

# SIEMENS

## I-T-E<sup>®</sup> Molded Case Circuit Breakers

FD-Frame  
Information and  
Instruction Guide



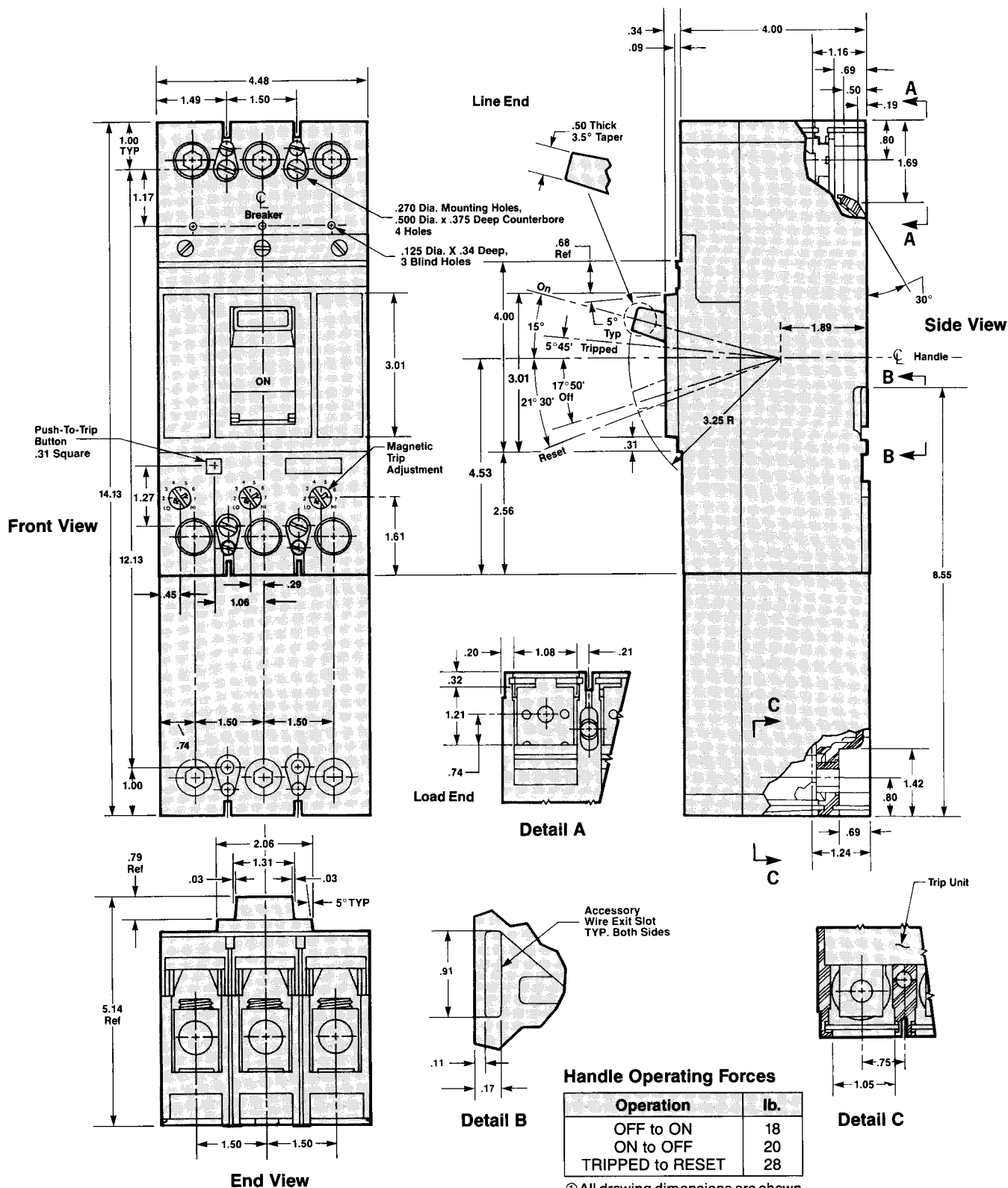






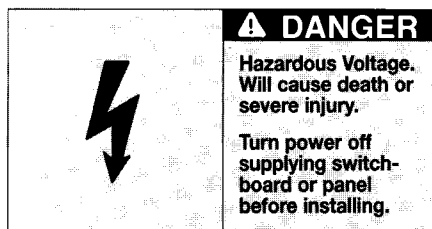
# I-T-E FD-Frame Outline Drawings<sup>①</sup>—2 and 3-Pole<sup>②</sup>

