Bierer METERS

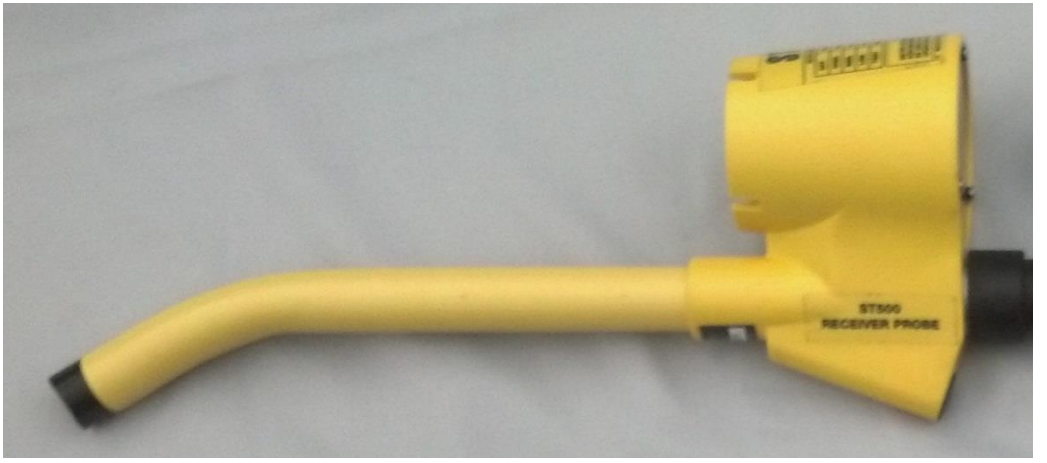
Safety is number one.

Manufacturing & Service: Bierer & Associates Inc. Patent No. 6,885,180

Operating Instructions

STRCV-CT
SERVICE TESTER
RECEIVER

MADE IN USA



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Limitation of Warranty and Liability

Bierer & Associates Inc. warrants this product to be free from defects in workmanship and material, under normal use and service conditions for a period of one year from date of shipment.

Due to continuous product improvement and development, Bierer & Associates Inc. reserves the right to modify product designs and specifications without notice.

It is impossible to eliminate all risks associated with the use of high voltage electrical devices including this device. Risks of serious injury or death are inherent in working around energized electrical systems. Such risks include but are not limited to variations of electrical systems and equipment, manner of use or applications, weather and environmental conditions, operator mentality, and other unknown factors that are beyond the control of Bierer & Associates Inc.

Bierer & Associates Inc. do not express or imply to be an insurer of these risks, and by purchasing or using this product you **AGREE TO ACCEPT THESE RISKS.** IN NO EVENT SHALL Bierer & Associates Inc. BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

SAFETY MESSAGE DEFINITIONS per ANSI Z535

These instructions contain important safety messages to alert the user to potentially hazardous situations, how to avoid the hazard, and the consequences of failure to follow the instruction.

The safety alert symbol  identifies a safety message. The signal word following the symbol indicates:

 **DANGER** A hazardous situation which, if not avoided, **will** result in death or serious injury and equipment damage.

 **WARNING** A hazardous situation which, if not avoided, **could** result in death or serious injury and equipment damage.

 **CAUTION** A hazardous situation which, if not avoided, **could** result in minor or moderate injury and equipment damage.

NOTICE Important safety message relating to equipment damage only.

PRODUCT SAFETY INFORMATION

WARNING

1. STRCV Meter and tool adapters shall be considered **insulated for 600V or less**. Do not let copper end fittings come in contact with energized and/or grounded conductors at the same time. **The tool adapters, fittings, and handles shall not be used on any other devices.**
2. Use appropriate length live line tools for voltage being worked and maintain minimum approach distances as outlined in OSHA 1910.269, Table R-6.
3. Do not attach any part of this equipment to voltage exceeding 600 Volts Phase to Phase. The equipment shall be considered insulated for 600V or less and operational from 10V to 600V maximum.
4. This equipment should be used only 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.
5. These instructions are not intended as a substitute for adequate training, nor do they cover all details or situations which could be encountered when operating this type of equipment.
6. Before operating this equipment, read, understand and follow all instructions contained in this manual. Keep instructions with equipment.

WARNING

1. Prior to using any low/high voltage test equipment a careful inspection should be made to ensure the unit is free from any contaminants such as dirt, grease, etc. and that there are no apparent physical damages.
2. Always confirm internal battery voltage before and

DESIGN and FUNCTION

The STRCV has a sensor in the end of the bent probe that picks up the current signal originating from either the ST500, ST800, DCI-50, or DCI-100 and indicates the direction of that current pulse on the display via a left or right directional LED.

