SIEMENS

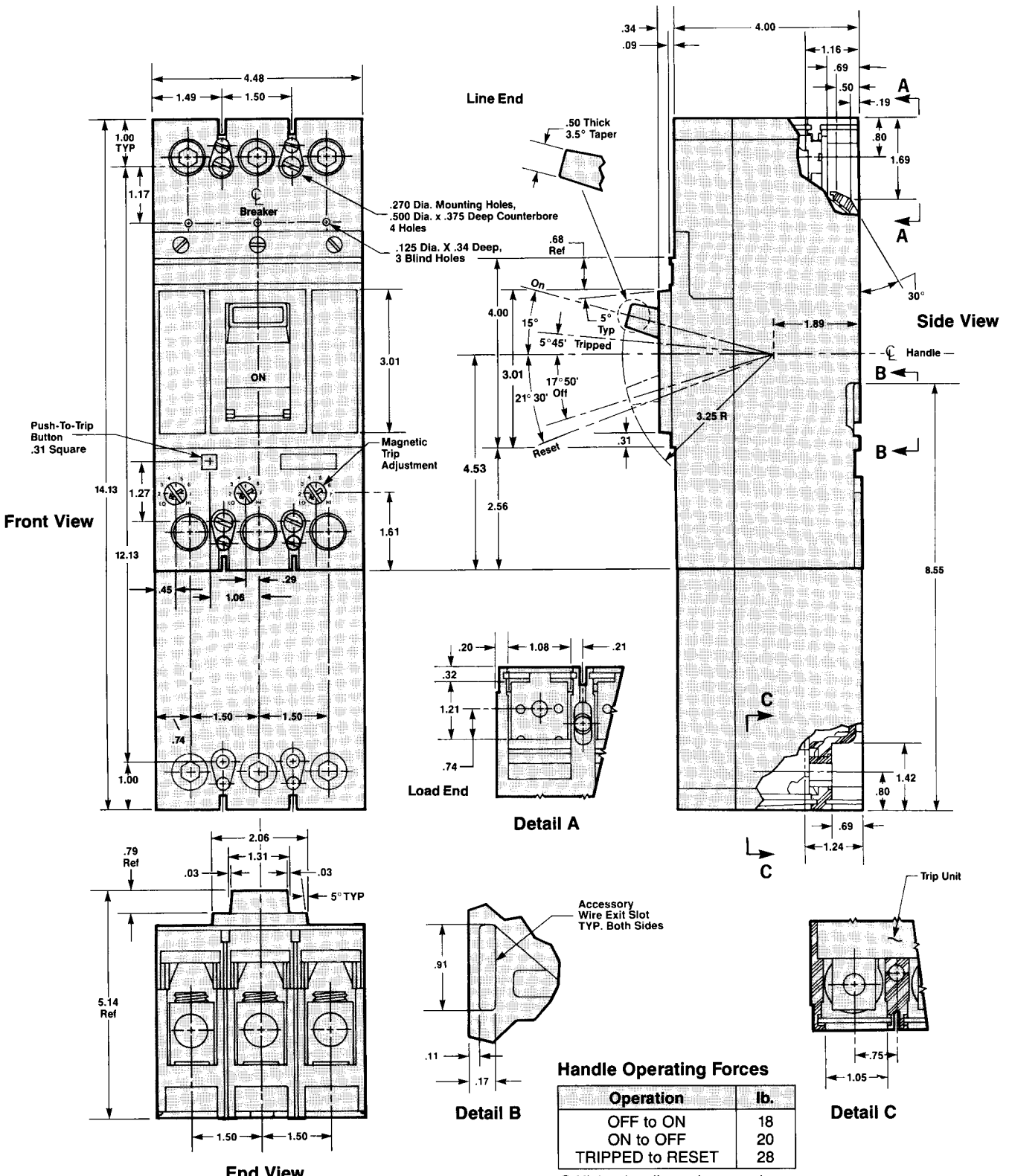
I-T-E® Molded Case Circuit Breakers

FD-Frame Information and Instruction Guide



I-T-E FD-Frame Outline Drawings①—2 and 3-Pole②

Types CFD6, CFD6-ETI



Handle Operating Forces

Operation	lb.
OFF to ON	18
ON to OFF	20
TRIPPED to RESET	28

①All drawing dimensions are shown in inches.

