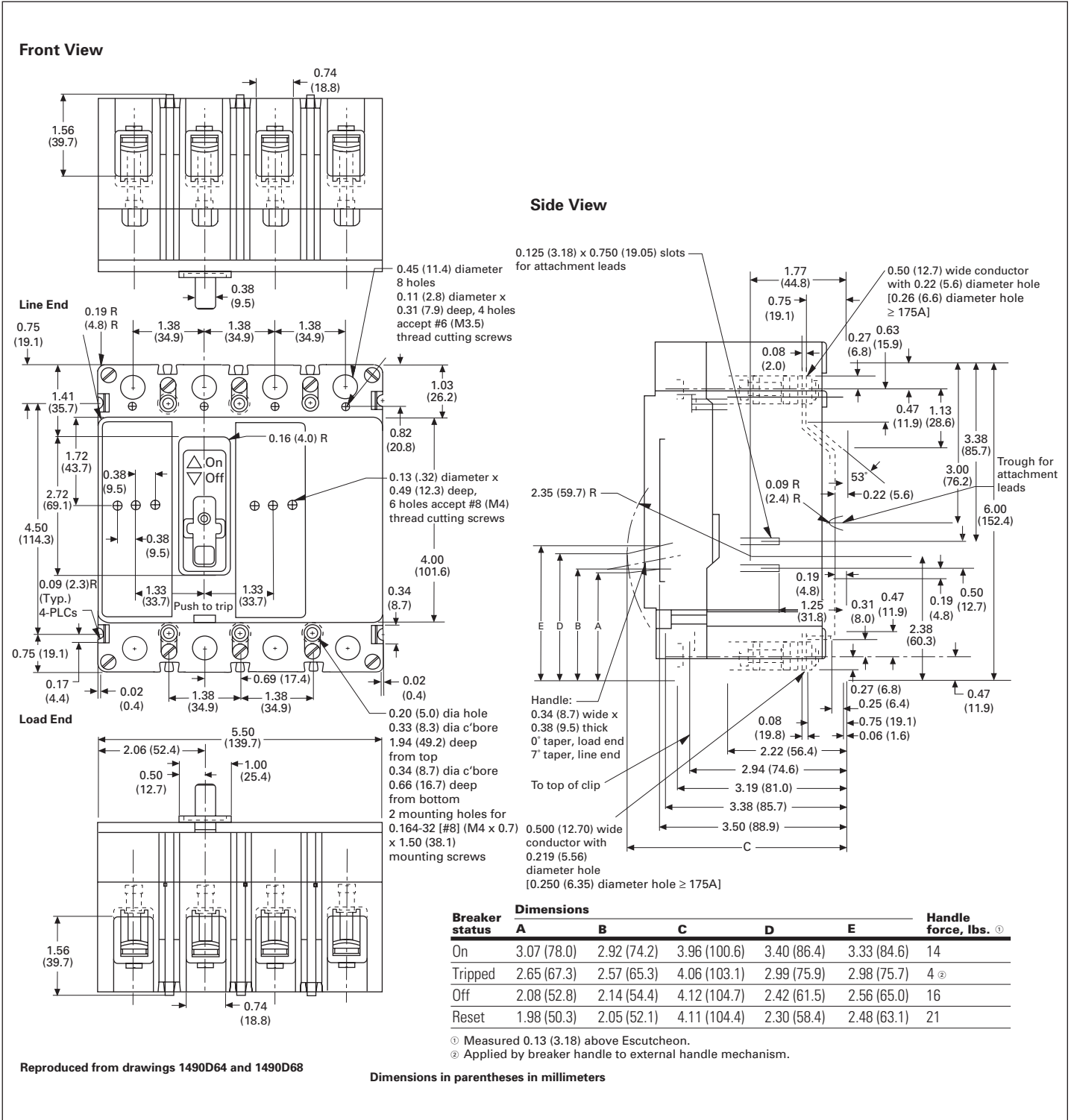


Figure 11. Type FD Four-Pole Outline

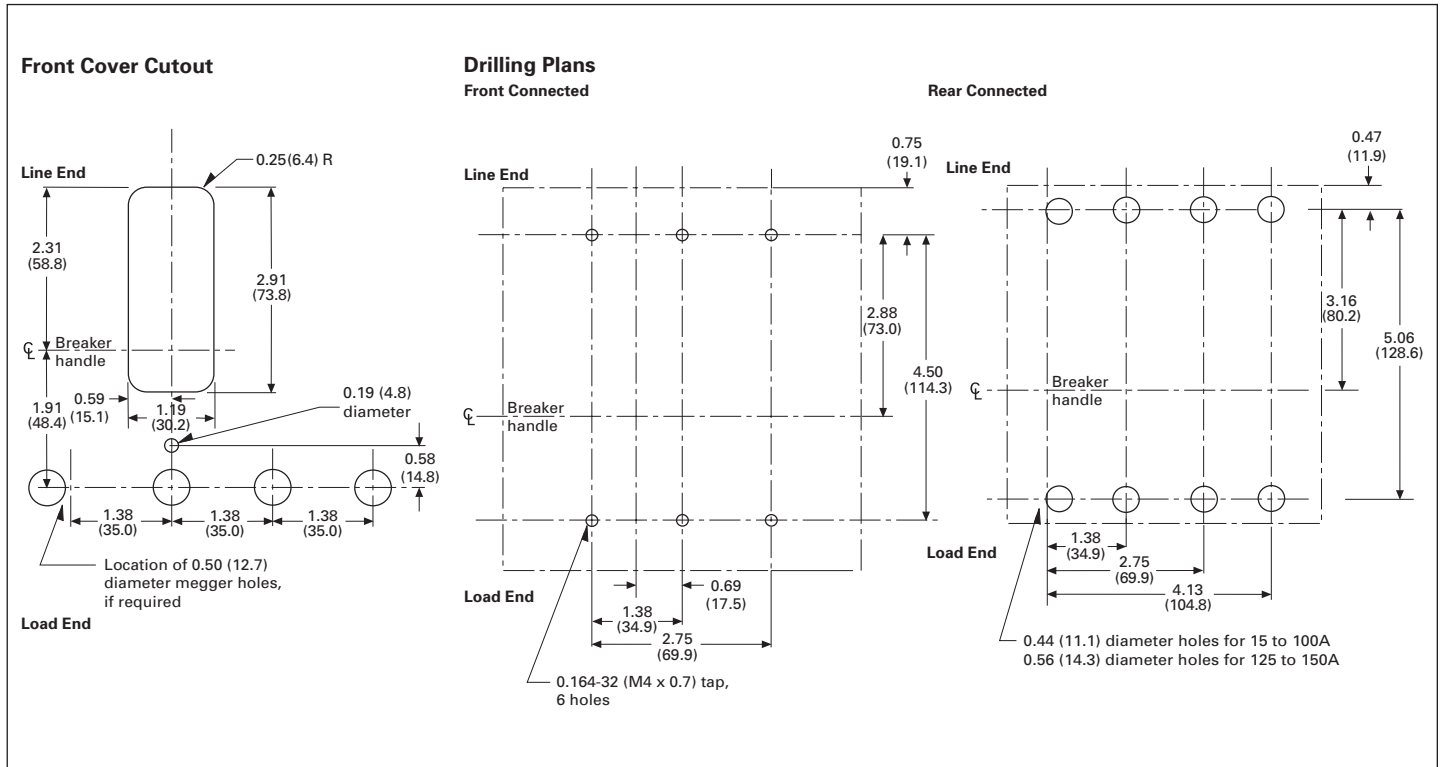


Figure 12. Type FD Four-Pole Outline Drilling Plans

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

© 2011 Eaton Corporation  
All Rights Reserved  
Printed in USA  
Publication No. TD01203013E / Z10989  
March 2011



Eaton is a registered trademark  
of Eaton Corporation.

All other trademarks are property  
of their respective owners.