

Operators Manual

True RMS Radio Ampstik®

Radio Linked Multiple Reading
Ammeter

Region One
Region Two
Region Three



Radio Ampstik WJ



Radio Ampstik XT



Operators Manual








True RMS Radio Ampstik

Radio Linked Multiple Reading Ammeter

Available Stock Codes, Transmitter:			
8-122XT 50HZ	8-122XT 50HZ 868	8-122XT 60HZ	8-122XT 60HZ 868
8-122XT EU			
8-122WJ 50HZ	8-122WJ 50HZ 868	8-122WJ 60HZ	8-122WJ 60HZ 868
8-122WJ EU			
Available Stock Codes, Receiver:			
8-121RAV	8-121RAV EU	8-121RAV 868	

Table of Contents	Page
Safety Information	4
Theory of Operation	5
FCC Statements	6
Specifications	7
Radio Ampstik Operating Instructions	8-10
Backlight Function	11
Battery Replacement	12
High Voltage Operation	13
Temperature Applications	13
Troubleshooting the Radio Ampstik	14
Warranty	16-17
Quality Assurance	Back Cover

Safety Information

-  Read all safety and instruction statements before using the product. Failing to follow the safety guidelines can cause severe injury or death.
-  Radio Ampstiks are designed for use on live, overhead lines with 0 to 133KV. All procedures appropriate for the line voltage are to be taken, including proper work techniques, equipment, and Personal Protection Equipment.
-  The Radio Ampstik should be used by personnel who have been trained for live-line, high voltage work by their organization.
-  The Radio Ampstik is to be used with suitable line approach distances as stated in published OSHA regulations and/or provided by the utility.
-  The cover plate, chuck, and entire Radio Ampstik are to be considered at the same potential. Putting the cover plate, chuck, or other parts of the Radio Ampstik within the air gap of adjacent phases or ground could cause a phase to phase or phase to ground fault.
-  Do not force the arms of the Radio Ampstik Transmitter over any conductor.
-  Do not alter the product in any manner. Doing so will void the user's authority to operate the equipment.

Theory of Operation

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.

A key feature of this unit is the ability to display the current reading up to 50 feet from the sensor on the remote display. User's have the option to hold the receiver in their hands, mount it to a hot stick or hang it on the bucket. There are no moving parts and does not require clamping onto the wire. The housing is water resistant and will withstand high physical impact.



FCC and Canada Industry Statements

This device complies with Part 15 of the FCC Rules and contains license-exempt transmitter/receiver that comply with Innovation, Science and Economic Development Canada's license-exempt RSS.

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Declaration of Conformity

TRADE NUMBER:	SensorLink Corporation
MODEL NUMBER:	8-122WJ, 8-122XT
COMPLIANCE TEST REPORT NUMBER:	106048
COMPLIANCE TEST REPORT DATE:	05 April 2022
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: 01 May 2022	Full Name: Tenaya Tinsley
	Position: President

SPECIFICATIONS

Kit Number	6-122 XT Kit	6-122 WJ
	Includes 8-122XT Transmitter & 8-121RAV Receiver Display	Includes 8-122WJ Transmitter & 8-121RAV Receiver Display
Sensor Opening		
Opening Width	2.5 in, 6.35 cm	4 in, 10.16 cm
Weight		
Transmitter	1.8 lbs, 0.79 kg	2.5 lb, 1.13 kg
Receiver Display	1.4 lbs, 0.64 kg	1.4 lbs, 0.64 kg
Frequency	Actual frequency marked on unit	
50Hz Calibrated	47 to 53Hz	
60Hz Calibrated	57 to 63Hz	
Range of Operation		
Voltage Phase to Phase	0 - 133kV	
Current	0.5 - 5000A	
Current Flow	Amps In or Amps Out *Minimum 200V required for direction of current flow indication	
Resolution		
Amps 0.1 - 99.9A	.1A	
Amps 100 - 5000A	1A	
Accuracy	± 1% ± 2 Counts	
Mechanical		
Operations Controls	Single Button Operation	
Display	5 LCD Digit Display	
Backlight	Auto Ambient Light Sensor	
Type of Reading	Four Readings	
Housing	Fire resistant and waterproof polycarbonate & silicone	
Hot Stik Mounting	Universal Chuck Adaptor (Hot Stick not included)	
Battery	9 Volt (one each in Transmitter and Receiver)	
Battery Life	Five days continuous use	
Operating Temperature	-4° to +140 ° F (-20° to +54° C) Shipped with Alkaline battery. Lithium battery required for temperatures below -4° F (-20° C)	
Storage Temperature	-140° to +158 ° F (-40° to +70° C)	
Relative Humidity	90% non-condensing	
Altitude	3000 meters	
Radio		
Frequency Region One	868 MHz	
Frequency Region Two	915 MHz	
Frequency Region Three	915 MHz	
Power	1 milliwatt	
Range	50 feet, 15.24 Meters	

Radio Ampstik Operating Instructions

Step 1: Attach the unit to a hot stick with a universal chuck adapter.



