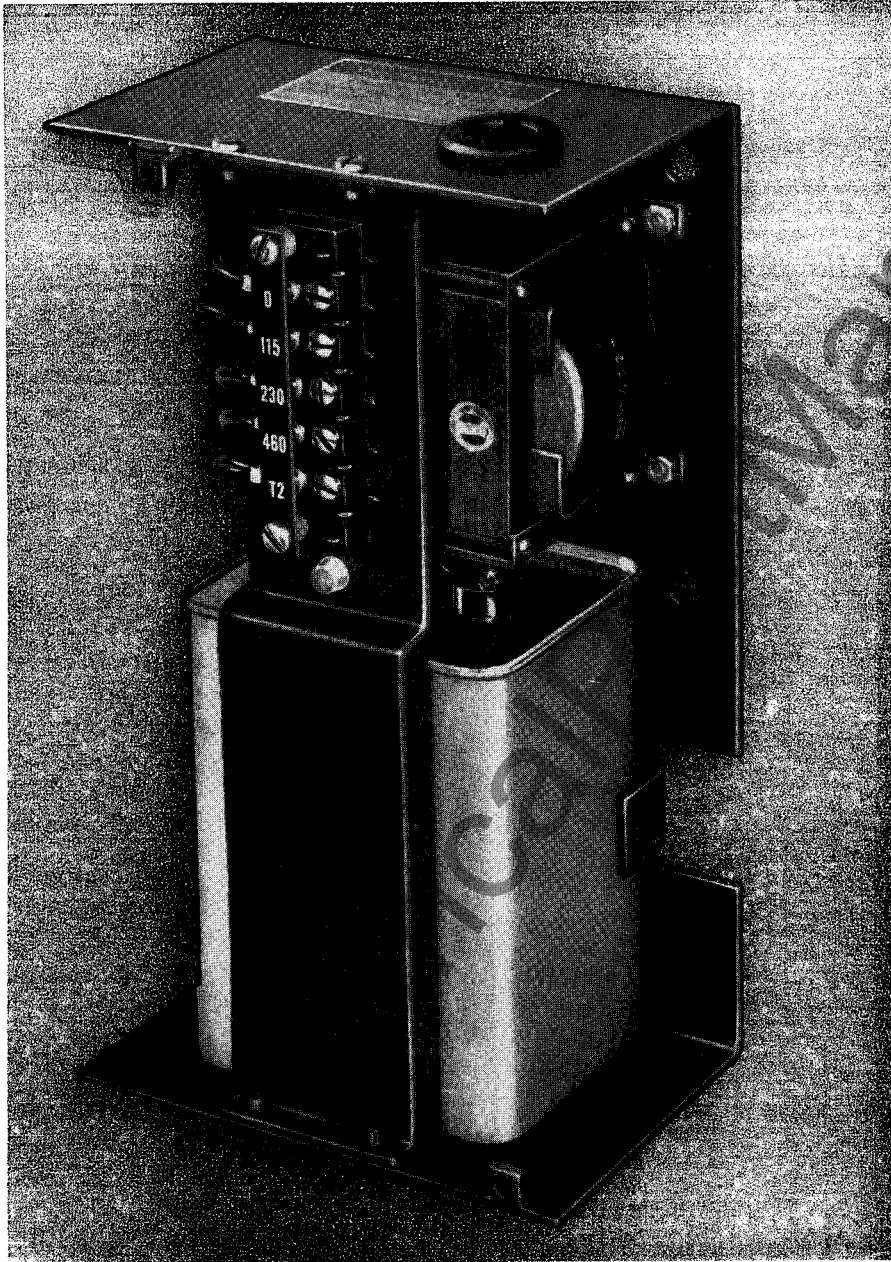


Westinghouse



Capacitor Trip Device

For Manually or Solenoid Operated Power Circuit Breakers



Application

The capacitor trip device is used for tripping circuit breakers from an ac voltage source by utilizing the stored energy in the capacitor for tripping energy.

Advantages

1. Low initial investment. The use of the capacitor trip device makes possible the

control of circuit breakers from an ac source and eliminates the need of a battery and charger.

