



Combi-sensor TX 550

Operating Instructions



La Crosse Technology

Please read these operating instructions completely and thoroughly before installation and save it for future reference. Please hand-over the operating instructions as well when you hand-over the device to other persons for use.

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1. Function and Proper Use

The combination sensor TX 550 is meant for outdoor use and captures the following weather data: Temperature, humidity, direction of wind, wind speed, onset of rain, rain quantity and duration of sunshine. Since the TX 550 is wireless, it can be placed anywhere within a 400 ft. range of the receiving station.

The sensor is fitted with bi-directional wireless communication and sends weather data at cyclic intervals. The interval period is between 120 and 180 seconds and is redefined after every send.

It is also possible to bring the sensor to live mode. You can thus immediately query the current weather data from the display unit at any point of time.

The sensor can be installed at a maximum distance of 120 m. from the base-station (depending on the local conditions; for details see "Range" section).

Proper Use

The combination sensor is meant for capturing weather and climate data that is sent to specific receiver stations.

It is operated using 3 AA Alkaline (1.5 V) batteries; no other voltages are permitted.

Every other use constitutes improper use that can lead to erroneous measurement results and will absolve the manufacturer from providing any warranty services. The same is applicable to any remodelling or changes done to the unit.

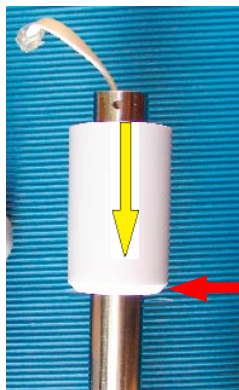
2. Safety Instructions

- The device is to be operated only in a closed state (battery compartment closed).
- The device is to be installed or mounted in such a way that it should not tilt, fall or cause damage.
- The device holder or the device mast may only be used to install the sensors and not for mounting any other objects such as antenna, flags, etc..
- Do not install the device as the highest outdoor point, i.e. on buildings, trees, masts, etc. - risk of lightning attack! Please conform to the lightning safety instructions while mounting the device on buildings.
- Do not make any modifications to the device and also do not remodel it.
- Do not leave packaging material unattended. Plastic bags/ sheets can become a dangerous toy in the hands of children.
- Do not leave the device in the hands of children. It contains small parts that the children may swallow. Install the device out of the reach of children.

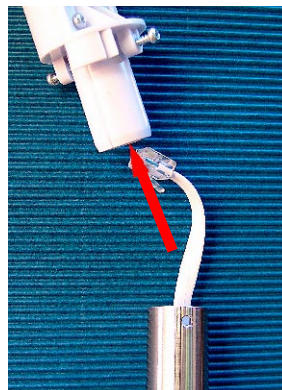
3. Start-up

The combi-sensor is delivered as single parts and needs to be assembled before start-up.

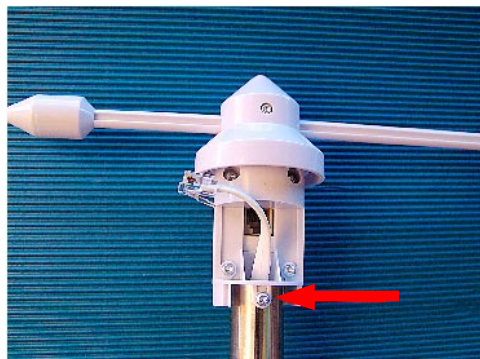
- Remove the wind meter and base of the wind meter (small white cylinder), the combi-sensor and the mounting pipes from the packaging.
- Mount the wind meter according to the following instructions:



1. Mount the base of the wind meter on the free end of the pipe of the combi-sensor holder as shown in the diagram



2. Put the cable through the foot of the wind meter



3. Insert the foot into the pipe and rotate it in such a way that it can be locked in the respective holes in the pipe using the two screws



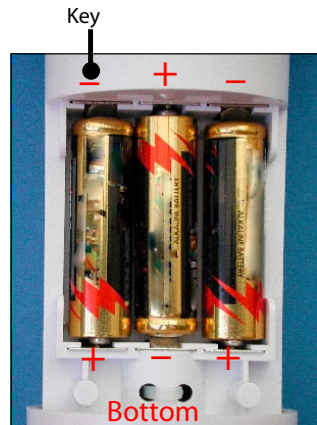
4. Insert the plug into the socket of the wind meter