Step 2: Power on the units. Both the Transmitter and the Receiver need to be powered on to take a measurement.

Turn on the Amp/Volt Receiver. Press and release the on/off/hold switch on the Receiver. The Receiver is designed to operate with both the Radio Ampstik and the Radio Voltstik. The Receiver will go through the startup mode and will automatically sense and connect to the Radio Ampstik Transmitter.

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.

STARTUP TEST

The Radio Ampstik conducts a startup test to verify the sensor and circuitry is functioning correctly. The following screens will display during the test:



If the test detects a failure, the display will display the word "PROBE" and a corresponding code, as per below. See page 13 for the failure code chart.



If the test determines the unit is functioning properly, it will move to RUN mode and is ready to take the first measurement. The display will show:



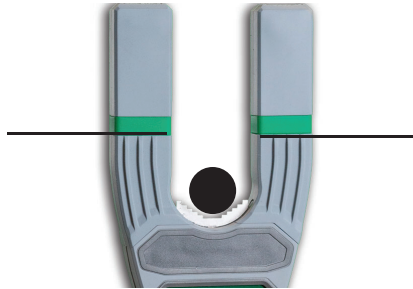
Step 3: Take Current and Direction of Flow Measurements

The unit continuously updates the display reading as line current changes.

The unit is immediately in RUN mode after powering on. To take measurements place the conductor between the two arms and observe the reading and direction of current flow indication on the Receiver's display.

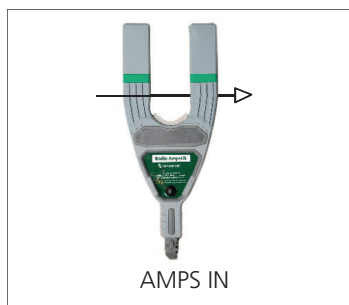
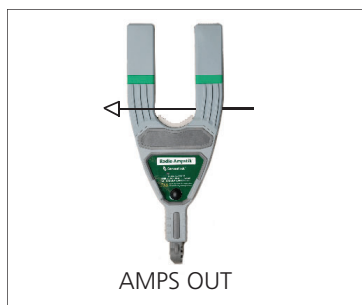


AMPERAGE READING: For maximum accuracy, be sure the conductor is below the green band on the arms for current measurements. If the conductor cannot be placed below this marker, readings can be taken but the accuracy may be lessened.



DIRECTION OF FLOW READING: Current flow means the direction of flow from the source to the load. For maximum accuracy, be sure the conductor is touching the metal contactor at the base of the unit's arms.

Amps IN indicates the direction of current is flowing from the source into the face of the Radio Ampstik Transmitter. Amps OUT indicates that the direction of current is flowing from the source out of the face of the Radio Ampstik Transmitter.



Step 4: Hold the Readings

Press and release the on/off/hold switch 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.

Step 5: Review held Readings

Press and hold the on/off/hold 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:



X.X

0 to 99.9 Amps
.1A Resolution

X,XXX

100 to 5000 Amps
1A Resolution

Step 6: Erase stored measurements

If the instrument has four readings in its memory and another attempt is made to take a reading, the display will show FULL and return to the RUN mode. Previously held readings must be cleared before taking any further readings.

Press and hold the on/off/hold switch on the Receiver Display, when the ERASE option appears, release the on/off/hold switch. After running the ERASE mode, all the data will be cleared, and the Receiver will return to the RUN mode. The data will also clear when the OFF mode is selected.

Step 7: Turning off the Radio Ampstik

Receiver Display: Press and hold the on/off/hold switch h on the Receiver and scroll to the OFF option. Release the on/off/hold switch. The Receiver will turn off automatically after 60 minutes of inactivity.

Radio Ampstik Transmitter: Press and hold the on/off/hold switch until the LED goes to solid RED. Release the on/off/hold switch. The Radio Ampstik Transmitter will turn off automatically after 20 minutes of inactivity.

