

Series C® F-Frame



Typical Series C F-Frame Breaker

- All Series C F-frame circuit breakers are HACR rated.
- All circuit breakers 10 through 50 amperes are suitable for HID (high intensity discharge) use.
- All F-frame circuit breakers are suitable for reverse feed use.

Interrupting Capacity Ratings

UL489 Interrupting Capacity Ratings

Circuit Breaker Type	Number of Poles	Interrupting Capacity (Symmetrical Amperes) (kA)						Page Number
		Volts Ac (50/60 Hz)				Volts Dc ^①		
		240	277	480	600	125	250 ^{②③}	
ED	2, 3	65	—	—	—	10	—	32
EDH	2, 3	100	—	—	—	10	—	32
EDC	2, 3	200	—	—	—	10	—	32
EHD	1	—	14	—	—	10	—	32
	2, 3	18	—	14	—	—	10	32
FDB	2, 3, 4	18	—	14	14	—	10	32
FD	1	—	25	—	—	10	—	32
	2, 3, 4	65	—	25	18	—	10	32
HFD	1	—	65	—	—	10	—	33
	2, 3, 4	100	—	65	25	—	22	33
FDC	2, 3, 4	200	—	100	35	—	22	33

IEC 157-1 (P1) Interrupting Capacity Ratings (P1)

Circuit Breaker Type	Number of Poles	Interrupting Capacity (Symmetrical Amperes) (kA)						Page Number
		Volts Ac (50/60 Hz)				Volts Dc ^①		
		220, 240	380, 415	440	500	125	250 ^{②③}	
ED	2, 3	65	—	—	—	10	—	32
EDH	2, 3	100	—	—	—	10	—	32
EDC	2, 3	200	—	—	—	10	—	32
FDB	2, 3, 4	18	14	14	14	—	10	32
FD	1	25	—	—	—	10	—	32
	2, 3, 4	65	35	35	18	—	10	32
HFD	1	65	—	—	—	10	—	33
	2, 3, 4	100	65	65	25	—	22	33
FDC	2, 3, 4	200	100	100	35	—	22	33

① Dc ratings apply to substantially non-inductive circuits.
 ② 2-pole circuit breaker, or two poles of 3-pole circuit breaker.
 ③ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 22 kA.

Series C® F-Frame

Types ED, EDH, and EDC Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units Suitable for Reverse Feed

Maximum Continuous Ampere Rating @ 40°C	240 Vac Maximum, 125 Vdc					
	65 kAIC @ 240 Vac		100 kAIC @ 240 Vac		200 kAIC @ 240 Vac	
	Type ED		Type EDH		Type EDC Current Limiting	
	2-Pole	3-Pole	2-Pole	3-Pole	2-Pole	3-Pole
	Catalog Number (Includes Terminals on Load End Only)					
100	ED2100	ED3100	EDH2100	EDH3100	EDC2100	EDC3100
125	ED2125	ED3125	EDH2125	EDH3125	EDC2125	EDC3125
150	ED2150	ED3150	EDH2150	EDH3150	EDC2150	EDC3150
175	ED2175	ED3175	EDH2175	EDH3175	EDC2175	EDC3175
200	ED2200	ED3200	EDH2200	EDH3200	EDC2200	EDC3200
225	ED2225	ED3225	EDH2225	EDH3225	EDC2225	EDC3225

Instruction Leaflet/FRED Number 29C101

Type EHD Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units

Maximum Continuous Ampere Rating @ 40°C	277 Vac Maximum, 125 Vdc		480 Vac Maximum, 250 Vdc	
	14 kAIC @ 277 Vac		14 kAIC @ 480 Vac	
	Type EHD			
	1-Pole	2-Pole	3-Pole	
	Catalog Number (Includes Terminals on Load End Only)			
10 ^①	EHD1010	EHD2010	EHD3010	
15	EHD1015 ^②	EHD2015	EHD3015	
20	EHD1020 ^②	EHD2020	EHD3020	
25	EHD1025	EHD2025	EHD3025	
30	EHD1030	EHD2030	EHD3030	
35	EHD1035	EHD2035	EHD3035	
40	EHD1040	EHD2040	EHD3040	
45	EHD1045	EHD2045	EHD3045	
50	EHD1050	EHD2050	EHD3050	
60	EHD1060	EHD2060	EHD3060	
70	EHD1070	EHD2070	EHD3070	
80	EHD1080	EHD2080	EHD3080	
90	EHD1090	EHD2090	EHD3090	
100	EHD1100	EHD2100	EHD3100	