②Two and 3-pole breakers are the same physical size. Current carrying parts are omitted from the center pole in 2-pole breakers.

I-T-E Pressure Wire Connectors

⚠ DANGER

Hazardous Voltage. Will cause death or severe injury.

Turn power off supplying switchboard or panel before installing.

⚠ SAFETY INSTRUCTIONS

A. Place terminal connector body (**1**) (Figure 1) into terminal cavities (**2**) (Figure 2).

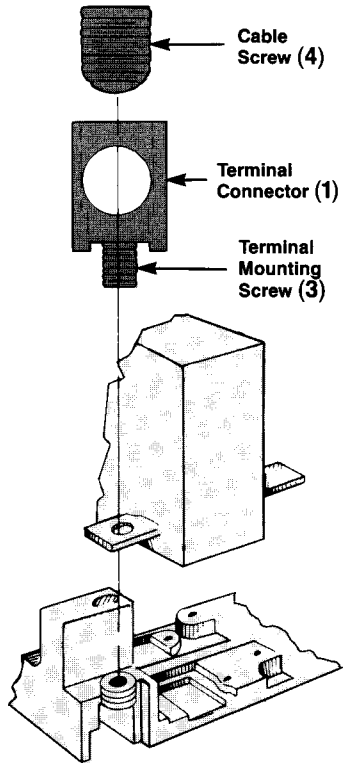
B. Torque terminal mounting screw (**3**) to specified torque value.

C. Place cable set screw (**4**) into threaded body opening. After cable has been inserted into cable cavity, torque cable set screw to specified value.

Solderless Connector Torque Values

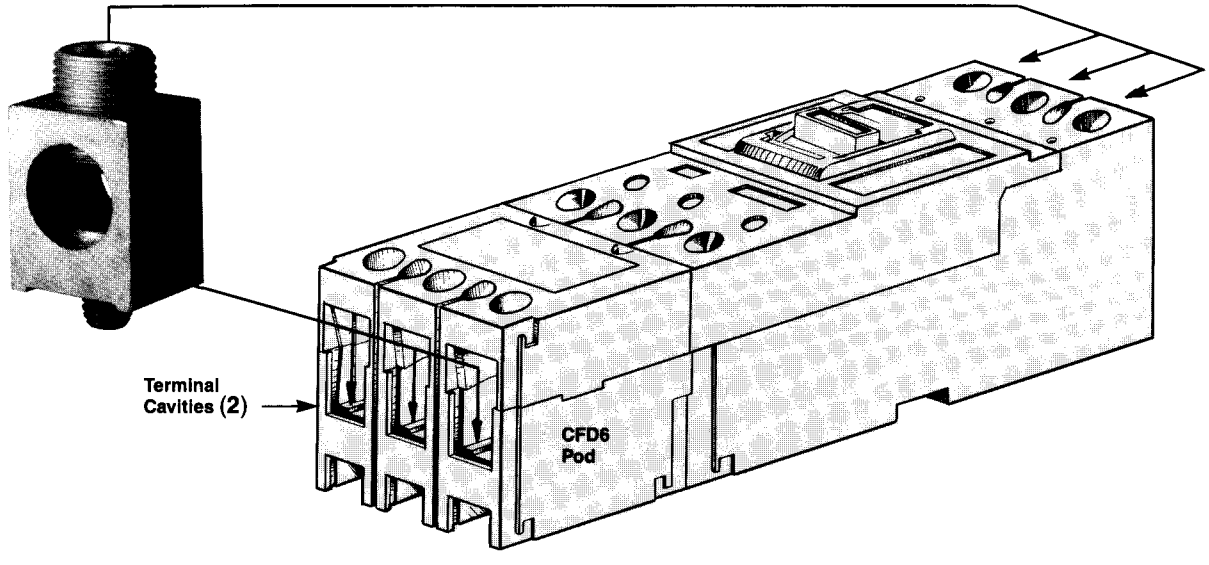
Catalog Number	Terminal Screw Torque	Cable Screw Torque	Cable Range
TA1F 350	175 in. lb.	375 in. lb.	#6-350 kcmil Cu #4-350 kcmil Al
TC1F 350	175 in. lb.	375 in. lb.	#6-350 kcmil Cu
TA1FD 350	①	①	#6-350 kcmil Cu #4-350 kcmil Al
TC1FD 350	①	①	#6-350 kcmil Cu

① Consult instructions supplied with connector body.



