

## Protectowire Alarm Point Locator Model APL-90 Meter Adapter

### Description

The Protectowire Meter Adapter contains a signal conditioning circuit that converts a digital multimeter having a 200 millivolt (mV) scale to an ohmmeter and the digital display scaled to read a count of 1 for every foot (or meter) to be measured from the start of the Protectowire run to the overheated alarm point on the Protectowire. The max. length of unit measure (Feet or Meters) that can be read on this mV scale is 1999 feet or meters (disregarding decimal point at all times). For Protectowire cable runs greater than 1999 (feet only), switch to the 2Vdc scale and multiply digital display by X10.

The Meter Adapter Model APL-90 is housed in a high-impact plastic case which measures 3 3/4" x 2 1/2" x 1", weighs 4 ounces and is powered by (1) 9V NEDA Type 1604 battery with a life of approximately 100 hours. Red and Black 4 foot long test leads with insulated standard size alligator clips are provided. The unit is equipped with a standard size double banana plug spaced 3/4" apart. This plug provides the means to connect into a typical Digital Multimeter. A power ON/OFF slide switch and a power on L.E.D. indicator are also provided. On the opposite side of the power switch is a calibration check/ test slide switch. A programmable Micro Jumper located inside the adapter (see figure 5) is provided for selecting either Feet or Meters as the unit of measurement to be digitally displayed.

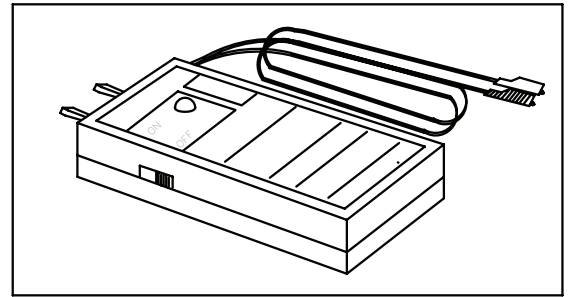


FIGURE 1 METER ADAPTER

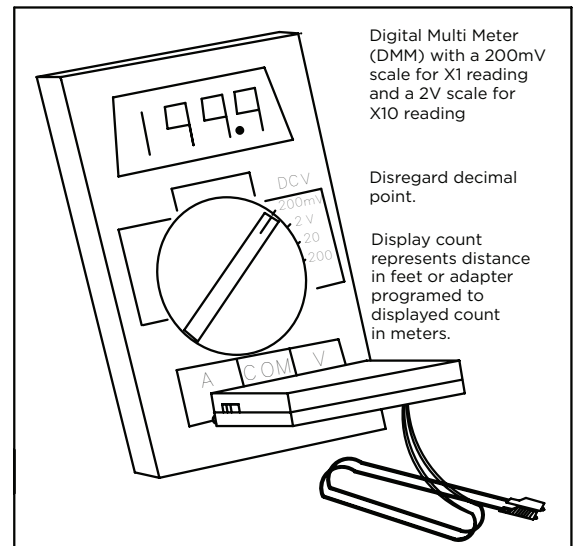


FIGURE 2 ADAPTER CONNECTED TO DIGITAL METER

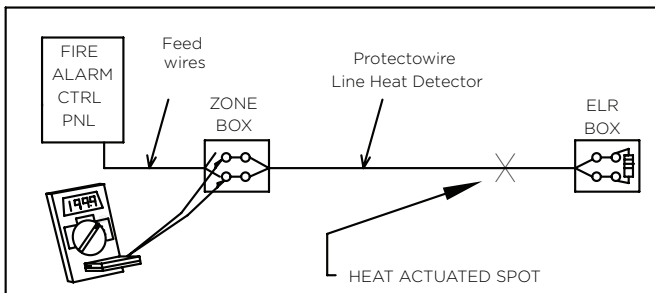


FIGURE 3 CLASS B DET. CKT. W/METER CONNECTED

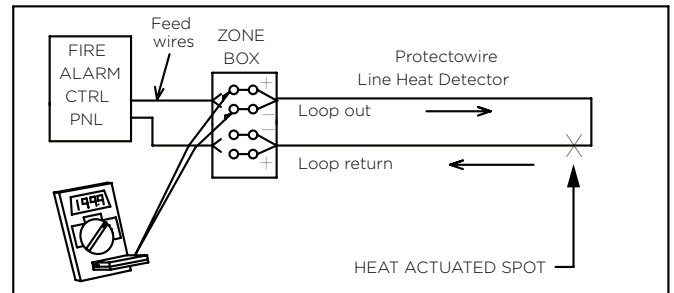


FIGURE 4 CLASS A DET. CKT. W/METER CONNECTED.

