



TAI8585KIT for La Crosse WS-7048U Rain Gauge Installation Manual

Ver 1.0
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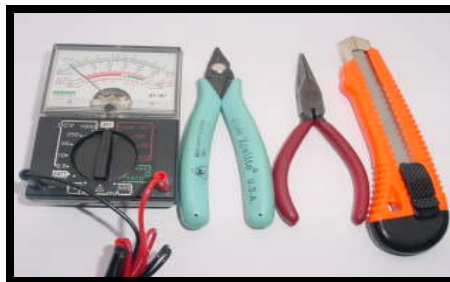
This document explains the steps needed to modify a La Crosse Rain Gauge model WS-7048U Collector II unit to operate within the 1-Wire communication protocol using the TAI8585LCR retrofit kit.

Nevertheless this document refers to a specific unit, the same procedure can be applied to modify other similar tipping based Rain Gauges.

The TAI8585-LCR Kit and the TAI8585-LCR are available at
www.aag.com.mx

Required tools (Not included with the kit)

<u>Quantity</u>	<u>Description</u>
-1-	Continuity Tester (can be a battery with a bulb)
-1-	Nose pliers set
-1-	Cutting pliers set
-1-	Cutter knife



Important: The following procedure voids the warranty of the La Crosse WS-7048U rain gauge , Automatización Aplicada a Gasolineras SA de CV is not liable for damages to the La Crosse unit or any other similar device. In case you continue with the procedure, you are doing so at your own risk.



Required material (Not included)

Quantity

Description

-1-

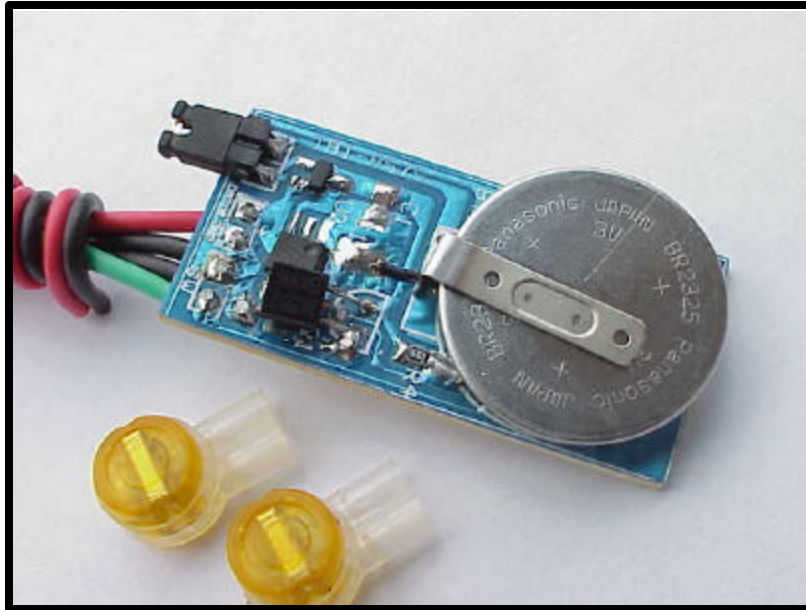
**La Crosse WS-7048U rain gauge unit
(available at www.aag.com.mx)**





The TAI8585LCR Kit includes

<u>Quantity</u>	<u>Description</u>
-1-	TAI8585LCR card (without RJ11 connectors)
-2-	Connection clips



Important note: The jumper provided with the kit controls the connection of the Lithium battery to the DS2423 integrated circuit. The jumper must be connected for normal operation of the unit.



Procedure

1. Place the La Crosse unit on a flat surface and separate the upper part leaving the lever mechanism exposed as seen in Fig. #1