Terminal Connector Assembly

Figure 1



Circuit Breaker Terminal Cavities

Figure 2

I-T-E Shunt Trip and Undervoltage Trip

Electrical Check

Shunt Trip

A. Reset and turn circuit breaker ON.

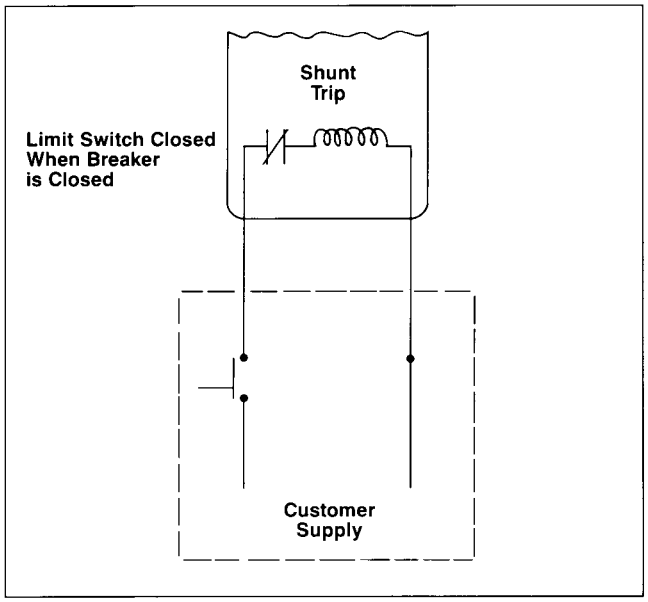
B. Attach test circuit to accessory leads. When the test voltage reaches 55 percent or more of the rated coil voltage, the circuit breaker should trip.

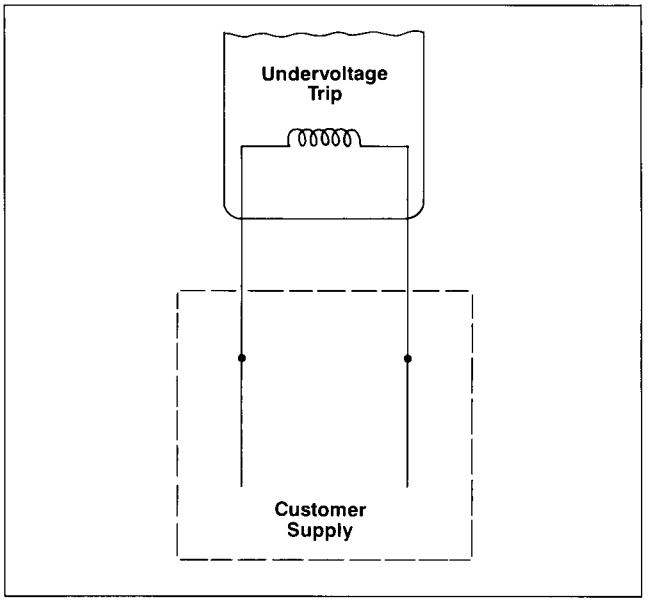
C. With breaker TRIPPED or OFF, check to make sure coil circuit has opened.

Undervoltage Trip

A. With breaker in TRIPPED position, connect test circuit to accessory leads. Energize undervoltage trip device at 85 percent of the marked rated voltage of the coil. Reset and turn breaker handle ON.

B. Reduce voltage to 35 percent of rated coil voltage. Circuit breaker must trip. (Undervoltage device must trip between 70 and 35 percent of rated voltage.)





Electrical Data For Shunt Trip

Coil Voltage	Inrush Current At Rated Voltage (Amperes)		Catalog Number
60 Cycles AC	UL (60 Hz)	IEC 947-2 (50 Hz)	
12	3.9	4.6	S19FD60
24	1.2	2.0	S17FD60
48	.8	1.0	S18FD60
120	0.395	.462/.577	S01FD60
208	0.265	—	S02FD60
240	0.165	.206/.237	S03FD60
277	0.190	—	S15FD60
480	0.145	.123/.187	S04FD60
600	0.080	—	S06FD60
DC			
12	—	4.3	S16FD60
24	2.2	2.2	S07FD60
48	1.2	1.2	S09FD60
125	0.5	.57/.66	S11FD60
250	0.35	.39/.45	S13FD60