Instruction Leaflet/FRED Number 29C101

Type FD Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units

Maximum Continuous Ampere Rating @ 40°C	600 Vac Maximum, 250 Vdc			277 Vac Maximum, 125 Vdc		600 Vac Maximum, 250 Vdc		
	14 kAIC @ 600 Vac			25 kAIC @ 277 Vac		25 kAIC @ 480 Vac		
	Type FDB			Type FD				
	2-Pole	3-Pole	4-Pole	1-Pole	2-Pole	3-Pole	4-Pole	
	Catalog Number (Includes Terminals on Load End Only)							
10 ^①	FDB2010	FDB3010	FDB4010	FD1010	-	-	-	
15	FDB2015	FDB3015	FDB4015	FD1015 ^②	FD2015	FD3015	FD4015	
20	FDB2020	FDB3020	FDB4020	FD1020 ^②	FD2020	FD3020	FD4020	
25	FDB2025	FDB3025	FDB4025	FD1025	FD2025	FD3025	FD4025	
30	FDB2030	FDB3030	FDB4030	FD1030	FD2030	FD3030	FD4030	
35	FDB2035	FDB3035	FDB4035	FD1035	FD2035	FD3035	FD4035	
40	FDB2040	FDB3040	FDB4040	FD1040	FD2040	FD3040	FD4040	
45	FDB2045	FDB3045	FDB4045	FD1045	FD2045	FD3045	FD4045	
50	FDB2050	FDB3050	FDB4050	FD1050	FD2050	FD3050	FD4050	
60	FDB2060	FDB3060	FDB4060	FD1060	FD2060	FD3060	FD4060	
70	FDB2070	FDB3070	FDB4070	FD1070	FD2070	FD3070	FD4070	
80	FDB2080	FDB3080	FDB4080	FD1080	FD2080	FD3080	FD4080	
90	FDB2090	FDB3090	FDB4090	FD1090	FD2090	FD3090	FD4090	
100	FDB2100	FDB3100	FDB4100	FD1100	FD2100	FD3100	FD4100	
110	FDB2110	FDB3110	FDB4110	FD1110	FD2110	FD3110	FD4110	
125	FDB2125	FDB3125	FDB4125	FD1125	FD2125	FD3125	FD4125	
150	FDB2150	FDB3150	FDB4150	FD1150	FD2150	FD3150	FD4150	
175	-	-	-	-	FD2175	FD3175	FD4175	
200	-	-	-	-	FD2200	FD3200	FD4200	
225	-	-	-	-	FD2225	FD3225	FD4225	

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① Not UL listed. 5 kAIC interrupting rating.
② UL listed for SWD applications, see NEC Article 240-83 (d).

Series C® F-Frame

Line and Load Terminals

Line and load terminals provide wire connecting capabilities for specific ranges of continuous current ratings and wire types. Except as noted, terminals comply with Underwriters Laboratories, Inc., Standards UL486A and UL486B. Unless otherwise specified, F-frame circuit breakers

are factory equipped with load terminals only.

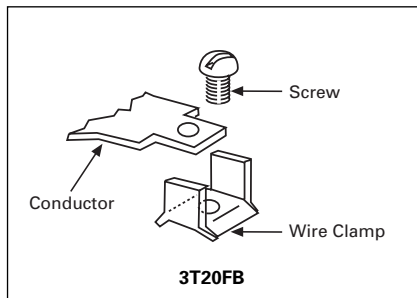
Ordering Information

F-frame circuit breakers and molded case switches have load terminals only as standard equipment. When standard line-end terminals (same as

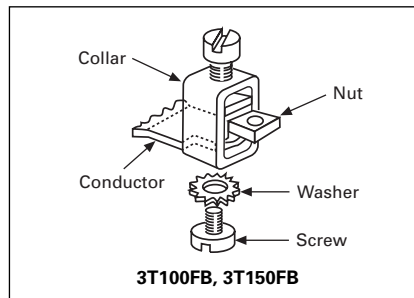
standard load-end terminals) are required, add suffix L to the circuit breaker catalog number. When non-standard or optional line and/or load terminals are required, order by style number. Specify if factory installation is required.