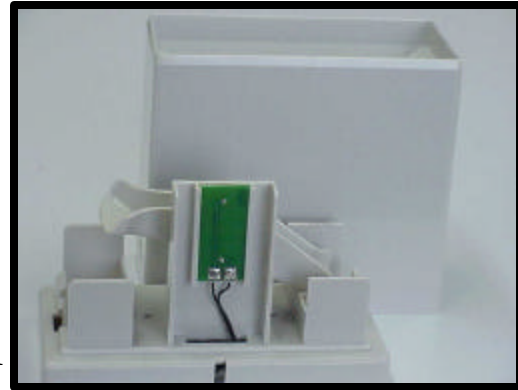


Fig #1

2. Cut the two wires with the cutting pliers . See sequence of Figs #2,#3

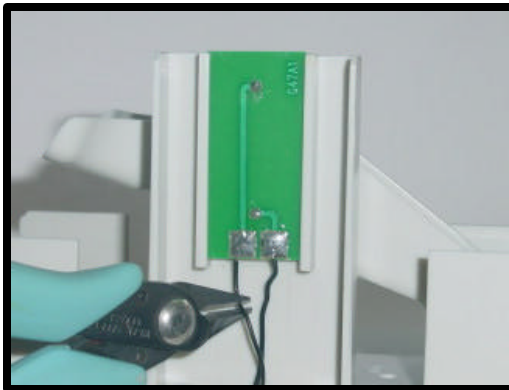


Fig #2

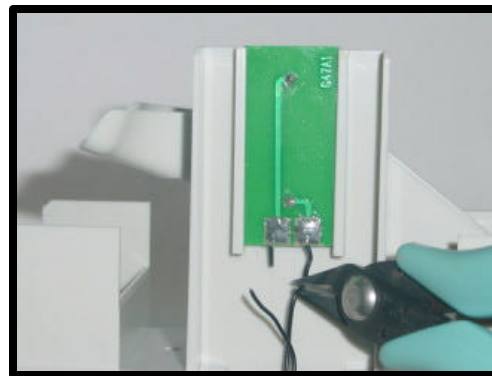


Fig #3

3. Remove the PCB board from the plastic unit using the nose pliers. Figs#4, #5

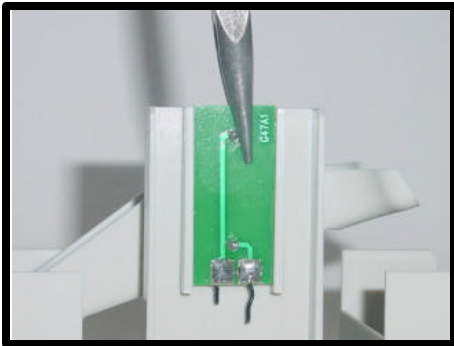


Fig #4

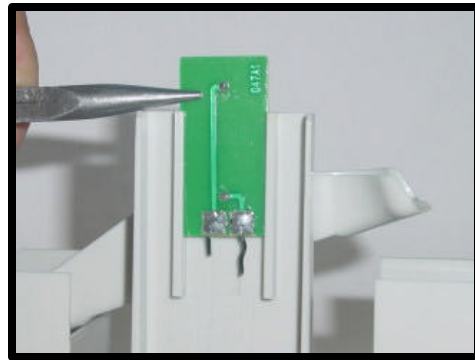


Fig #5

4. Install the TAI8585LCR as showed on Fig. #6

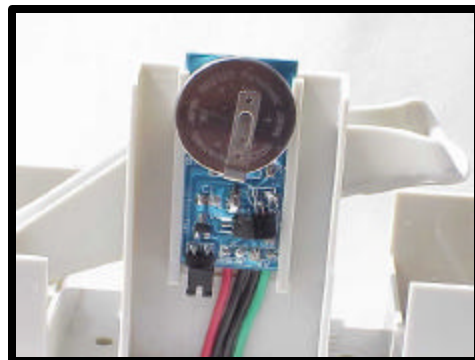


Fig #6

5. **Pass the red and black wires through the hole at the bottom of the mechanism as indicated in Fig.#7**

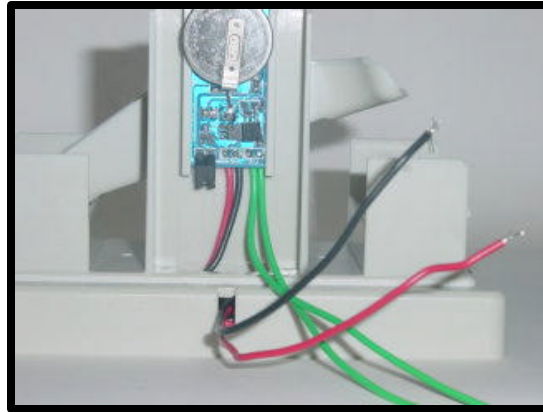


Fig. #7

6. **Pass the two black wires that were connected to the original PCB board through the same hole in the opposite direction as indicated on Fig.#8**