Electrical Data For Undervoltage (UV) Trip①②

Coil Voltage	Sealed-In Current At Rated Voltage (Amperes)	Catalog Number	
		1 UV Trip Plus 1 Aux. Sw.	1 UV Trip Only
60 Cycles AC			
120	.03	W01FD64	U01FD60
208	.018	W02FD64	U02FD60
240	.016	W03FD64	U03FD60
277	.013	W16FD64	U16FD60
480	.008	W06FD64	U06FD60
600③	.008	W08FD64	U08FD60
DC			
24	.11	W13FD64	U13FD60
48	.06	W14FD64	U14FD60
125	.027	W10FD64	U10FD60
250④	.02	W12FD64	U12FD60

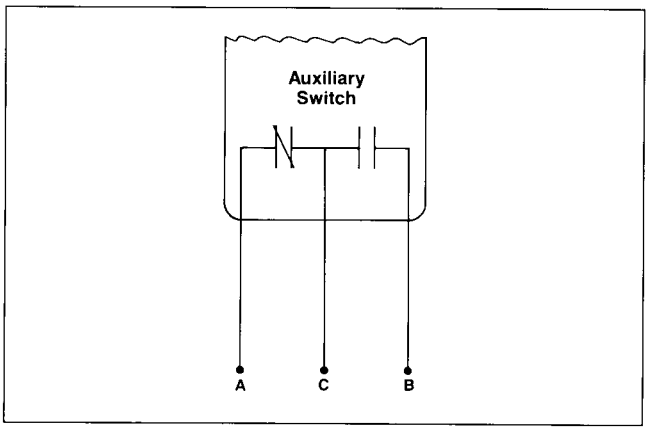
①Resistor to be mounted externally and connected by installer in series with undervoltage supply circuit.
②All auxiliary switch ratings are the same as auxiliary switch kit A01FD64.
③Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).
④Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

I-T-E Auxiliary Switch and Bell Alarm

Electrical Check

Auxiliary Switch Kits

Catalog Number	Number of Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		120	240	480	125	250
A01FD62	1	7.2	7.2	—	0.5	0.25
A02FD62	2	7.2	7.2	—	0.5	0.25
A01FD64	1	7.2	7.2	7.2	0.5	0.25
A02FD64	2	7.2	7.2	7.2	0.5	0.25



Switch Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C or C1	White	C - Common terminal
A or A1	Black	N.O. - Contact open when breaker is open, closed when breaker is closed.
B or B1	Red	N.C. - Contact closed when breaker is open, open when breaker is closed.

Accessory units that employ a combination will have the same wiring colors or identifiers. A double auxiliary switch combination will use wiring markings A-A1, B-B1 and C-C1.

Auxiliary Switch①

A. Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, indicator light or buzzer should operate.

B. Move handle to OFF position. Indicator light or buzzer should turn off.

C. Attach test to leads B and C. Light or buzzer should turn on.

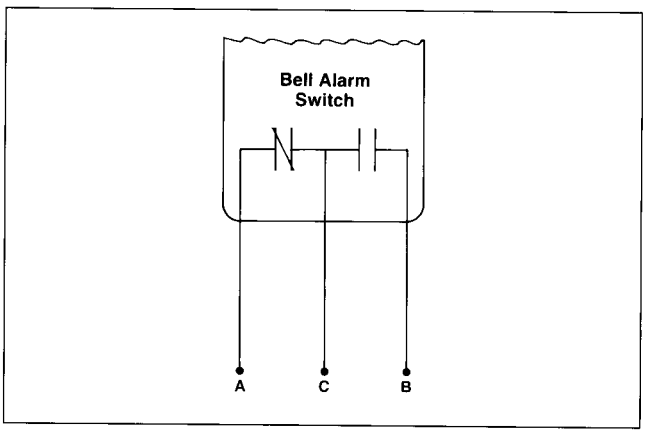
D. Repeat steps A through C using leads A1, B1 and C1.

E. Move handle to ON position. Indicator light or buzzer should turn off.

①Should the indicator not function properly during "check" procedure, check for incorrect installation or wiring.

