

Operators Manual

True RMS Radio Ampstik

Radio Linked Multiple Reading Ammeter

Region One
Region Two
Region Three



Model 8-120
Sensor Transmitter Meter



Model 8-121
Receiver Display

Operators Manual

True RMS Radio Ampstik

Radio Linked Multiple Reading Ammeter

| Available Stock Codes: | | | |
|------------------------|----------------|-----------------|----------------|
| 8-120 50HZ | 8-120 60HZ | 8-120 50HZ (EU) | 8-120 50HZ 869 |
| 8-120 50HZ AUS | 8-120 60HZ 869 | 8-120 FRG | |
| 8-121 | 8-121 EURO | 8-121 AUS | 8-121 869 |
| 8-121 FRG | | | |

| Table of Contents | Page |
|--------------------------|-------------|
| Safety Information | 3 |
| Specifications | 4 |
| Temperature Applications | 5 |
| Operating Instructions | 6-7 |
| FCC Statements | 7 |
| High Voltage Operation | 8 |
| Battery Replacement | 8 |
| Cleaning | 8 |
| Warranty | 10 |
| Quality Assurance | Back Cover |



Safety Information

The True RMS Radio Ampstik is designed for use with a suitable universal hot stick. All precautions appropriate for the line voltage should be taken. The hot stick should be considered the sole voltage isolation device. For safety purposes the face plate, battery cover, chuck, and entire Radio Ampstik Transmitter should be considered to be at the same potential. Putting the face plate, battery cover, chuck, or other parts of the Radio Ampstik Transmitter within the air gap of adjacent phases or ground could cause a phase to phase or phase to ground fault.

Overview


The True RMS Radio Ampstik has been developed specifically for measurement of AC current in the electrical utility industry. The True RMS feature allows accurate measurement of current even when the nominal waveform is distorted or when harmonics are present. This may be the case with Y connected transformer neutral leads and distribution to many industrial customers using SCR controllers and other switching devices. This instrument can be used remotely with any hotstick and universal chuck adapter or can be hand held. The instrument has no moving parts and does not require clamping onto the wire. The case is water resistant and will withstand high physical impact. The following specifications apply:

DECLARATION OF CONFORMITY

| | |
|--------------------------------|---|
| TRADE NUMBER: | SensorLink Corporation |
| MODEL NUMBER: | 8-121 |
| COMPLIANCE TEST REPORT NUMBER: | B60123D1 |
| COMPLIANCE TEST REPORT DATE: | 10 February 2006 |
| RESPONSIBLE PART (IN USA): | SensorLink Corporation |
| ADDRESS: | 1360 Stonegate Way, Ferndale WA 98248 USA |
| TELEPHONE: | (360)595-1000 |

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the unit does cause harmful interference to radio or television reception, please refer to your user's manual for instruction on correcting the problem.

I the undersigned, hereby declare that the equipment specified above conforms to the above requirements.

| | | | |
|--------|----------------|------------|---|
| Place: | Whatcom County | Signature: |  |
| Date: | April 17, 2006 | Full Name: | Gary Hielkema |
| | | Position: | President |

Specifications

| | |
|------------------------|---|
| Kit Number | 6-120 (Includes 8-120 Sensor Transmitter & 8-121 Receiver Display) |
| Range of Operation | |
| Voltage | 0 - 69kV |
| Current | 1 - 5000A |
| Frequency | |
| 50Hz Calibrated | 47 to 53Hz |
| 60Hz Calibrated | 57 to 63Hz |
| Sensor Opening Width | 2.5 in, 6.35 cm |
| Resolution | |
| Amps 1 - 99.9A | 0.1A |
| Amps 100 - 50000A | 1A |
| Accuracy | ± 1% ± 2 Digits |
| Operation Controls | Single button operation |
| Mechanical | |
| Weight | |
| Operating Temperature | -4° to +140°F, -20° to +54° C |
| Storage Temperature | -140° to +158°F, -40°C to +70° C |
| Display | Five Digit Display |
| Type of Reading | Four Readings |
| Housing | Shock & Water resistant molded urethane |
| Hotstick Mounting | Universal Chuck Adapter (Hotstick not included) |
| Battery | 9 volt (1 ea in Transmitter & Receiver) |
| Battery Life | Five days continuous use |
| Indoor/Outdoor Use | |
| Relative Humidity | 90% non-condensing |
| Altitude | 3000 meters |
| Radio | |
| Frequency Region One | 869.85MHz |
| Frequency Region Two | 916.48MHz |
| Frequency Region Three | 916.48MHz |
| Power | 1 milliwatt |
| Range | 50 feet, 15.24 meters |