Line and Load Terminals

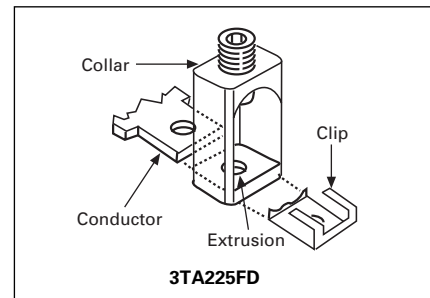
Maximum Breaker Amperes	Terminal Body Material	Wire Type	AWG Wire Range	Metric Wire Range mm ²	Package of 3 Terminals
					Catalog Number
Standard Pressure Type Terminals					
20 (EHD)	Steel	Cu/Al	#14-#10	2.5-4	3T20FB ①
100	Steel	Cu/Al	#14-1/0	2.5-50	3T100FB
225	Aluminum	Cu/Al	#14-4/0	25-95	3TA225FD
Optional Pressure Terminals					
50	Aluminum	Cu/Al	#14-#4	2.5-16	3TA50FB ①
100	Aluminum	Cu/Al	#14-1/0	2.5-50	3TA100FD
200	Stainless Steel	Cu	#4-4/0	25-95	3T150FB
225	Aluminum	Cu/Al	#6-300 kcmil	16-150	3TA225FDK ②



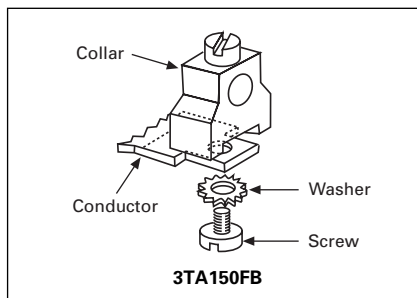
Assemble wire clamp to bottom of conductor as shown.



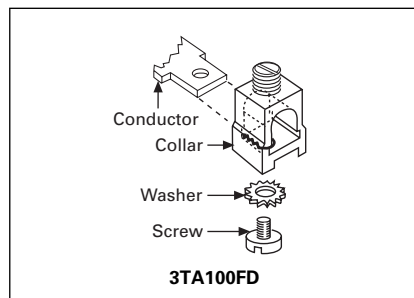
Insert collar enclosing conductor as shown. Locate nut on top of conductor and tighten securely with screw and washer. Caution: Collar must surround conductor.



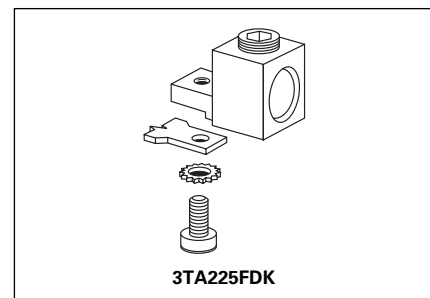
Insert collar enclosing conductor and center on extrusion on collar. Install clip with legs on top of conductor and snap end around bottom of collar.



Assemble collar on top of conductor as shown. Tighten securely with screw and washer.



Collar slides onto conductor and is held in position by a screw and lockwasher.



Assemble collar on top of conductor as shown. Tighten securely with screw and washer. Terminal shield must be used with this collar.

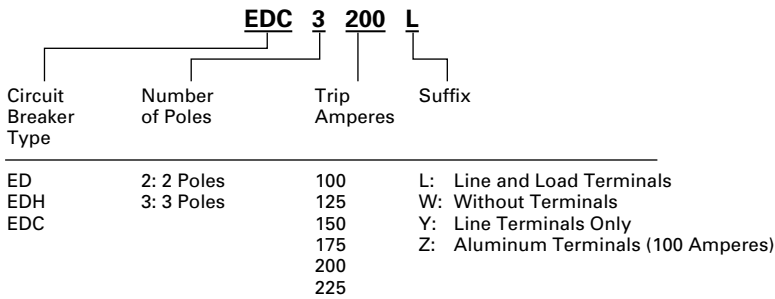
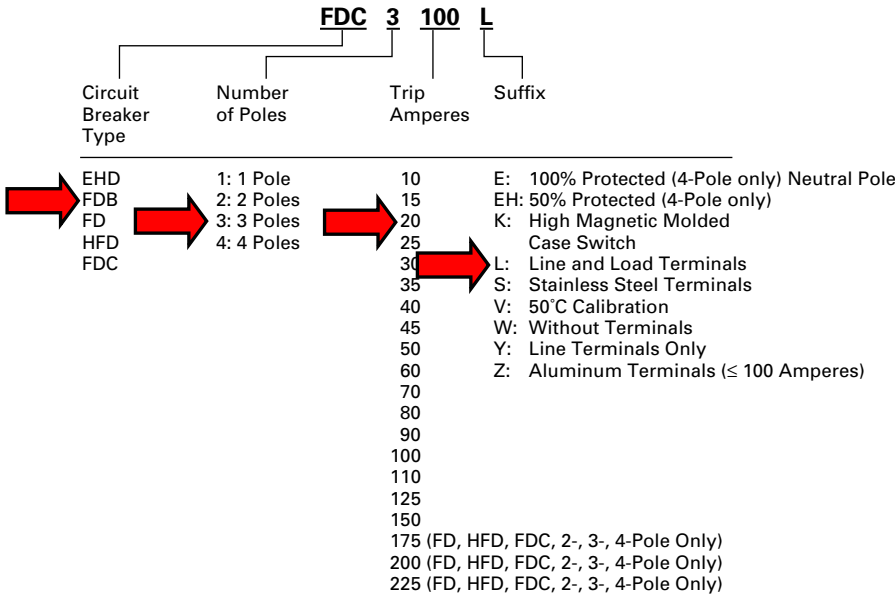
① Not for use with ED, EDH, EDC breakers.