## Types CFD6, CFD6-ETI



① All drawing dimensions are shown in inches.  
 ② Two 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



## ⚠ SAFETY INSTRUCTIONS

- Place terminal connector body (1) (Figure 1) into terminal cavities (2) (Figure 2).
- Torque terminal mounting screw (3) to specified torque value.
- 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<br>#4-350 kcmil Al |
| TC1F 350       | 175 in. lb.           | 375 in. lb.        | #6-350 kcmil Cu                    |
| TA1FD 350      | ①                     | ①                  | #6-350 kcmil Cu<br>#4-350 kcmil Al |
| TC1FD 350      | ①                     | ①                  | #6-350 kcmil Cu                    |

① Consult instructions supplied with connector body.

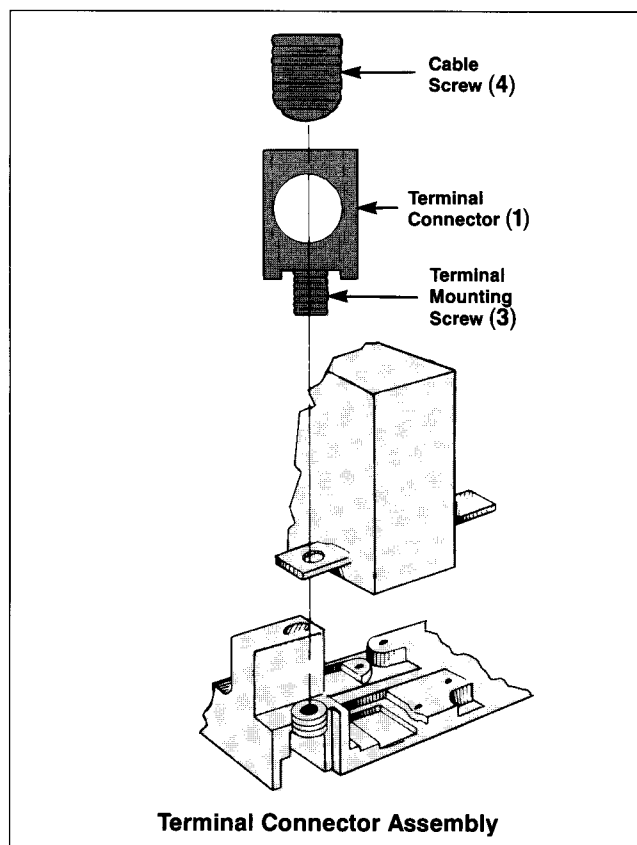


Figure 1

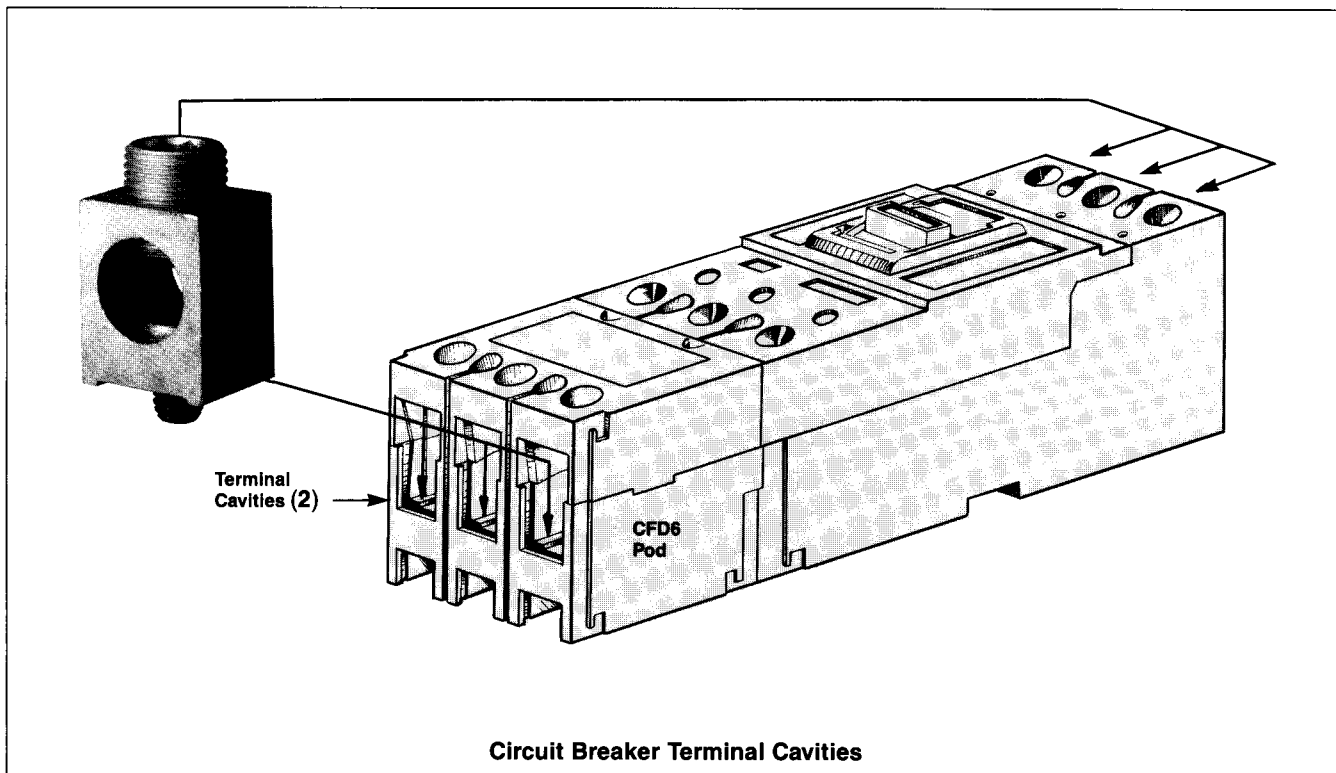


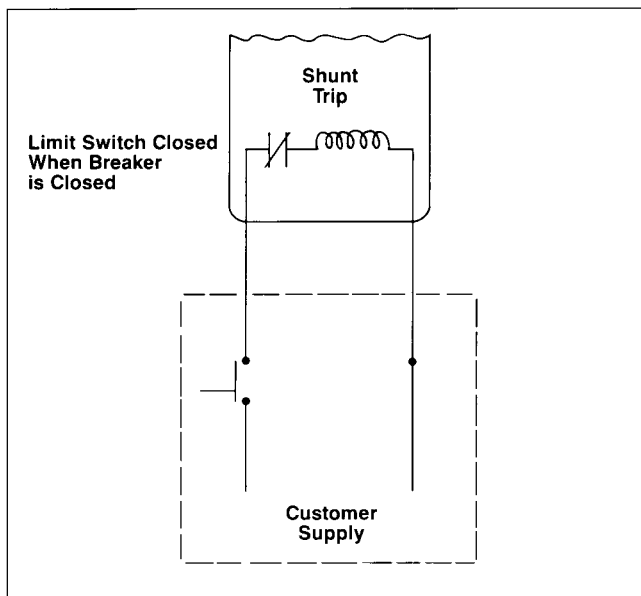