Low and High Temperature Applications

The Alkaline Battery limits the operation of the Radio Ampstik from -20°C (-4°F) to 54°C (129°F) By substituting a Lithium long-life battery the Radio Ampstik can operate from or-30°C (-22°F) to 60°C (140°F)

9 volt Lithium batteries are the same long-life batteries used in smoke detectors. They sell by the brand names UltraLife and Energizer.

Note:

Alkaline operating time reduced to 25% at -4° F or -20° C

Lithium operating time reduced to 75% at -4° F or -20° C

Operating Instructions

1 Turning on the Radio Ampstik

To take a measurement, both the Transmitter Sensor and the Receiver Display need to be powered on.

Turn on the Radio Ampstik Transmitter. Press and release the on/off/hold switch on the Radio Ampstik Transmitter. The LED on the Transmitter Sensor will flash, indicating that it is powered on.

Turn on the Ampstik/Voltstik Receiver. Press and release the on/off/hold switch on the Radio Ampstik Receiver. The receiver is designed to operate with both the Radio Ampstik as well as the Radio Voltstik. Choose the mode for the Radio Ampstik by pressing and releasing the button when the Ampstik mode is shown. The Receiver Display will display "noSiG" until the Transmitter Sensor communicates to it.



2 RUN Mode (Default Mode)

The reading continuously changes as the current changes

The unit is immediately in the RUN mode after powering on. To take measurements with the Radio Ampstik in the RUN mode, place the conductor between the two arms and observe the reading on the Receiver's display. For maximum accuracy, be sure that the conductor is below the notches on the arms. If the conductor cannot be placed below the notches, readings can be taken but the accuracy may be lessened.

3 To HOLD a Reading

Press and release the button when the desired reading is displayed. The Receiver will hold the reading in the display and store the reading in the Receiver's memory. After three seconds, the receiver will return to the RUN mode. The Receiver can hold up to four readings. All held readings will be stored in the Receiver's memory until they are erased, or until the receiver is powered off.

4 To review a HELD Reading

Press and hold the control switch on the Receiver Display and scroll until HELD appears on the display. The number of the reading that is being viewed will flash in the upper left corner of the display. To scroll to the next reading, press and release the control switch. Repeat this to scroll through all the readings.



Note: The display resolution changes on the following ranges:

| | |
|-------|-------------------------------------|
| XX.X | 0 - 99.9 Amps .1Amp resolution |
| X,XXX | 100 to 5000 Amps 1Amp resolution |

5 ERASE Mode - Clearing the stored measurements

You must first go to the ERASE mode to clear the stored readings before taking further readings. Press and hold the control switch on the Receiver Display, the ERASE option will appear: release the control switch. After running the ERASE mode, all of the data will be cleared, and the Display will be in the RUN mode. The data will also clear when the OFF mode is selected. If the instrument has four readings in its memory and another attempt is made to take a reading, the display will show **"FULL"**.

6 Turning the instruments OFF

Receiver:

Press and hold the control switch on the Receiver Display and scroll to the OFF option. Release the control switch.

Sensor Transmitter:

Press and hold the control switch until the LED goes to solid RED. Release the control switch.

The Radio Ampstik Receiver Display will turn off automatically after 60 minutes of inactivity. The Radio Ampstik Transmitter will turn off automatically after 20 minutes of inactivity.

FCC and Industry Canada Statements

This device complies with Part 15 of the FCC Rules and Part 5.11 of IC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and,
- (2) This device must accept any interference, including interference that may cause undesired operation of the device .

Instructions to the User

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate equipment.

High Voltage Operation

This instrument is designed to operate in high voltage fields. However, difficulty may be experienced when excessive corona to the instrument occurs. This may occur when the line voltage is greater than 69 kV phase to phase. The unit may experience over range and require power to be cycled or may lose a reading when in the sample and hold mode.

