CAPACITOR TRIP DEVICE
Model CTD-4

Application: This device provides a source of energy for circuit breakers and switch trip coil operation during a loss of AC control voltage.

Operation: The capacitor is continuously charged when control power is available, providing energy for normal trip coil operation. Because mechanical relays are not involved, energy for the trip coil operation is immediately available with the loss of control power. When the control power returns, the capacitor automatically charges to supply energy for the next trip coil operation.

Nominal 120VAC, or 240VAC is applied between “INPUT” and “COMMON” terminals. This voltage is half wave rectified and applied across the trip capacitors, yielding an output trip voltage. The charge stored in these capacitors is available between “+” and “COMMON” terminals for the breaker trip coil operation. The half wave rectification circuitry provides the advantage of maintaining a common neutral connection from the input and output while still maintaining the charge in the capacitor after a loss of control power.

These devices are protected against inadvertent short circuits, input from line voltage surges and inductive kickback from trip coils.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>CTD-4-120</th>
<th>CTD-4-240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Input Voltage</td>
<td>120 VAC</td>
<td>240 VAC</td>
</tr>
<tr>
<td>Max. Input Voltage</td>
<td>140 VAC</td>
<td>280 VAC</td>
</tr>
<tr>
<td>Frequency</td>
<td>DC to 400Hz</td>
<td>DC to 400 Hz</td>
</tr>
<tr>
<td>Available Energy</td>
<td>64 joules</td>
<td>57 joules</td>
</tr>
<tr>
<td>Trip Capacitor fully charged at Normal Input Voltage</td>
<td>+/- 20% @ 25 Deg. C</td>
<td>+/- 20% @ 25 Deg. C</td>
</tr>
<tr>
<td>Normal Output Voltage</td>
<td>169 Volts DC</td>
<td>338 Volts DC</td>
</tr>
<tr>
<td>Approx. Charge Time to 90% @ 25C</td>
<td>1.4 Sec.</td>
<td>570mS</td>
</tr>
<tr>
<td>Capacitance</td>
<td>4500uF +/-20% @ 25 Deg C</td>
<td>990 uF +/-20% @ Deg C</td>
</tr>
<tr>
<td>Temp. Influence on Capacitor</td>
<td>-10% @ -30 Deg. C/+5% @ 60 Deg. C</td>
<td></td>
</tr>
<tr>
<td>Ambient Operating Temperature</td>
<td>-30 Deg. C to 60 Deg. C</td>
<td></td>
</tr>
<tr>
<td>Ambient Storage Temperature</td>
<td>-50 Deg. C to 80 Deg. C</td>
<td>Continuous</td>
</tr>
<tr>
<td>Short Circuit Protection</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>Vertical or Horizontal</td>
<td>MOV protected to 65 joules single pulse transient</td>
</tr>
<tr>
<td>Input Transient Protection</td>
<td></td>
<td></td>
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</table>

*FOR RoHS COMPLIANT PART, CONTACT SALES REPRESENTATIVE FOR AVAILABILITY*
CTD-4 DIMENSIONS

(4) OPEN SLOTS 0.16 X 0.31

4.40
3.94
3.19
3.75

4.19
2.15
1.03

TYPICAL CONNECTION DIAGRAM

INPUT LINE - 120 OR 240 VAC

INPUT LINE COMMON

+ OUTPUT

COMMON(-OUT)

CTD SCHEMATIC

AC INPUT (TERMINAL 1)

TDR

D1

MOV 1

INPUT

COMMON (TERMINAL 2)

NOTE:

+ C1

+ C2

+ C3

OUTPUT

COMMON (TERMINAL 12)

(SEE NOTE)

D2

(TERMINAL 7)