Backlight Function

The backlight in the Receiver Display is designed to automatically power on when the ambient light is low. This helps users view the display in low-light situations. The light sensor is located on the front of the unit.

The user may see some flicker if the backlight is on when under artificial lighting. By default, the unit will start in Auto on/off mode on each power on. The modes may be changed manually during use of the unit. The unit will return to the measurement mode the unit was in before the backlight change.

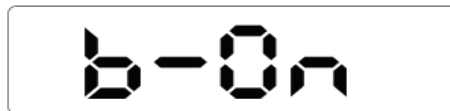
Backlight: Auto on/off

Press the on/off/hold switch on the Receiver Display until the following screen shows "b-Au". The backlight will now automatically power on when light is diminished and power off when light is brighter.



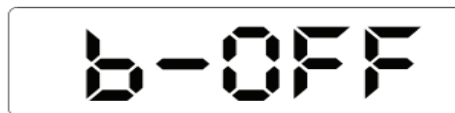
Backlight: Always on

Press the on/off/hold switch on the Receiver Display Press the control switch until the screen shows "b-On". The backlight will stay on until the unit is powered off and restarted, or the backlight option is manually changed. Battery life will diminish faster when the backlight option is always on.



Backlight: Always off

Press the on/off/hold switch on the Receiver Display until the screen shows "b-OFF". The backlight will stay off until the unit is powered off and restarted, or the backlight option is manually changed.



Battery Replacement

The Radio Ampstik and Receiver are powered by a two 9V batteries, one in each unit. When the "LO BAT" indication shows on the Receiver Display, the batteries in the Receiver Display should be replaced.



When the "LO BAT" indication and "UPPER" shows on the Receiver Display, the batteries in the Probe Transmitter should be replaced. They will continue to operate for a few hours.



Transmitter: Loosen the screw on the battery cover at the rear of the unit. Pull the battery out of the compartment and install a fresh battery. Secure the cover by closing and tightening the screw on the battery cover.

Receiver Display: Loosen the screw on the battery cover at the side of the unit. Pull the battery out of the compartment and install a fresh battery, observing the correct polarity. Secure the cover by closing and tightening the screw on the battery cover.

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.

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 133 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.

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 -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 under 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.

Transporting

There are no special considerations for transporting the device.

Cleaning & Preventative Maintenance

The SensorLink Radio Ampstik is an electronic meter, built to be used in the harsh conditions of high voltage environments. To ensure its continued lifetime use, clean and dry the entire meter before storing in the carrying case, do not drop the meters, do not alter the units in any manner, and visually inspect for cracks in the housing. Contact SensorLink for the evaluation of any cracks, holes, or tears present in the molded housing.

The Radio Ampstik Transmitter and Receiver display can be cleaned by wiping with a silicone hot stick wipe to remove dirt, grime, and salt that will degrade the urethane housing.

Troubleshooting the Radio Ampstik

Unit(s) will not power on

Verify that there are fresh batteries in both units.

Backlight Flicker

Due to the refresh rate of the light, some users may see flicker if the backlight is on when under artificial lighting.

Fail Codes

The unit will not enter into RUN mode if the startup-test reports any of the fail codes listed below. The unit will need to be returned to SensorLink for repair evaluation if a fail code appears.

FAIL CODE "1": Break to the main current sensor

FAIL CODE "2": Break to a current sensor component

FAIL CODE "3": Circuit failure

FAIL CODE "4": Circuit failure

Incorrect Reading

Verify if the inaccuracy is occurring in one location, or multiple locations. If a single location, take a second ammeter to the location and verify the measurement.

Receiver Display is toggling between amp and volt modes

In the volt/amp menu, change the selection from VA-On (which automatically selects the mode) to A-On, which will manually put the Receiver Display in amp mode.

Calibration Mode (not a standard use mode)

If no|Yes|FAC is scrolling through on the display, the unit has been put into CAL mode. Exit by pressing and holding the switch on the Transmitter when NO appears on the display. This will restart the unit. Erroneously entering this mode will not affect the unit's calibration.

Service and Repair Questions

Please contact SensorLink or an authorized agent for the return process of product for evaluation, repair, calibration, and verification.

SensorLink Corporation

Tel: (360)595-1000

Fax: (360)595-1001

E-mail: info@sensorlink.com

Web: www.sensorlink.com

Scan code for more production information



SENSORLINK CORPORATION LIMITED WARRANTY

What Does This Warranty Cover?