Figure 2

# I-T-E Shunt Trip and Undervoltage Trip

## Electrical Check

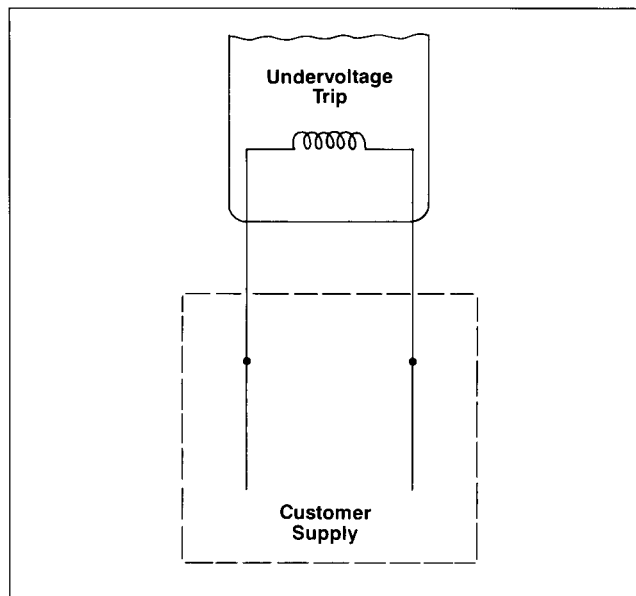
### Shunt Trip

- Reset and turn circuit breaker ON.
- 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.
- With breaker TRIPPED or OFF, check to make sure coil circuit has opened.



### Undervoltage Trip

- 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.
- 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) Trip<sup>① ②</sup>

| Coil<br>Voltage | Sealed-In Current<br>At Rated Voltage<br>(Amperes) | Catalog<br>Number               |                   |
|-----------------|----------------------------------------------------|---------------------------------|-------------------|
|                 |                                                    | 1 UV Trip<br>Plus<br>1 Aux. Sw. | 1 UV Trip<br>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           |