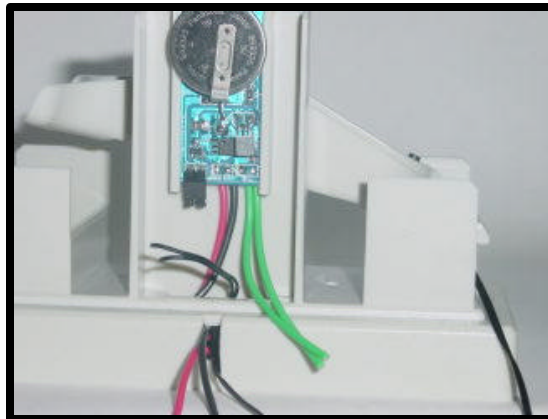


Fig. #8

7. Using the tester locate which wire correspond to the center connector of the 3.5 mm plug that is included with the original LaCrosse RainGauge as is showed on figs. #9,10,11.

Wrong conductor selected.

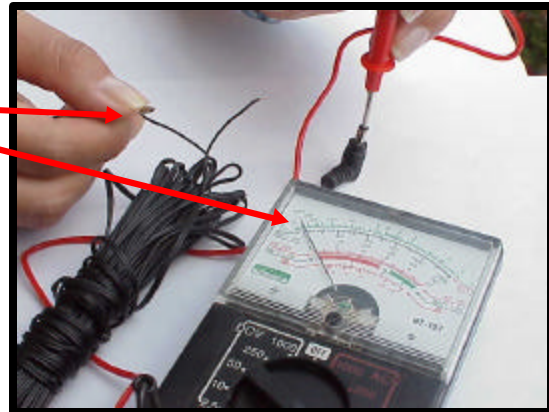


Fig. #9

3.5mm plug

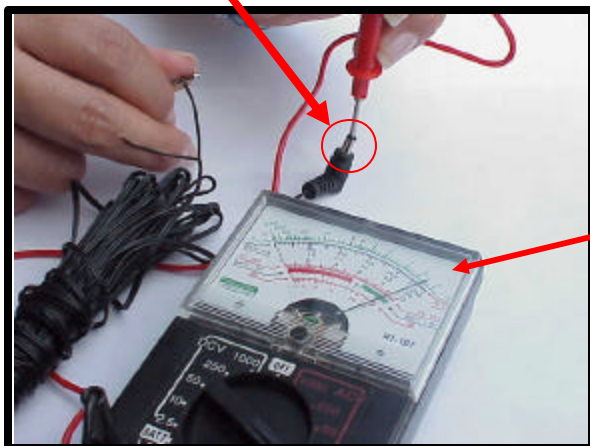


Fig. #10

Right conductor selected

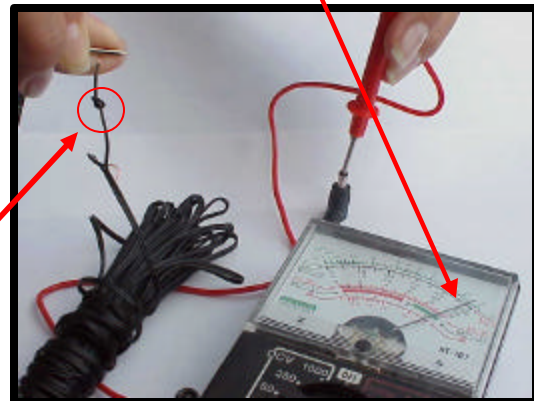


Fig. #11

Mark the correct wire with a knot

7. Pass the duplex black cable through the hole at the bottom of the assembly

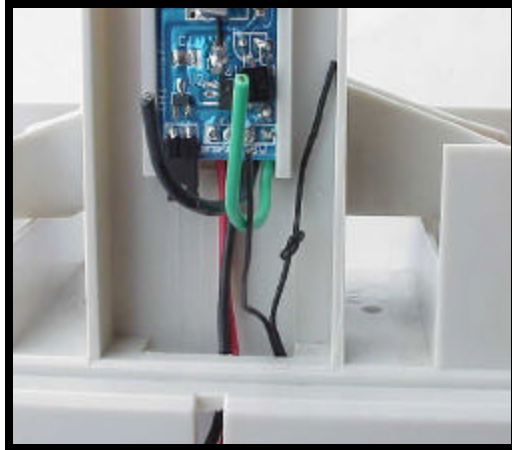


Fig. #12

8. Insert the black conductor, marked with a knot of the duplex black wire to one of the provided clip connectors included with the TAI8585LCR kit. On the other side of the connector insert the green wire that is connected to the TAI8515LCR kit.