Bell Alarm Switch Kits

Catalog Number	Number Of Auxiliary Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		125	250	480	125	250
B00FD64	0	7.2	7.2	7.2	0.50	0.25
C01FD64	1	7.2	7.2	7.2	0.50	0.25



Bell Alarm Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C	White	C - Common terminal
A	Yellow	N.C. - Normally closed contact (Closed when circuit breaker is tripped.)
B	Brown	N.O. - Normally open contact (Open when circuit breaker is tripped.)

Bell Alarm Switch①

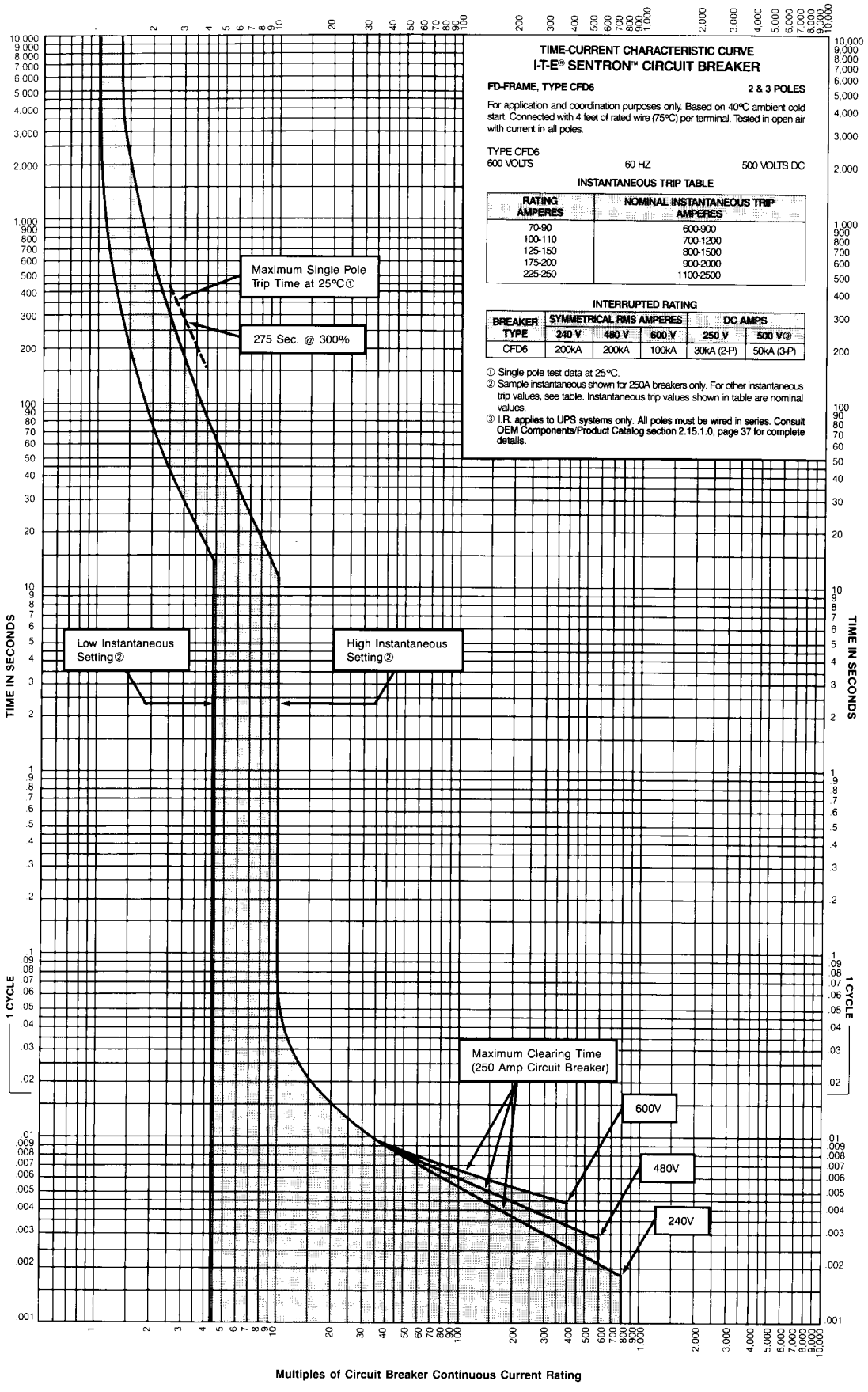
A. Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, trip breaker by depressing red PUSH TO TRIP button. Indicator light or buzzer should operate.