## How To Locate The Heat Actuated Point On Protectowire

If the initiating device circuit (IDC) is a two wire Class B (NFPA Style A) start at the ZONE BOX which is the beginning of the Protectowire run. Disconnect at least one side (wire) of the IDC (See figure 3). Connect test leads across the Protectowire side of the IDC. With the meter and adapter power on the meter will display the distance from the start of the Protectowire run to the actuated point. If the actuated point is beyond a cable run that is greater than 1999 feet, switch the meter to the 2Vdc scale and multiply the reading by X10.

If the IDC is a four wire Class A (NFPA Style D) start at ZONE BOX (see figure 4) mark and disconnect all for (4) wires. Connect the meter test leads across two wires going out. The meter will display location of the overheated point. Now connect the test leads across two returning wires. Meter will display a second reading. Summing the readings should result in the total length of the Protectowire. Either way, from the start of the run to the actuated point or from the return of the wire run to the actuated point, the location is at the same point on the Protectowire.

## Determining Protectowire Cable Run Per Zone

The actual length of Protectowire cable in an IDC zone can be determined basically the same way as finding the alarm point on the cable, as described in Para. 3.02. This is accomplished by placing a jumper across the end of the Protectowire run, this would be in the ELR BOX for the two wire Class B CKT (See Figure 3). For the Class A CKT place jumper across the two return loop wires in the ZONE BOX (See Figure 4). Connect the meter at the start of the Protectowire cable run, meter will display the total length of cable in that zone.

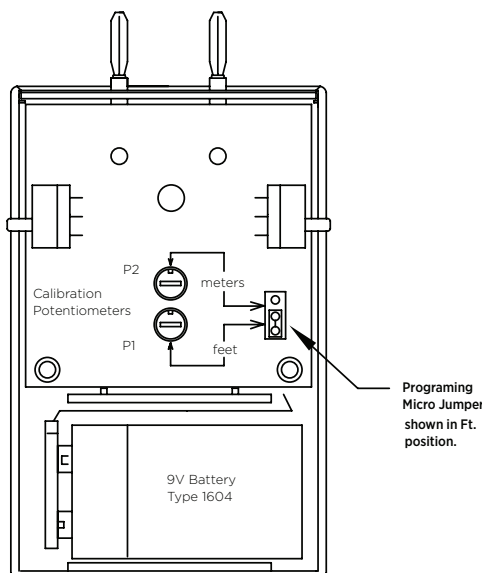


FIGURE 5 COVER REMOVED SHOWING PROGRAMING JUMPER AND CAL. POT.

## Calibration Check

The adapter is equipped with a calibration check/ test circuit. To check the accuracy of the adapter complete the following:

1. Plug adapter into multimeter.
2. Turn power switch on.
3. Turn calibration switch on, meter should read a count of 540 + or - 5 if adapter is programed to measure feet or a count of 164 + or - 3 if programed to measure meters.
4. If incorrect reading is obtained use the multimeter to test the 9V adapter battery before attempting to calibrate.

## Calibration Procedure

To calibrate the adapter complete the following:

1. Remove 2 screws from back of cover.
2. Remove top cover and slide front panel with P.C. module and battery out of bottom cover.
3. Plug adapter P.C. module into multimeter as would be done normally and turn on power and calibration switches.
4. If adapter is programed to measure in feet the selectable micro jumper will be in the position shown in figure 5.
5. To calibrate: Use a small screwdriver (1/8" blade or smaller) to adjust potentiometer P1 (See Figure 5) so the meter will display a count of 540 (feet).
6. If adapter is programed to measure meters adjust potentiometer P2 so the multimeter display a count of 164 (meters).

## Select Unit Of Measure

The adapter can be programed to measure the distance to the alarm point on the Protectowire in feet or in meters. To select the unit of measure complete the following.

1. Remove 2 screws from back cover and remove top cover.
2. Position Programing Micro Jumper for the type of unit of measurement required. (See Figure 5)
3. Check calibration. (Reference Para. 5)
4. Replace cover and screws. Take care when replacing screws not to over tighten.

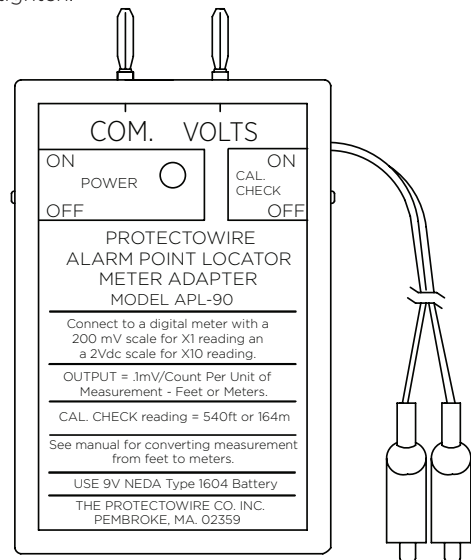


FIGURE 6 FRONT / LEGEND VIEW