IMPORTANT: If the correct (center on the 3.5mm plug) conductor isn't connected to the green cable the unit is not going to work and can be damaged.

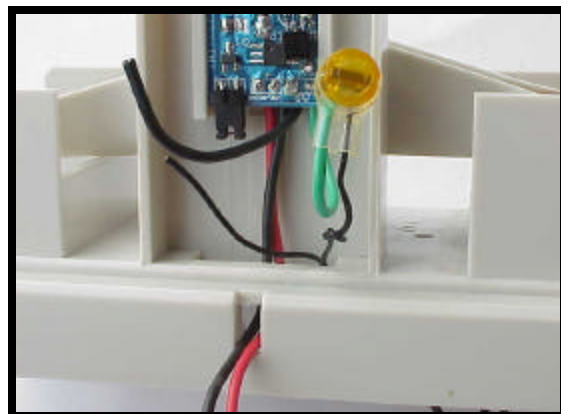


Fig. #13

9. Do pression with the pliers until the yellow button goes inside the connector and both cables are securely tied together.

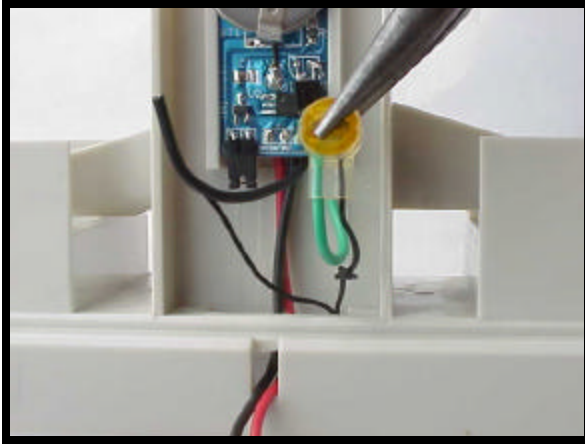


Fig. #14

10. Do the same with the other conductor that must be connected to the black wire at the TAI8585LCR kit

Fig. #15

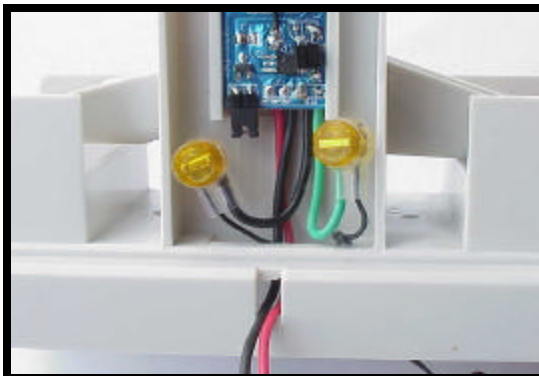
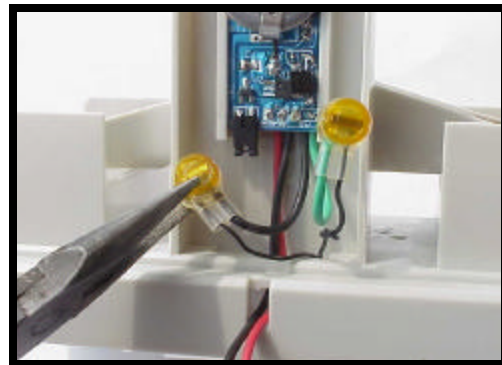


Fig. #16

In figure #17 you may see what is the result of the modification made to the unit to make it compatible with the 1-Wire standard