2. Ideal for small untended substations. This self-contained device requires only periodic inspection.

3. Low maintenance cost. The battery and charger require the major portion of maintenance in the dc tripping circuit. By eliminat-

ing these items, the cost of maintenance is greatly reduced.

4. Suitable for reclosing duty. The charging time on this device is less than 4 cycles, thus lending itself perfectly to reclosing duty.

Operation

The tripping energy is obtained from a capacitor of suitable size which is charged by a half-wave, dry-type silicon rectifier, which in turn draws its energy from the secondary of a step-down transformer connected to the line side of the breaker. (This transformer can also be used for closing the breaker by means of a Rectox solenoid combination.)

The steady state volt-ampere burden imposed on the voltage transformer is approximately 1¼ volt-amperes. During charging of the capacitor the peak current will be approximately 18 amperes the first cycle after energizing.

The conventional current transformers are used for operating the relays but the size is independent of the tripping means and need be only of sufficient capacity to operate the relays. With low-energy relays it is therefore possible to trip at very low primary currents. When the relay operates, the capacitor discharges through the breaker shunt-trip coil, tripping the breaker.

The capacitor trip device requires a special trip coil, and in some cases requires a light (4 coil) trip attachment. Please refer to the Style Number Table on page 2.

The capacitor will hold sufficient charge to trip the breaker at least six seconds after charging potential is entirely removed, which is ample time for relays to operate under fault conditions. However, on most fault conditions some potential is available, and the device is so designed that 65 percent of normal potential will give the capacitor sufficient charge to trip the breaker at any time.

A low-energy glow lamp connected in parallel with the capacitor provides visual indication of the charge on the capacitor. When the supply is removed, the condenser will discharge in approximately 3 minutes to 90 volts. The glow lamp in series with the discharge resistance glows at any voltage above 90 volts.

When used with a circuit breaker on instantaneous reclosing duty, the capacitor will recharge during the interval when the contacts are open and provide energy for subsequent tripping.

March, 1970

Supersedes DB 33-353 dated September, 1966
E, D, C/1951/DB

Capacitor Trip Device

Style Numbers: Capacitor Trip Device and Attachments

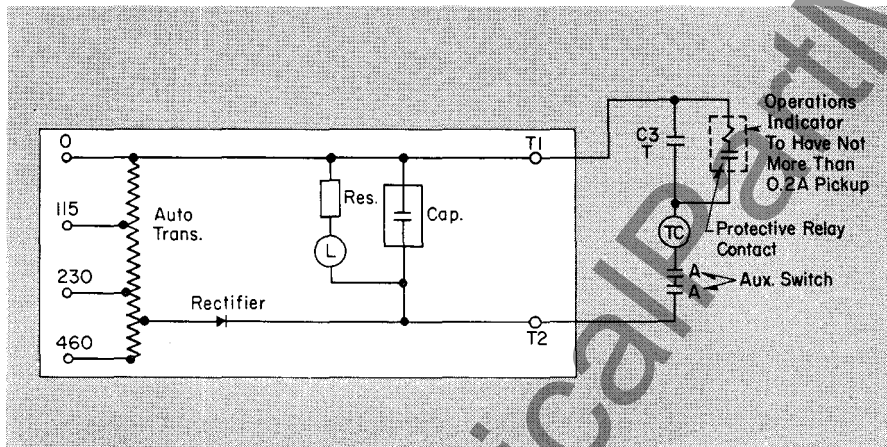
Description	Style Number
Capacitor trip device (115 to 460 V) ① with cover.....	382D719G04

Trip Attachments for Use With Capacitor Trip Device

Manually Operated	Style Number	Solenoid Operated	Style Number
MF, F-122, F-11	1043 278	MF, F-11, F-122, F-124, (SAF-2 Mech.)	1043 281
F-124-A, F-100		F-100, 138F150, 138-B250	
138-F-150	1043 283	138B500 (SA-3 Mech.) ②	1043 279
		144GC250, 144GC500, 230GC500 (SAH-4 Mech.)	203B538G02 Plus Coil 300870

- ① Can be applied on voltages 10% greater than top voltage ratings.
- ② These breakers must be equipped with the special light (4 coil) trip attachment.

Wiring Diagram for Typical Capacitor Tripping Circuit



Outline and Mounting Dimensions in Inches