For identifying concentric neutral primary cables many times the STRCV needs to be more sensitive for applications including but not limited to:

1) Cables in Conduit
2) Network Applications
3) Long runs of cable (>1 mile)

The STRCV-CT incorporates a BNC connector so that a "wrap around CT" can be used rather than the sensor at the end of the bent probe.

STRCV Switch Positions

- OFF position - Unit Off for storage and transit.
- High - 300+ Amp position
- Medium- 50 – 300 Amps position
- Low- Less than 50 Amp position

"T" position tests internal battery voltage and display function.

BATTERY REPLACEMENT

STRCV - The threaded live line tool fitting on the face of the meter probe is furnished with two flat edges for use with a wrench or slip joint pliers to remove and install the fitting from the meter housing. To remove, turn the live line tool fitting in a counterclockwise direction and install in a clockwise direction. Standard 9V battery is used.

STRCV METER SET-UP and TESTING

⚠WARNING

- see “Product Safety Information”, page 3.
- see “Inspection & Maintenance”, page 3.

1. Turn STRCV meter on and test basic meter functions by turning the function selector switch to the **“T"** position. If the battery voltage is good the unit will beep and indicate all three lights in a sequence. If the battery voltage is not good, two yellow lights and the horn will continuously beep. Always test meter before and after each use.

2. Install the corresponding test equipment to be used with the STRCV unit according to the instructions included with that piece of equipment.

3. When complete, turn the switch to the OFF position and return the STRCV to it’s appropriate storage location.

TESTING ON KNOWN VOLTAGE WITH ST800

3. Testing the ST800 on known voltage:

- Attach alligator clips to 120V source.
- Press down“OFF/ON” button to turn the unit on.
- Notice the voltage reading +/- 2 counts
- Press down “V/I” button to switch to current readings, notice the green light flashing and the numbers steadily increasing on the display.

3. Testing the STRCV while the ST800 is operating.

- Turn the unit to the “low” current position (most sensitive).
- Find the voltage/neutral wire using the probe end
- The unit should sound the buzzer and indicate the pulse direction when you’ve found the wire(s) attached to the ST800.

NOTICE Attaching the ST800 to a source with a breaker in the loop could result in tripping the breaker if it is not rated for 60A or greater.

Testing URD / Overhead Service Conductors w/ST800

WARNING – see "Meter Set-Up & Testing", page 5.

1. Pull Meter or open cabinet.

2. Make sure ST800 is in the "OFF" position (button is up).

3. Attach alligator clips to either hot leg and neutral.

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test.

6. The LCD screen will display the voltage or applied current depending on the button position and alternately display the number of times it has pulsed (0,1,2,3……158 max)

Cont…

7. After a few minutes, the ST800 will either have reached 800A or the maximum ampacity of the circuit. The pulse count indicates the strength of the service; the lower the number the stronger the service. Long spans of small wire (>175ft) will very likely not push 800A so the pulse count will go to 158.

8. With only 3 possible connections, the user can quickly determine the bad conductor in the circuit by seeing the difference between the pulse count and/or the maximum current potential.

CAUTION - Before attaching the ST800 to any voltage, make sure the unit is in the "OFF" position.

Testing Overhead Service Connectors w/ST800

WARNING – see "Meter Set-Up & Testing", page 5.

1. Pull Meter or open cabinet.

2. Make sure ST800 is in the "OFF" position (button is up).

3. Attach alligator clips to either hot leg and the neutral.

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test

6. The LCD screen will display the voltage or applied current depending on the button position.

7. After a couple minutes, the ST800 will either have reached 800A or the maximum ampacity of the circuit. The pulse count indicates the strength of the service; the lower the number the stronger the service. Long spans of small wire (>175ft) will very likely not push 800A so the pulse count will go to 158. If connections are bad, the current will not be able to steadily increase and you will start to see fluctuating current levels. When this occurs it is very likely that the connectors will begin to "pop" and the operator will be able to quickly identify the bad connection.

8. With only 3 possible connections, the user can quickly determine the bad conductor in the circuit.

9. Once the operation is complete, turn off the units and return the equipment to the appropriate storage container.

Identify Pedestal / Transformer Conductors from Meter Base

WARNING – see "Meter Set-Up & Testing", page 5.

1. Pull Meter or open cabinet.

2. Make sure ST800 is in the "OFF" position (button is up).

3. Attach alligator clips to either hot leg and neutral.

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test

6. The LCD screen will display the voltage or applied current depending on the button position.

7. After a few minutes, the ST800 will indicate the maximum ampacity of the circuit and the number of pulses it took to achieve the ampacity. The pulse count is not needed for identifying conductors.

8. Turn the STRCV meter to the respective current setting that matches the displayed current reading on the ST800.

9. At the meter base, place the probe tip on each conductor such that the cable rests in the curved section of the tip. An audible tone and a directional light will come on when the tip of the probe is on the same conductor(s) as the ST800.