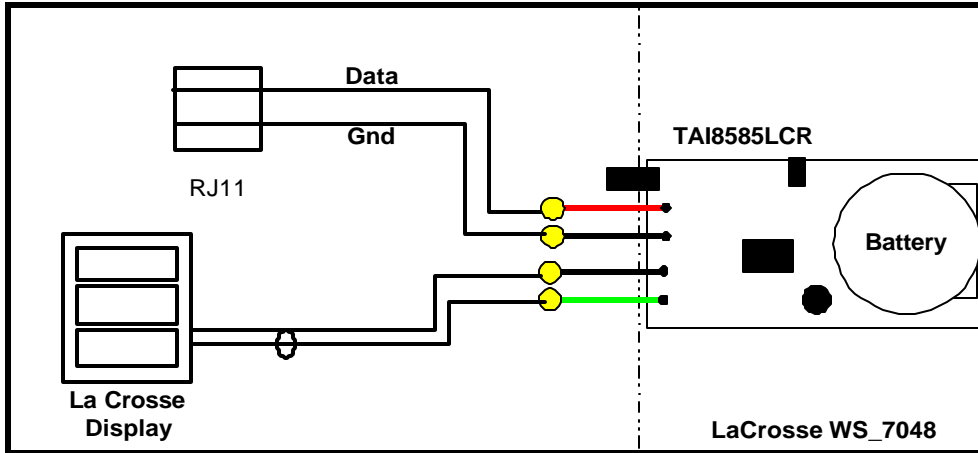


Fig. #17

Fig. #17

Very Important Note:

In the 1-Wire LAN specification each one of its conductors does have a specific function, so it is extremely important to be careful with the connection. The colors on the telephone wires are: yellow, red, green and black. We are only interested in the Red and the Green ones. These two colors will be found in the central conductors in the RJ11, but since the order could be Green-Red or Red-Green, you must not pay attention only to the color of the cables.

Make sure the cable in position 2 of the RJ11 connector is connected to the Data line of the TAI8585LCR and the cable in position 3 of the RJ11 is connected to the GND line of TAI8585LCR to guarantee that the connection is correctly made.

Fig.#18

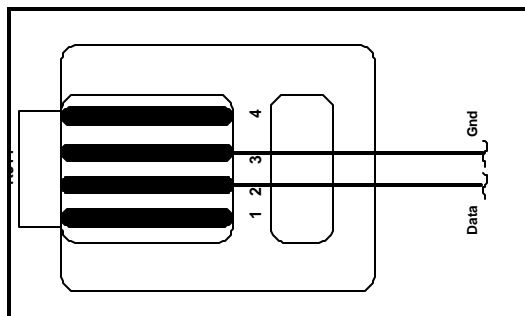


Fig. #18

The connections diagram we recommend is the following:

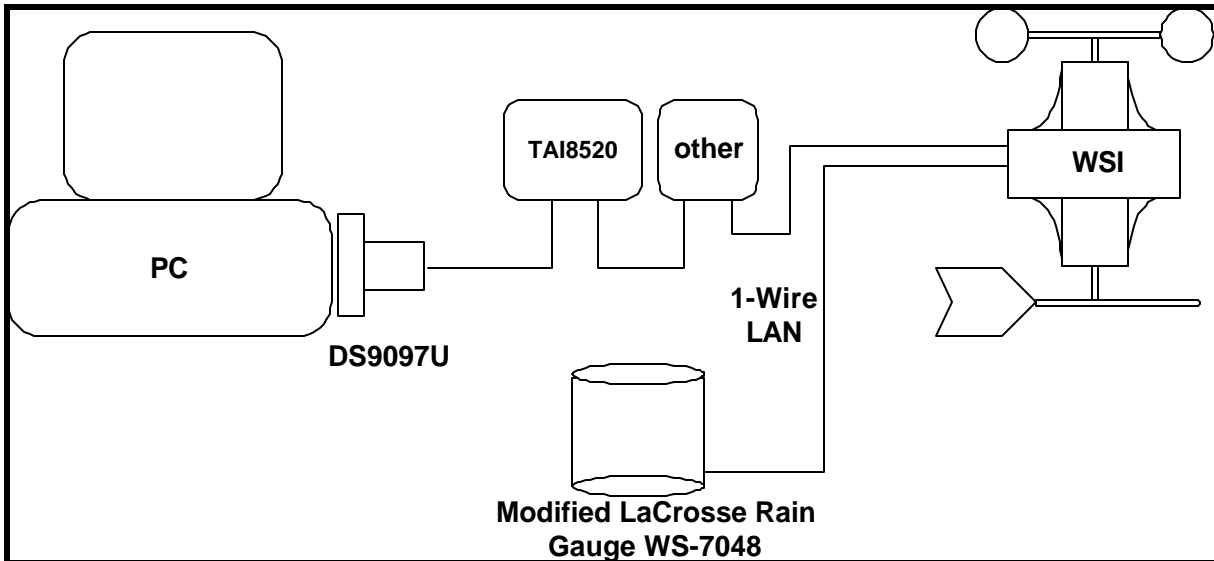


Fig.#19



Software Configuration :

If you use the software Weather.exe that is available at www.aag.com.mx/download free of charge, this program should be calibrated to operate with the LaCrosse RainGauge WS-7048. The La Crosse RainGauge WS-7048 is precalibrated when it is manufactured and it corresponds to 0.02 inches of rain for each closure of the switch.