5. Push up the base and then lock it by turning it to the right

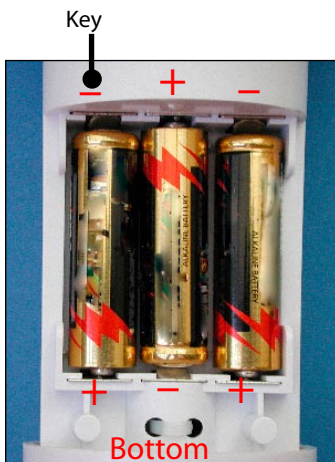
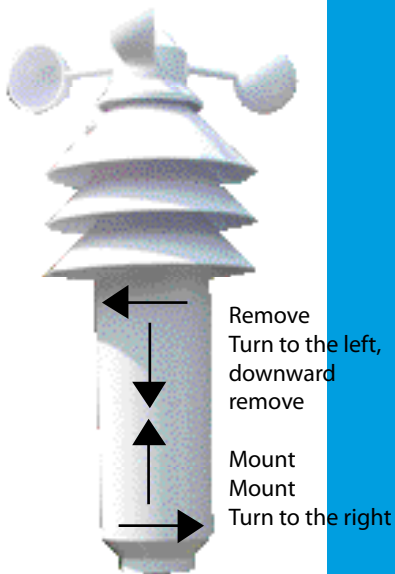
- Put together the pipes of the insertion mast. The sensor-holder is mounted on the pipe-end that is marked with a sticker.
- Install the fully mounted sensor within the possible transmitter radius (max. 400 ft. free field; take into account the dampening due to building walls, etc.) so that it stands in open space - the rain can thus fall directly into the rain sensor and the wind measurement is not hampered by adjacent buildings or trees - 50 ft. clearance.
A sunny location is possible because the temperature sensor is located in a shaded and ventilated part of the housing.
- Bury the pressed end of the mast deep into the soil so that it stands securely (approx. 15 inch depending on the condition of the soil). If the combi-sensor tilts and falls, it can cause injury to persons and damage to vehicles and other objects. Please note that the manufacturer is not responsible for injury or damage.

- Once the sensor is mounted, begin start up, and point the peak of the wind meter towards the North to align the sensor. Lock, if required, the wind meter in this position on the casing with the help of an adhesive tape.
- Open the sensor housing by rotating it towards the left and pulling down the casing (see picture on next page).
- Use a pointed object to press the key above the battery compartment and insert three AA Alkaline batteries according to the polarity marking in the battery compartment. Release the switch and then remove any adhesive tape that you may used to secure the wind meter.



Insert batteries, position of the key

- Bring the respective receiving station in the receiving mode according to the instructions of the corresponding Operating Instructions.
- Use a pointed object again to press the switch on the sensor. The receiving station should now register the data from the sensor.
- Close the casing again by pushing it upward and turning it to the right till it locks in.



Insert batteries, position of the key



The fully mounted TX 550

4. Troubleshooting

Faults that can perhaps hamper the reception of the transmitted measurement values, are:

No reception - The distance between the transmitter and the receiver is too much or too less (>3 ft., 1m).

Reduce or increase the distance between the transmitter/ receiver.

No reception - there are highly resistant materials (thick walls, steel concrete, UV glass...) located between the transmitter and the receiver

Relocate the transmitter or receiver. See chapter on "Range".

No reception - Transmitter batteries are empty.

Replace batteries with fresh Alkalines (dated 6 years endurance).

No reception - Transmitter is covered by the disturbance source
(Wireless device, wireless headphone/ loudspeaker)

Remove the source of the fault and look for another position for the transmitter and receiver.

Such disturbances are only for a short period (wireless traffic) or can be rectified in a very simple manner. Any wireless headphones, wireless baby phones or similar devices are operated at a frequency of 916.5 MHz in your house or in the vicinity only for a short duration. Most of these devices are enabled for exchanging signals at an interruption-free frequency. Such a measure can effectively fade out all interruptions.

No reception – Log in of sensor was not successful.

Execute log in procedure again. Refer page 5 of the manual and follow the instructions of the receiver station.

Inaccurate rain

Be sure rain gauge is assembled correctly, with drain holes aligned.

Check that sensor assembly is not tipped, but straight into ground.

Check rain gauge for debris that may be blocking the funnel, rocker (pointer) or drain hole.

Check that the rocker (pointer) is set properly.

Is the rain measurement unit correct? Ex: mm, inch or l/m².

Check the calibration of the rain sensor according 6.2.

Inaccurate wind

Check that sensor assembly is not tipped, but straight into ground.

Are surrounding areas clear of trees, buildings and other obstructions?

Check that the cups spin freely.

Is the wind measurement unit correct? Ex: mph, m/s or km/h.

No sunshine duration

Check that sensor assembly is not tipped, but straight into ground.

Check for debris in vented cap.

If possible: Adjust sunshine calibration. Follow the instructions of the receiver station.

Wireless sensor is disrupting the functioning of other devices in the 868 MHz band

The transmission of the wireless sensor can be briefly interrupt (every 3 minutes for approx. 100 ms) the functioning of other devices on the same channel.

Other instructions for start-up or troubleshooting

Under critical reception conditions, choosing the best possible location can simplify bi-directional data transfer. For this purpose, it is necessary to start a data query from the receiver station (see Operating Instructions of the receiver).