Battery Replacement

The Radio Ampstik is powered by a two 9V batteries, one in each unit. When the "LO BAT" indication shows on the Receiver Display, the batteries in both the Receiver Display and the Transmitter Sensor should be replaced. They will continue to operate for a few hours.

Transmitter Sensor: Remove the four screws on the battery cover at the rear of the unit. Carefully insert a screwdriver blade in the notch and pry the cover out, being careful not to damage the cover seal. Pull the battery out of the compartment and separate the battery from the battery connector. To avoid breaking the battery leads do not pull on the battery only. Install a fresh battery and reinsert the battery in its compartment. Reinstall the cover by gently pressing it into place while pulling out on the edges of the compartment, and reinstall the four cover screws. Take care to avoid over tightening the screws. Always reuse the screws provided and do not damage or lose the o-ring seal on each screw.

Receiver Display: *DO NOT unscrew the four screws on the corners of the front panel.* Loosen the thumb screw, located on the front middle of the unit. Remove the old battery. Snap the fresh battery to the connector and insert into the battery slot. Replace the cover plate. Be sure the antenna fits into the hole in the rear of the case. Tighten the thumb screw.

Warning: Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

IF USING LITHIUM BATTERY: Replace battery with Energizer Model L522 OR Ultralife U9VL only. Use of another battery may present a risk of fire or explosion. Replacement batteries may be obtained from SensorLink, or elsewhere Energizer or Ultralife batteries are sold.

Cleaning

The Radio Ampstik can be cleaned by wiping with a small amount of alcohol on a rag.

Preventative Maintenance

- Unit should be inspected for cracks in the urethane. If cracks are present, unit should not be used.
- Ensure air vent on faceplate has not been covered (Note: The membrane on the inside of the faceplate is normal and designed to allow unit to breath properly).

Transporting

- There are no special considerations for transporting the device.

SensorLink Corporation Warranty

SensorLink warrants each instrument it manufactures to be free from defects in materials and workmanship under normal use and service for the period of one year after date of shipment. Within this period, SensorLink agrees to repair or replace, at SensorLink's option, any instrument that fails to perform as specified. This Warranty shall not apply to any instrument that has been:

- 1 Repaired, worked on, or altered, including removal of the front panel, by persons unauthorized by SensorLink in such a manner as to injure, in SensorLink's sole judgment, the performance, stability, or reliability of the instrument;
- 2 Subjected to misuse, negligence, or accident; or
- 3 Connected, installed, adjusted, or used otherwise than in accordance with the instructions furnished by SensorLink.

This Warranty is in lieu of any other warranty, expressed or implied. SensorLink reserves the right to make any changes in the design or construction of its instruments at any time, without incurring any obligation to make any change whatever in units previously delivered.

If a failure occurs, contact the manufacturer for a Return Authorization and instructions for return shipment. This warranty constitutes the full understanding of the manufacturer and buyer, and no terms, conditions, understanding, or agreement purporting to modify or vary the terms hereof shall be binding unless hereafter made in writing and signed by an authorized official of SensorLink.

Quality Assurance Certification True RMS Radio Ammeter Models 8-120 and 8-121

SensorLink certifies that its calibration measurements are traceable to the National Institute of Standards and Technology (NIST), to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members.

This document certifies the following True RMS Radio Ammeter was tested at the SensorLink High Voltage Laboratory, Ferndale, WA, USA to the appropriate standard and comply with the requirements of that standard.

Transmitter; Model 8-120; Serial Number _____

Receiver; Model 8-121; Serial Number _____

I hereby certify that the True RMS Radio Ammeter listed above has passed all tests defined in the SensorLink standard . I also certify that I have reviewed the standard and test procedure and that they are sufficient in determining compliance with the standard.

Signed _____

Date _____

Form No: SALE-Manual Template RADIO AMP-009 REV: V01
Date: 11/19/2013
Manual Stock Code No: DOPM-812-001



SensorLink® Corporation

1360 Stonegate Way
Ferndale, WA 98248 USA
phone: 360/595.1000
fax: 360/595.1001
www.sensorlink.com