① Resistor to be mounted externally and connected by installer in series with undervoltage supply circuit.

② All auxiliary switch ratings are the same as auxiliary switch kit A01FD64.

③ Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

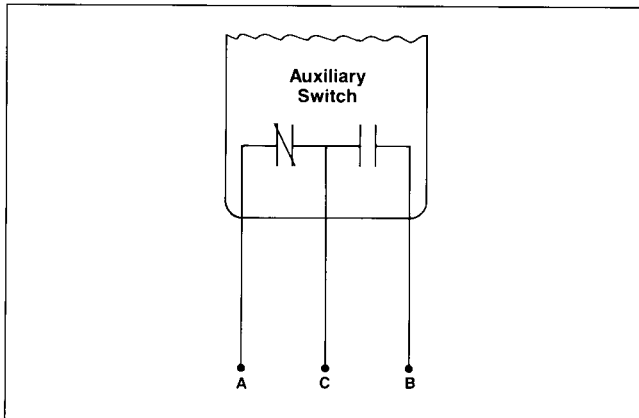
④ Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

# 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.

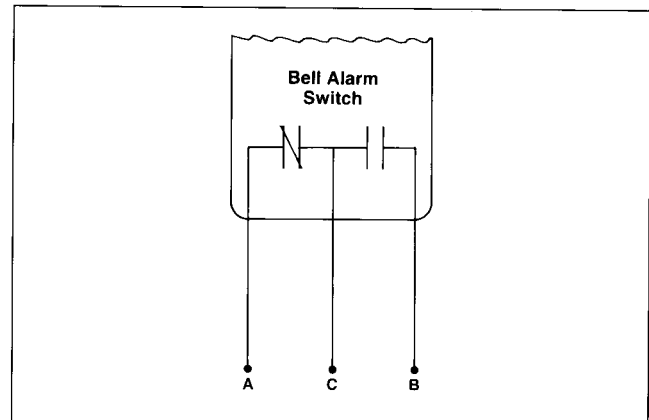
#### Auxiliary Switch<sup>①</sup>

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, indicator light or buzzer should operate.
- Move handle to OFF position. Indicator light or buzzer should turn off.
- Attach test to leads B and C. Light or buzzer should turn on.
- Repeat steps A through C using leads A1, B1 and C1.
- Move handle to ON position. Indicator light or buzzer should turn off.