Procedure:

- Execute the Weather.exe program with the modified LaCrosse RainGauge WS-7048 unit disconnected. Once the program has recognized the existing elements in the 1-Wire web, connect the LaCrosse RainGauge WS-7048 unit. If the unit is accepted by the software, the lower right panel will become active.. Fig#20

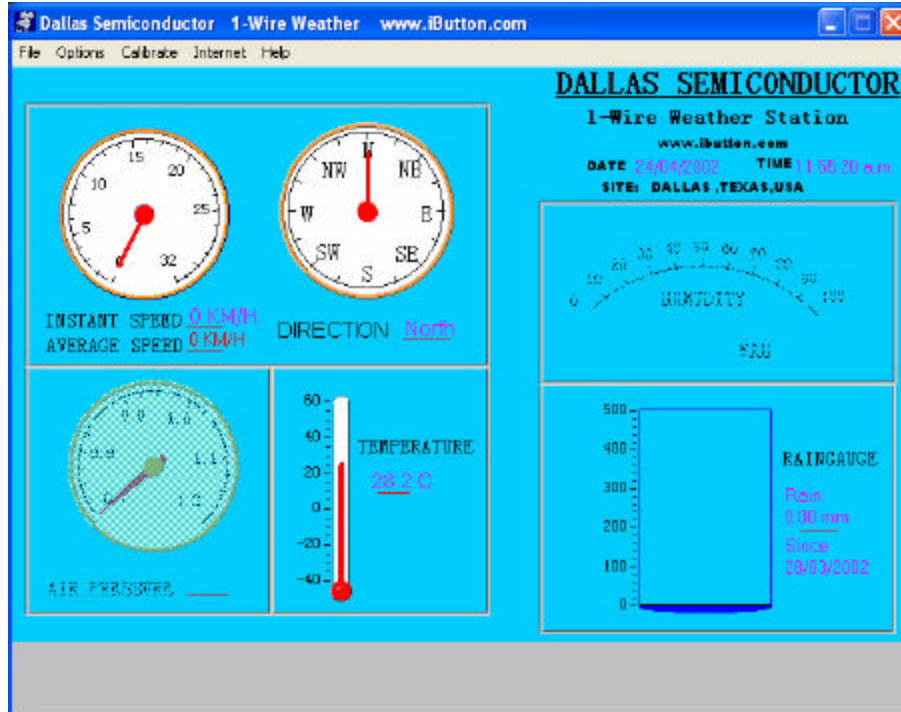


Fig.#20



- First select *Options->Rain Gauge>Reset*, this option will start the internal counter of the program for the rain sensor in zero..