Turn the receiving station slightly; if there is no reception, mount it away from electrical motors, electrical machines, televisions, computer monitors and large metal surfaces.

5. Range

The free-field range for visual contact between transmitter and receiver is 400 ft. (120 m). Walls and even steel concrete structures may be penetrated; however, the range is then reduced accordingly. Reduced range can be caused by the following:

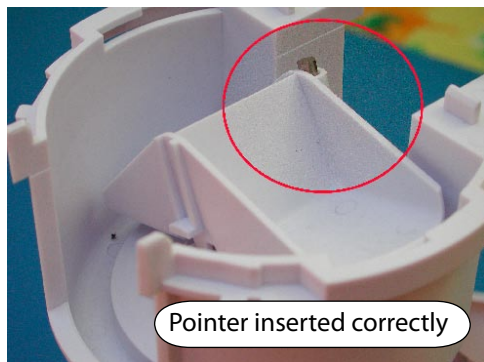
- High frequency disturbances of all types
- All types of structures or vegetation
- The distance between the sensor and the receiver to the conducting areas or objects (and even to the human body or the earth) has an effect on the transmission properties and in turn the range.
- Broadband disruptions in city areas can reach levels that reduce the signal-noise distance in the entire frequency range and in turn reduce the range.
- Devices with adjoining working frequencies can also have an effect on the receiver.
- PCs with poor shielding can interfere with the receiver and reduce the range.

6. Maintenance, Care and Setting

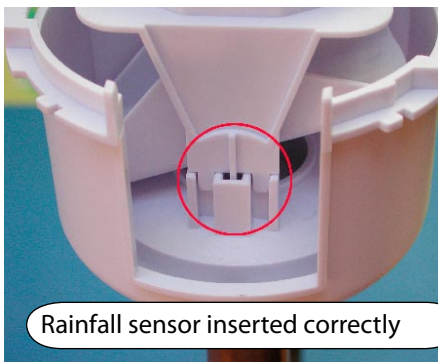
- The combi-sensor is to be cleaned from time to time to remove the dirt and dust that has settled on it. Check easy accessibility of the wind sensors and ensure that the sensors are fitting tight on the holder.

6.1. Cleaning the rain quantity sensor

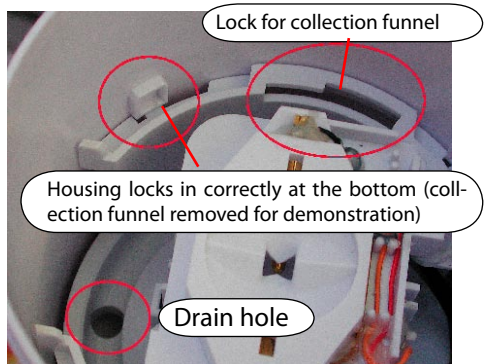
- Depending on the location, leaves, dirt, insect nests, sand and branches blown by the wind get collected in the collection funnel of the rain quantity sensor. Larger parts can block the passage. Sand can also accumulate on the pointer (rocker); large deposits of it can hamper the measurement result.
- Hence the rain quantity sensor is to be cleaned from time to time - at least once a year. The pictures shown below are a guideline for installing / dismantling.
- For cleaning the sensor, just remove the sensor housing by slightly turning it to the left.
- Further, the collection funnel can also be removed by turning it to the left.
- The rainfall sensor is now moved upward, folded towards the cable side and you can now remove the pointer.
- Clean the collection funnel, contacts, counter and the drain-hole in the housing and remove all residues.
- Place the counter back in its holder. The magnet of the counter should be on the side that faces the cable.
- Insert the rain sensor in its holder. It will also automatically hold the pointer. The rain sensor cable and the magnet of the pointer must be located on the same side.
- Now place the collection funnel from the top on to the sensor-holder and lock it in by turning it to the right.
- Now reinstall the casing and lock it by turning it to the right in the sensor-holder till it locks in. Ensure that the drain-holes of the casing and the sensor-holder match (drain-hole of the casing points outwards).



Pointer inserted correctly



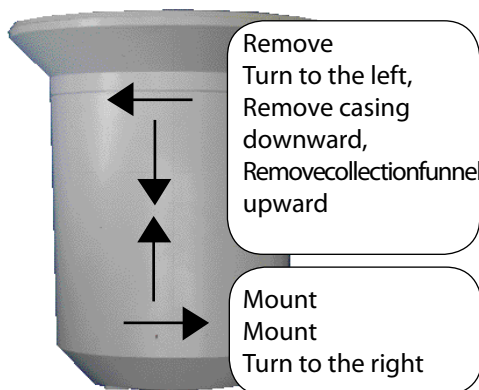
Rainfall sensor inserted correctly



Lock for collection funnel

Housing locks in correctly at the bottom (collection funnel removed for demonstration)

Drain hole



Remove
Turn to the left,
Remove casing
downward,
Remove collection funnel
upward

Mount
Mount
Turn to the right

6.2. Setting the rain sensor

The rain quantity measurement system has a high level of accuracy when it leaves the factory; so normally, no adjustments are required.

