

# Amptector Tester Instruction Leaflet



I.L. 33-791-B

**CAUTION:** DO NOT TEST AMPTECTOR WHILE BREAKER IS CARRYING CURRENT.

## 1. PRELIMINARY TESTS

Banana plug assembly (11 circuit) not connected to Amptector, timer switch off, short delay switch in operative position, Hi-Low switch in Lo. Plug tester into 115 volt \*50/60 60 Hertz source. Turn power switch on, power pilot lamp should light (red) and reset pilot lamp should light (amber). If reset pilot lamp is not lit, push "Reset" button, reset pilot lamp (amber) should light. Turn timer switch on, timer should not run. Push "Test" button, test pilot lamp (red) should light, timer should operate counting seconds, and reset pilot lamp should go out. Operate "Stop" toggle switch (momentary), timer should stop, and test pilot lamp should go out. Push manual reset button on timer, timer should reset to zero. If any of the above checks do not work, operate "Stop" switch, and "Reset" switch and repeat check.

Banana plug assembly connected to an Amptector, timer switch off, short delay toggle switch in "Read Amps" position, Hi-Low switch in Lo, circuit selector set a "A". Amptector settings; Set long delay pickup at 1.0 (5 amps  $\pm 10\%$ ), long delay seconds at 36 (time at 6X (30 amperes)), short delay pickup at 10 and seconds at .50 if available. Instantaneous pickup at 12 and ground at .50 seconds.

Turn power ON, hold "Calib." (Momentary) toggle switch in operated position and turn "Current Adjust" knob slowly from zero to maximum. Ammeter should read from zero to approximately 8 amperes. Turn "Current Adjust" knob to zero and put Hi-Low switch in Hi position, hold "Calib." switch in operated position and turn "Current Adjust" knob from zero to maximum, ammeter should read from 0 to 75 amperes  $\pm 5$  amperes.

**CAUTION:** Amptector tester has a continuous rating of 30 amperes and currents above 30 amperes should be applied for short intervals.

Long delay pickup, set "Circuit Selector" to "A", Hi-Lo switch to Lo, push "Reset" button, push "Test" button, turn "Current Adjust" knob slowly until long delay pickup pilot lamp (clear) is lit. This lamp should light at 5 amperes  $\pm 10\%$  (long delay pickup of Amptector at 1.0). Lamp will go out when current is lowered below pickup.

Long delay time, set "Circuit Selector" to "A", Hi-Lo switch to Hi, hold "Calib." switch in operated position and turn "Current Adjust" knob until ammeter reads 30. Release "Calib." switch, press "Reset" button, Amptector long delay set for 36 seconds, turn timer on, push "Test" button, check current to see that it stays at 30 amperes. Amptector should turn off timer and current ("Test" pilot lamp should go out) between 24 to 36 seconds. Push "Reset" button, "Reset" pilot lamp should go on. Push manual reset button on timer, timer should reset to zero.

\*Tester can be used on 50 Hz but timer reading must be multiplied by 6/5, and dials for short delay and inst. pickup are blocked at 10X.

## 2. DETAIL TESTS

Time values on Amptector dials are TOP of the band – hence expect shorter times when testing.

(A) Pick-up values are mid-band which has  $\pm 10\%$  tolerance:

Long Delay	Pick-up Limits	Short Delay & Instantaneous	Pick-up Limits
.5 = 2.5 amp	2.25 to 2.75	4X = 20 amp	18 to 22
.6 = 3.0	2.7 to 3.0	5X = 25	22.5 to 27.5
.7 = 3.5	3.15 to 3.85	6X = 30	27 to 33
.8 = 4.0	3.6 to 4.4	7X = 35	31.5 to 38.5
.9 = 4.5	4.05 to 4.95	8X = 40	36 to 44
1.0 = 5	4.5 to 5.5	10X = 50	45 to 55
1.25 = 6.25	5.6 to 6.9	12X = 60	54 to 66

(B) To Check Long Delay Pick-up (Switch to Lo, Turn Timer OFF)

1. Push "RESET" and then "TEST".
2. Slowly increase current until Long Delay neon lamp (clear) glows steadily indicating Amptector pick-up.
3. Use "STOP" switch to cut off current.

(C) To Check Long Delay Time (Set 30 amp. (6X) with "Calibrate" Switch)

1. Push "RESET" and turn Timer ON.
2. Push "TEST" – Test Kit will stop when Amptector fires the output. Timer should read less than dial setting but not under 2/3 of the setting; i.e. if set at 24 it should be more than 16 seconds.
3. Any other multiple of sensor may be checked if desired – see curve for time values to be expected.

(D) To Check Instantaneous (Turn Timer OFF)

1. (Set Long Delay to max.-in order not to have long delay take you out too fast.)
2. (If Short Delay is in Amptector set short Delay switch to "Read Amps".)
3. Push "Reset" then "Test" and increase current steadily but rather rapidly until relay "clicks" off in Test Kit. (If current is preset to about 3/4 of setting, using calibrate switch, the final setting can be approached slower for better accuracy.)
4. Reset – Hold INST switch in "Read" position – push "TEST" button and read current.

**CAUTION:** If relay does not cut off current when INST is released; use stop switch to remove current.

**(E) To Check Short Delay Pick-up (Set Instant. to Max. 12X)**

1. Place Short Delay switch in OPERATIVE position and proceed similar to Instantaneous above.
2. Switch to "Read Amps." to read ammeter.

**CAUTION:** Use STOP switch to cut off current.

**(F) To Check Short Delay Time**

1. Set Short Delay Pick-up dial @ 4X (20 amperes).
2. Set "Current Adjust" at 10X (50 amperes) with "Calibrate" switch.
3. Turn timer on and Short Delay switch to "Operative".
4. Push "Reset" and manual timer reset button then "Test" and timer will give an approximate reading of the delay.

**NOTE:** This timer is not accurate enough for close timing of short delay but it will show the difference between the three band calibrations.

**(G) 3 Phases:**

The selector switch permits checking to see if all Amprector phase inputs are operative. Since all feed into a common pick-up and timing circuit it is only necessary to determine on one of the above tests that all inputs will cause Amprector operation.

**(H) To Check Ground Pick-up**

1. Hold Ground Test momentary switch in down position during steps 2, 3 and 4.
2. Place "Current Adjust" knob @ zero.
3. Push "Reset" then "Test".
4. Turn "Current Adjust" till unit trips (from 1.0 to 1.2 amps).
5. For Amprectors with adjustable pick up see chart on top of amprector.

**(I) To Check Ground Time**

1. With Ground Test momentary switch and calibrate switch in down position, turn Current Adjust to read 2.5X (2.5 amperes).
2. Turn "Timer" on. (If timer is not at zero push manual reset button.)
3. Release "Calibrate" switch, continue to hold Ground Test switch down.
4. Same as F4.

**(J)** When checking out settings on an Amprector for use, the general procedure is to start with the high current settings and work down to the lowest current setting.

**(K)** Verify specific indicator works in conjunction with specific test being performed. In order for indicators to function the Amprector must have a DTA or a 30 ohm resistive load attached across OP-ON.