10. At the pedestal/transformer, place the probe tip on each conductor such that the cable rests in the curved section of the tip. An audible tone and a directional light will come on when the tip of the probe is on the same conductor(s) as the ST800.

Identify Pedestal / Transformer Conductors from Electrical Panel

WARNING – see "Meter Set-Up & Testing", page 5.

1. Locate outside/inside electrical panel to be used.

2. Make sure ST800 is in the "OFF" position (button is up).

3. Attach alligator clips to either hot let and neutral

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test

6. The LCD screen will display the voltage or applied current depending on the button position.

7. After a few minutes, the ST800 will indicate the maximum ampacity of the circuit and the number of pulses it took to achieve the ampacity. The pulse count is not needed for identifying conductors.

8. Turn the STRCV meter to the respective current setting that matches the displayed current reading on the ST800.

9. At the meter base, place the probe tip on each conductor such that the cable rests in the curved section of the tip. An audible tone and a directional light will come on when the tip of the probe is on the same conductor(s) as the ST800.

10. At the pedestal/transformer, place the probe tip on each conductor such that the cable rests in the curved section of the tip. An audible tone and a directional light will come on when the tip of the probe is on the same conductor(s) as the ST800.

Testing De-Energized URD Primary Cable for Dead

WARNING – see "Meter Set-Up & Testing", page 5.

1. Isolate URD cable on transformer end and leave grounded on other end using bushing ground (PN: GB215 for 15kV or GB225 for 25kV)

2. Test isolated cable for dead using approved voltage detection device.

3. Make sure ST800 is in the "OFF" position (button is up).

3. Using alligator clip cable, attach one end to secondary voltage and the other to center conductor of isolated cable using optional probe kit (PN: PBKIT).

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test

6. The LCD screen will display the voltage or applied current depending on the button position.

7. After a few minutes, the ST800 will indicate the maximum ampacity of the circuit and the number of pulses it took to achieve the ampacity. The pulse count is not needed for this function.

8. Turn the STRCV meter to the **LOW** current setting only.

9. At the transformer, place the probe tip on the outside jacket of the isolated cable such that the cable rests in the curved section of the tip. An audible tone and a directional light will come on, **note the direction of the light.**

10. At the midpoint, manhole, ditch, etc. place the probe tip on each outside jacket such that the cable rests in the curved section of the tip. An audible tone and the **same directional light** will come on when the tip of the probe is on the **same conductor** as the ST800. Other cables will have no light or the opposing directional light.

Testing IN/OUT Feed on Energized URD Primary Cable

WARNING – see "Meter Set-Up & Testing", page 5.

1. On a loop fed circuit, open the midpoint and go to the transformer where the feed needs to be identified.

2. Make sure ST800 is in the "OFF" position (button is up).

3. Attach one lead to X1 hot leg bushing and other lead to X3 hot leg bushing for single phase transformers. Attach neutral and hot leg for three phase transformers.

4. Turn unit on by pressing down the "OFF/ON" button on the right.

5. The unit will begin to blink a green light indicating it is performing the service conductor test
6. The LCD screen will display the voltage or applied current depending on the far left button position.
7. After a few minutes, the ST800 will indicate the maximum ampacity of the circuit and the number of pulses it took to achieve the ampacity. The pulse count is not needed for this function and the unit should always go to 800A unless the transformer is bad.
8. Turn the STRCV meter to the **LOW** current setting only.
9. At the transformer, place the probe tip on the twisted off concentric neutral of the cable so that it rests in the curved section of the tip. An audible tone and a directional light will come on (**note the direction of the light**) indicating the source cable that feeds that transformer
10. Every neutral cable upstream from that location with the same directional light indicates the source cable. The opposing directional light indicates the load cable at that location.

Note: When installing the ST800 on single phase transformers keep the unit and cables away from the primary or you will pick up a false signal on all cables due to the proximity of the leads emitting a high magnetic field.

WARNING – see “Meter Set-Up & Testing”, page 5.

Identifying De-energized primary conductors using –CT option

1. Plug in the CT to the BNC connector
2. At the install location wrap the CT around the cable under test
3. Note the arrow direction on the CT
4. Note the arrow direction on the STRCV
5. At the test location, wrap the CT around the cable so that the arrow direction is the same as step 2
6. Same directional arrow on the STRCV indicates the same cable the transmitter is attached. Opposite or no direction indicates a different cable.

PARTS & ACCESSORIES

PART NO.	DESCRIPTION
ST800	Service Tester
STRCV	Cable Identifier meter probe
10009CHM	10” handle for use with STRCV
STLASER	Infrared Pyrometer for OH connector testing
PA50AB	Nylon bag for kit
GB215 / GB225	Grounding Bushings for URD cable ends
PBKIT	Probe Kit for accessing center conductor

NOTES

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