B. Reset breaker to OFF. Indicator light or buzzer should turn off.

C. Move breaker handle to ON. Indicator light or buzzer should remain off.

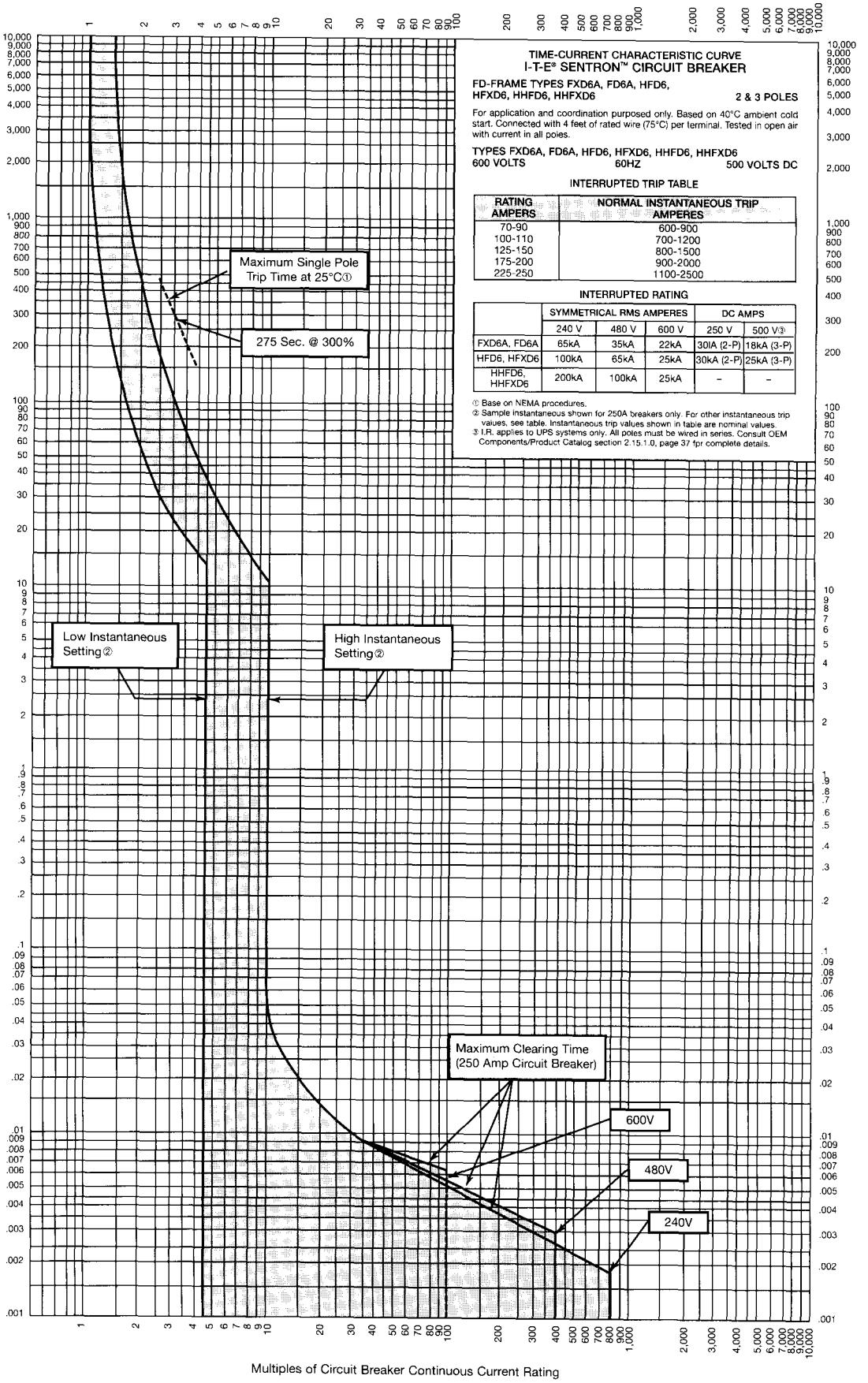
FD-Frame Time Current Curve

Type CFD6



FD-Frame Time Current Curve

Types FXD6A, FD6A, HFXD6, HFD6, HHFD6, HHFXD6A



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