<sup>①</sup>Should 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)

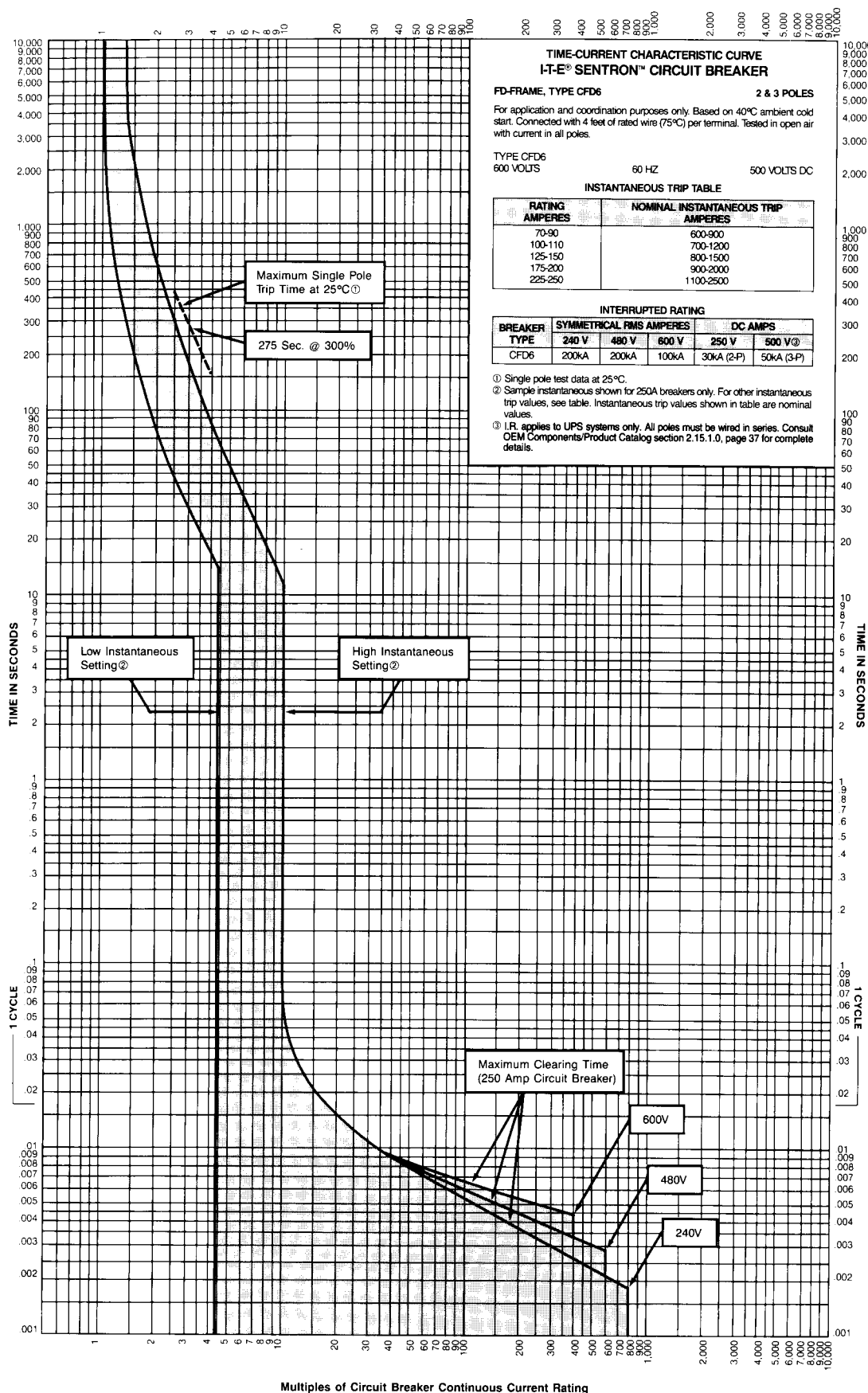
| Wire Markings | Wire Color | Switch Terminals or Contacts                                             |
|---------------|------------|--------------------------------------------------------------------------|
| C             | White      | C - Common terminal                                                      |
| 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 Switch<sup>①</sup>

- 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.
- Reset breaker to OFF. Indicator light or buzzer should turn off.
- Move breaker handle to ON. Indicator light or buzzer should remain off.