② Includes terminal shield kit. Adds approximately 3 inches to breaker height. Available for use on 3-pole breaker only.

Catalog Numbering System

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.

Circuit Breaker Catalog Number



Dimensions/Weights

Dimensions, Inches (mm)

Number of Poles	Width	Height	Depth
1	1.375 (35)	6 (152)	3.375 (86)
2	2.75 (70)	6 (152)	3.375 (86)
3	4.125 (105)	6 (152)	3.375 (86)
4	5.5 (140)	6 (152)	3.375 (86)

Approximate Shipping Weight, Lbs. (kg)

Breaker Type	Number of Poles			
	1	2	3	4
ED, EDH, EDC	–	3 (1.361)	4.5 (2.041)	–
EHD, FDB, FD, HFD, FDC	2 (.907)	3 (1.361)	4.5 (2.041)	6 (2.721)

Series C® F-Frame

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

	Reference Page	1-Pole		2-Pole		3-Pole			4-Pole			
		Center		Left	Right	Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories												
Alarm Lockout Switch (Make Only)	139	■										
Alarm Lockout (Make/Break)	139				■		□		□		■	
Alarm Lockout (2Make/2Break)	139				■		□		□		■	
Auxiliary Switch (1A, 1B)	142				■		■		■		■	■
Auxiliary Switch (2A, 2B)	142				■		■		■		■	■
Auxiliary Switch and Alarm Switch Combination	145				■		□		□		■	
Shunt Trip – Standard	148				■		■		■		■	■
Shunt Trip – Low Energy	152				■		■		■		■	
Undervoltage Release Mechanism	154				■		■		■		■	

External Accessories

End Cap Kit	161				●				●			●
Keeper Nut	161	●			●				●			●
Control Wire Terminal Kit	162	●			●				●			●
Multiwire Connectors	162	●			●				●			●
Base Mounting Hardware	163	●			●				●			●
Terminal Shields	165	●			●				●			●
Terminal End Covers	166								●			
Interphase Barriers	166				●				●			●
Non-Padlockable Handle Block	168	■			■				■			■
Snap-on Padlockable Handle Lock Hasp	168	■			■				■			■
Padlockable Handle Lock Hasp	169				■		□		□		□	□
Cylinder Lock	169						■					
Key Interlock Kit	170				■		□		□		□	□
Sliding Bar Interlock – Requires Two Breakers	171								●			
Walking Beam Interlock – Requires Two Breakers	171								●			●
Electrical (Solenoid) Operator	172								●			●
Plug-in Adapters	174				●				●			●
Rear Connecting Studs	175	●			●				●			●
Panelboard Connecting Straps	177	●			●				●			●
Handle Mechanisms	178								●			
Door Hardware/Accessories	182								●			●
LFD Current Limiter	183								●			
IQ Energy Sentinel	184				●				●			

Modifications (Refer to Cutler-Hammer)

Special Calibration	186	●			●				●			●
Moisture Fungus Treatment	186	●			●				●			●
Freeze-Tested Circuit Breakers	186	●			●				●			●
Marine Application	186	●			●				●			●

■ Applicable in indicated pole position

□ May be mounted on left or right pole – not both

● Accessory available/Modification available



AB DE-ION Circuit Breakers

Types EHD, FDB, FD and HFD 20 Amperes