Adjustments would be necessary only if the accuracy requirements are very high.

Before starting to set the rain water measurement device, it is necessary to first reset the total rain quantity value shown in normal display mode of the reception station to zero (see respective operating instructions, total rainfall value shows zero). Further, the rain quantity for adjustments must be displayed in inch.

Proceed as follows for exact calibration:

1. Slowly pour 3.38 fl. oz. (100 ml) water over a period of 10 minutes in the rain sensor collection funnel.

Note!

Quick pouring will give wrong measurement results! Pour the water so slowly into the funnel that there is an even passage of water and there is no water in the funnel at any point of time.


2. The displayed total quantity should now be 0.26 inch.

3. If a different value is shown, then the pointer value that is mentioned is to be recalculated as follows:

New pointer value =
$$\frac{0.26 \times \text{Current pointer value}}{\text{Actual value (Display after filling in the water)}}$$

A new pointer value must now be entered in the configuration menu of the receiver station.
The factory setting is 295/pointer stroke.

7. Replacing the batteries

- The batteries in the TX 550 US have a lifetime of max. 2 years (alkaline batteries). If the sensor is operated in the data query mode, then the batteries have a lifetime of almost 1 year. The batteries are to be replaced when low-battery-symbol () is displayed at the receiver station when you select the combi-sensor.

Batteries of TX 550 US are replaced according to the instructions given under "Start-up".

Do not dispose of used batteries
in the household garbage!

8. Technical Specifications

Measurement interval: Between 120 and 180 s
Sending frequency 868 MHz
Outdoor range:.....max. 120 m
Temperature range:.....- 20 °F to 175.8 °F (-29 °C to 79.9 °C)
Resolution: 0.1 °C
Accuracy: ±1.4 °C (50 °F to 104 °F)
Measurement range rel. humidity:1% rH- 99 % rH
Resolution: 1 %rH
Accuracy: ± 5 %rH (30-70 %rH)
Rain quantity display: 0 to 39.3 inch (0 to 999 mm)
Resolution: < 0.01 inch (<0.3 mm)
Wind speed:..... 0 to 124 mph (0 – 200 km/h)
Resolution: 0.1 mph
Wind direction:.....0° to 355°
Resolution:5°
Voltage supply: 3 x Battery, AA cells / Alkaline

9. Instructions for disposal

Do not dispose of the device as part of household garbage!

WARRANTY INFORMATION

La Crosse Technology, Ltd provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased and used in North America and only to the original purchaser of this product. To receive warranty service, the purchaser must contact La Crosse Technology, Ltd for problem determination and service procedures. Warranty service can only be performed by a La Crosse Technology, Ltd authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to La Crosse Technology, Ltd or La Crosse Technology, Ltd's authorized service center.

La Crosse Technology, Ltd will repair or replace this product, at our option and at no charge as stipulated herein, with new or reconditioned parts or products if found to be defective during the limited warranty period specified above. All replaced parts and products become the property of La Crosse Technology, Ltd and must be returned to La Crosse Technology, Ltd.

Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer. La Crosse Technology, Ltd will pay all expenses for labor and materials for all repairs covered by this warranty. If necessary repairs are not covered by this warranty, or if a product is examined which is not in need of repair, you will be charged for the repairs or examination.

The owner must pay any shipping charges incurred in getting your La Crosse Technology, Ltd product to a La Crosse Technology, Ltd authorized service center.

Your La Crosse Technology, Ltd warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (including the lack of reasonable and necessary maintenance); (2) damage occurring during shipment (claims must be presented to the carrier); (3) damage to, or deterioration of, any accessory or decorative surface; (4) damage resulting from failure to follow instructions contained in your owner's manual; (5) damage resulting from the performance of repairs or alterations by someone other than an authorized La Crosse Technology, Ltd authorized service center; (6) units used for other than home use (7) applications and uses that this product was not intended or (8) the products inability to receive a signal due to any source of interference.

This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

LA CROSSE TECHNOLOGY, LTD WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT. THIS PRODUCT IS NOT TO BE USED FOR MEDICAL PURPOSES OR FOR PUBLIC INFORMATION. THIS PRODUCT IS NOT A TOY. KEEP OUT OF CHILDREN'S REACH.

This warranty gives you specific legal rights. You may also have other rights specific to your State. Some States do not allow the exclusion of consequential or incidental damages therefore the above exclusion of limitation may not apply to you.

For warranty work, technical support, or information contact:

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