This warranty covers the following with respect to new, non-custom SensorLink products (the "Product"):

- Defects in materials
- Defects in workmanship
- Damages occurring during shipping from SensorLink if shipped under FOB Freight Allowed shipping terms

How Long Does This Warranty Last?

This warranty runs for twenty-four (24) months from the date of invoice by SensorLink.

What SensorLink Will Do:

If a defect in materials or workmanship or shipping damages as described above occurs within the warranty period, SensorLink will, at its election, repair or replace the Product at no charge or provide a refund.

What This Warranty Does Not Cover:

This warranty does not cover or apply to:

- Any defects or damages caused directly or indirectly by misuse, abuse, disassembly, alteration, negligence, accident, act of God, improper voltage, or improperly or incorrectly performed maintenance or repair
- Any defects or damages caused by any connection, installation or use of the Product not in compliance with the instructions and specifications for its use
- Any defects or damages caused by any alterations, modifications or repairs not made by SensorLink
- Third party products connected to the Product or in which the Product is installed
- Any Product purchased by the user in used condition
- Any custom Product produced by SensorLink
- Any Product repaired or calibrated by any party other than SensorLink

No Other Warranties:

OTHER THAN THE WARRANTIES PROVIDED HEREIN, SENSORLINK MAKES NO EXPRESS OR IMPLIED, ORAL OR WRITTEN WARRANTIES WITH RESPECT TO THE PRODUCT AND ALL SUCH WARRANTIES ARE EXCLUDED BY AGREEMENT AND SHALL NOT BE IMPLIED BY LAW, CUSTOM, USAGE, TRADE PRACTICE, COURSE OF DEALING OR COURSE OF PERFORMANCE. ALL WARRANTIES IMPLIED BY LAW, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH CANNOT BE EXCLUDED BY LAW ARE LIMITED TO THE DURATION OF THE WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation On Damages:

SENSORLINK SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY OR FOR INCIDENTAL, CONTINGENT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING FROM USE OF THE PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

How Do You Get Warranty Performance?

In order to be eligible under this warranty, you must promptly contact SensorLink upon discovery of a possible defect, supply a copy of this warranty along with proof of purchase, and request a return material authorization (RMA). If you do not contact SensorLink within the twenty-four (24) month warranty period, your rights under this warranty will terminate. All warranty correspondence should be directed to:

SensorLink Corporation
1360 Stonegate Way
Ferndale, WA 98248
(360) 595-1000

SensorLink will begin its inspection of the Product within five (5) business days of receipt and will contact you when its inspection is complete. If the inspection uncovers a defect, SensorLink will repair or replace the Product and pay for the cost of shipping the Product back to you. Alternatively, SensorLink may issue you a refund of your original purchase price.

If the inspection does not uncover a defect, or the defect resulted from causes not within the scope of the warranty, then the Product will be replaced only at your request and at your expense and you must bear all costs of shipping the Product. Additionally, you will be responsible to reimburse SensorLink for its evaluation expenses and Product verification fee. You may obtain SensorLink's current fees by calling the number listed above.

How Does State Law Apply?

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Choice of Law:

This warranty, including without limitations the rights and responsibilities granted hereunder, shall be governed and construed in accordance with the laws of the State of Washington, without regard to the conflicts of law provisions thereof.

Severability:

If any provision of this warranty is held unenforceable or illegal, or otherwise limited in its application, by a court or other authority with competent jurisdiction, such provisions shall be modified to the minimum extent required such that the rest of the warranty will continue in full force and effect in accordance with its terms.

Entire Agreement:

This writing embodies the entire limited warranty of SensorLink, and no other warranties are given beyond those set forth herein. No oral agreements or understandings shall be binding on SensorLink. SensorLink neither assumes, nor authorizes, anyone (including without limitation SensorLink agents, employees or contractors) to assume or create for it other obligations or liabilities or modify in any way any item or provision of this warranty.

Quality Assurance Certification True RMS Radio Ammeter Model 8-122XT and 8-122WJ

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; Serial Number: _____

Transmitter; Model 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: _____

Scan code for more production information



These products proudly made in the USA.

Form No: SALE-Manual Template RADIO AMP-009 REV: V01

Date: 05/2023

Manual Stock Code No: M050-812-201

Information contained in this document is preliminary and subject to change without notice. Product specification may change. Contact your SensorLink representative for the most current product information.

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