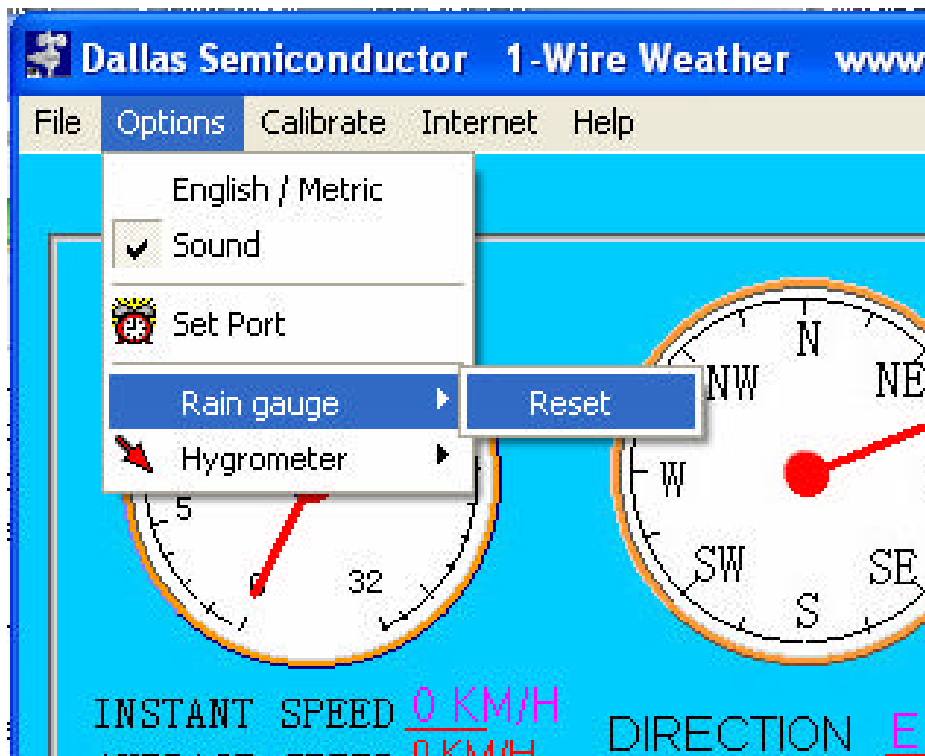


Fig.#21

- Move the lever of the LaCrosse WS-7048 a controlled number of times, we recommend doing it a hundred counts. Multiply the number of counts by the calibration factor of the equipment acquired, e.g. in the case of the metric unit the result is $0.5 \text{ mm} * 100 = 50 \text{ mm}$. This value is introduced in the option *Calibrate* > *Rain Fall* as shown on figures #22 and #23.

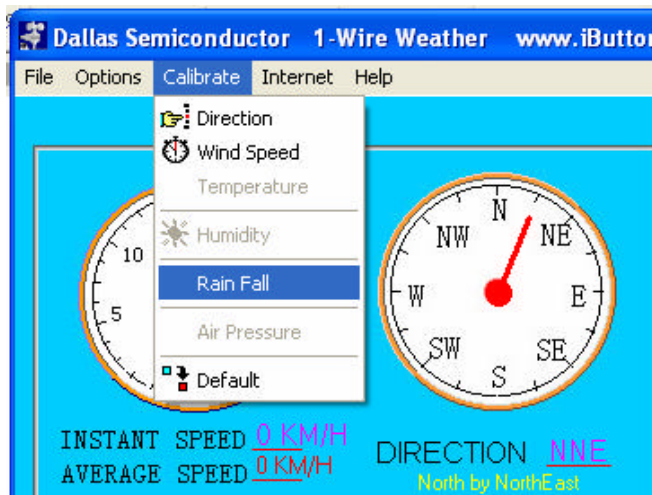


Fig.#22

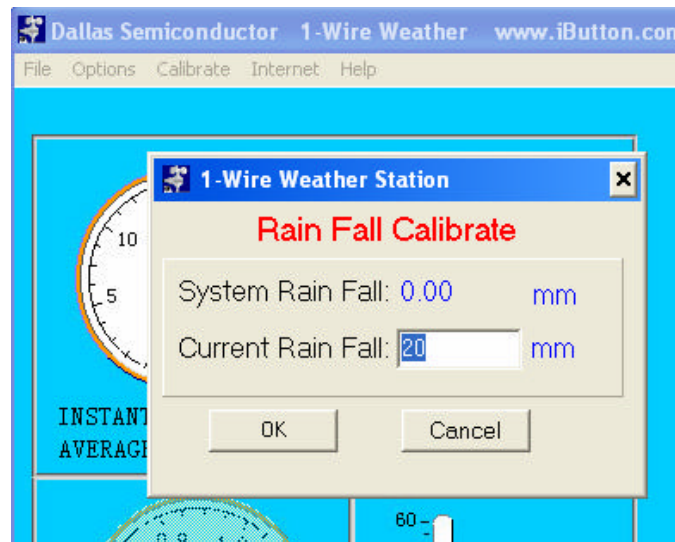


Fig.#23

Now our unit is ready to operate !!!!



CAUTION !!!!!

- **DO NOT INSTALL THE WEATHER STATION WHERE IT COULD COME IN CONTACT WITH POWER LINES.**
- **AVOID LEAVING THE WEATHER STATION CONNECTED DURING AN ELECTRICAL STORM. THERE MAY BE A REMOTE RISK OF ELECTRIC SHOCK OR DAMAGE TO EQUIPMENT FROM LIGHTNING.**

This completes the assembly and installation of the 1-Wire TAI8585LCR KIT. Automatización Aplicada a Gasolineras S.A. De C.V. makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose, nor that the use of its products will not infringe its intellectual property rights or the rights of third parties with respect to any particular use or application and specifically disclaims any and all liability arising out of any such use or application, including but not limited to, consequential or incidental damages.