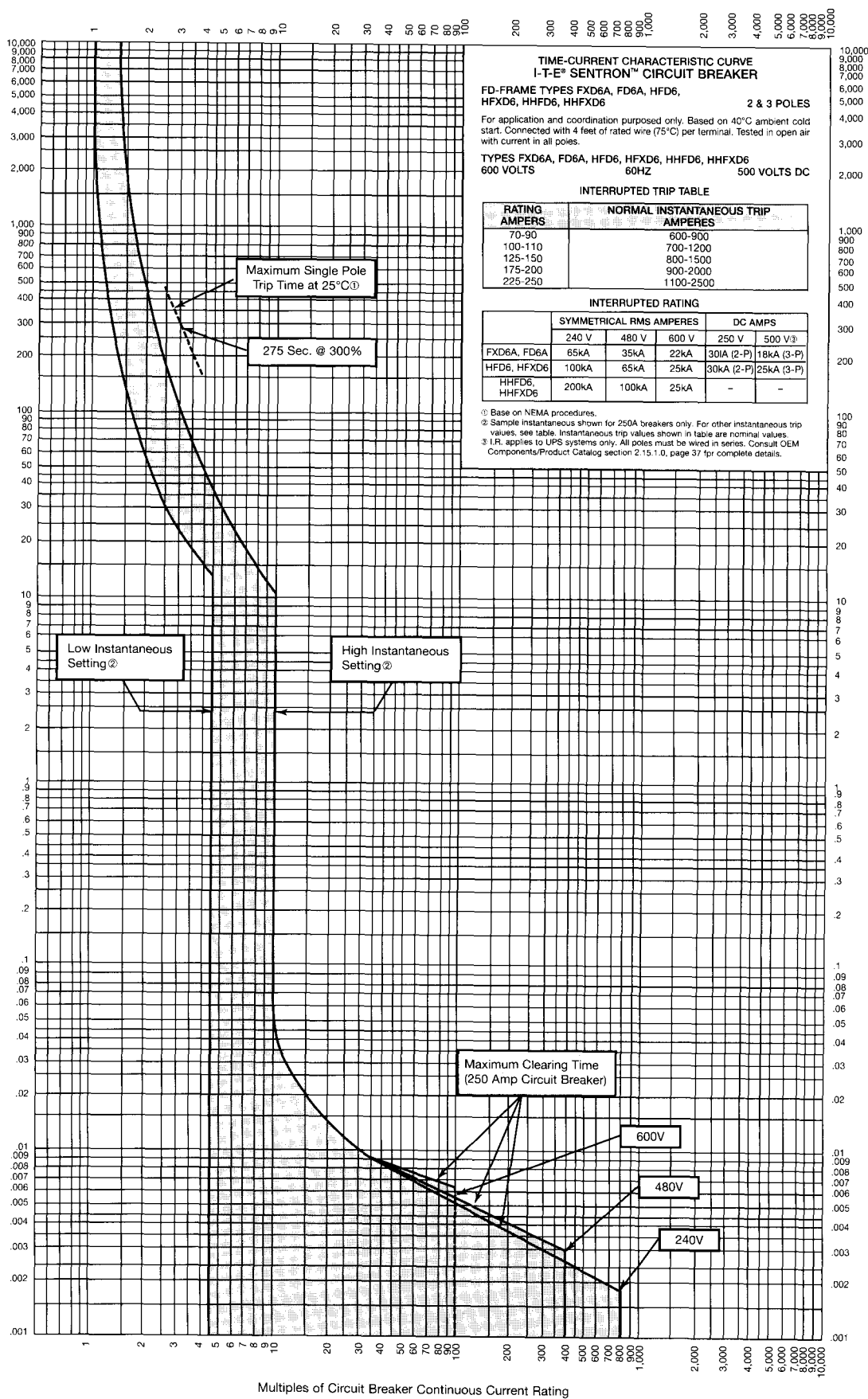
# FD-Frame Time Current Curve

## Type CFD6



# FD-Frame Time Current Curve

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



Siemens Energy & Automation, Inc.  
Power Distribution & Controls Division  
3333 Old Milton Parkway  
Alpharetta, GA 30005

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