



## **Operating Instructions**

### **AV40**

## **CTP – to – 40kV Audible-Visual**

### **CAUTION**

The equipment covered in these operating instructions should be used by qualified employees, trained in and familiar with the safety-related work practices, safety rules and other safety requirements associated with the use of this type of equipment. These instructions are not intended as a substitute for adequate training, nor do they cover all details or situations which could be encountered in relation to the operation of this type of equipment.

### **WARNING**

Use appropriate length live line tool for the voltages being worked and maintain minimum approach distances as outlined in OSHA 1910.269, Table R-6. Do not let live line tool fittings become grounded in any way. This will damage meter and may cause personal injury.

### **NOTICE**

Before operating this equipment, read, understand and follow all instructions contained in this manual. Keep instructions with equipment.

## Design and Function

The AV40 is a combination direct contact / non-contact voltage indicator with an audible and visual alarm to indicate the presence of voltage, with an operating range from capacitive test points / secondary voltage to 40kV (Line to Ground). Activation thresholds are 30% to 80% of voltage rating on selector switch, dependent on proximity to energized or grounded objects.

**Example:** 40kV position activation threshold is 12kV to 32kV.

A 12 position switch is used to select various functions and voltage levels as follows:

Position	Description
Off	Unit Off for Storage and Transit
CTP	Direct Contact to Capacitive Test Points
120V	Direct Contact to secondary voltages 120V – 600V
URD 7.2	Sensing voltage on 7.2kV URD transformers
URD 14.4	Sensing voltage on 14.4kV URD transformers
URD 20	Sensing voltage on 20kV URD transformers
OH 2.4	Sensing voltage on Overhead 2.4kV lines
OH 7.2	Sensing voltage on Overhead 7.2kV lines
OH 14.4	Sensing voltage on Overhead 14.4kV lines
OH 20	Sensing voltage on Overhead 20kV lines
OH 40	Sensing voltage on Overhead 40kV lines
Test	Test basic meter function by sounding horn and lights

**Note:** In the test position the voltage indicator should give a loud audible alarm and bright visual indication. If not, replace the 9 volt battery behind the live line tool attachment threaded into the meter housing.

Alarms and results will vary due to field condition including, but not limited to, conductor proximity, size and orientation of system components in the area, both energized and grounded. As with all voltage detector devices, a false positive can occur when both voltage indicator electrodes (probe tip and live line tool attachment) are at the same potential. The AV40 should be used as a secondary means to confirm the status of a circuit after standard operating procedures such as visual open gaps, hold orders and tag outs render the circuit de-energized. If there is any doubt about the audible-visual alarm under any circumstances, the line or equipment shall be considered energized and proper safety precautions shall be taken.

## Voltage Indication in the “CTP” Position

Designed for use as a direct contact voltage indicator for Elbows that feature Capacitive Test Points, it may also be used as a hand held contact voltage indicator on **insulated** secondary voltages below 600 volts. It will indicate the presence of secondary voltages between 120 volts and 600 volts.

1. Turn selector switch to the **Test** position to test voltage indicator for proper operation. See Note, page 2.
2. Turn the selector switch to the **CTP** position.
3. Attach voltage indicator to appropriate length live line tool for voltage being tested.
4. Make direct contact with the capacitive test point. Audible-visual alarm indicates presence of voltage
5. Turn selector switch to the **Test** position to re-test voltage indicator.

**Note:** Always test voltage indicator before and after each use.

**Caution:** In the **CTP** position the audible-visual alarm only indicates the presence of voltage but does not indicate the actual voltage present. To confirm the presence of nominal or induced voltage prior to installing grounds, re-test the line or equipment utilizing an all purpose utility meter such as a PD25 or PD50.

If there is any doubt about the voltage indicator alarms in the **CTP** position, the line or equipment shall be considered energized and appropriate safety precautions taken, i.e. confirm visual open gaps, tag outs, hold orders and sources of induced voltage.

## **Non Contact Voltage Indication URD & OH Positions**

1. Turn selector switch to **Test** position to test voltage indicator for proper operation, See Note, page 2.
2. Attach voltage indicator to appropriate length live line tool for voltage being tested.
3. Turn selector switch to appropriate voltage range.
4. For Overhead application bring the unit up to the OSHA minimum approach distance for the line voltage being detected. Audible-visual alarm indicates presence of voltage within the activation threshold and voltage range selected, See Chart, page 2.
5. For Underground application bring the unit up to the bushing insert on the transformer. Audible-visual alarm indicates presence of voltage within the activation threshold and voltage range selected, See Chart, page 2.
6. No audible-visual alarm indicates the voltage is below the threshold values for the selected position, See Chart, page 2.
7. Turn the selector switch to the **Test** position to re-test the voltage indicator.

**Note:** Always test voltage indicator before and after each use.

If there is any doubt about the audible-visual alarm, the line or equipment shall be considered energized and appropriate safety precautions taken, i.e. confirm visual open gaps, tag outs, hold orders and sources of induced voltage. To confirm the presence of nominal or induced voltage prior to installing grounds, re-test the line or equipment utilizing an all purpose utility meter such as a PD25 or PD50.

**Bierer & Associates Inc.**  
Manufacturing & Repair  
11142 Wilson Blvd.  
Blythewood SC 29016  
Tel: (803) 786-4839

Fax: (803) 786-5457  
**BiererMeters.com**