

## **CaipoRain User Manual**

This manual is applicable to the following models

CaipoRainV2

## **Introduction**

Thank you for purchasing weather station CaipoRain.

This manual contains installation and operation instructions. Read this manual carefully before starting and keep the manual for future reference.

We, Caipos GmbH,  
Schillerstr 5, 8200, Gleisdorf, Austria, declare that this product is in compliance with relevant requirements and regulations of directive EN 301 489-1 V1.9.2 ; EN 301 489-7 V1.3.1.

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## 1. General Description



Pic.1

CaipoRain is portable, internet based rain and soil monitoring station. Depending on your configuration, your device may have the following sensors

Precipitation

Soil moisture

Soil temperature

Air temperature and relative humidity

Leaf wetness

Internal flash memory allows storing data for up to 8 years depending on interval of measurements. Data is uploaded to the central web platform, where free web space is provided for every station. Web application allows instant access to data of last 5 years. Data older than 5 years is archived and available on request. CaipoBase is delivered completely configured. Customer only needs to insert a SIM card with valid data contract, mount the main unit and install the sensors. CaipoBase is solar powered and maintenance free. For more accurate measurement results rain gauge and solar panel must be cleaned once a year or more often depending on environmental conditions.

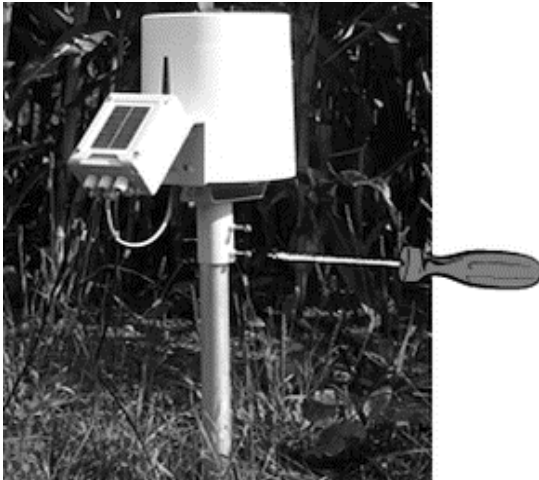
## 2. Installation Guide

In order to accurately measure environmental parameters and ensure proper work of solar panel, CaipoRain should be installed in an open area without any obstructions. Perform following steps for easiest installation:

1. Find an open unobstructed area where the station will be installed
2. Prepare the weather station pole. Pole must be vertically inserted at least 0.5 m deep into the soil to ensure long-term stability



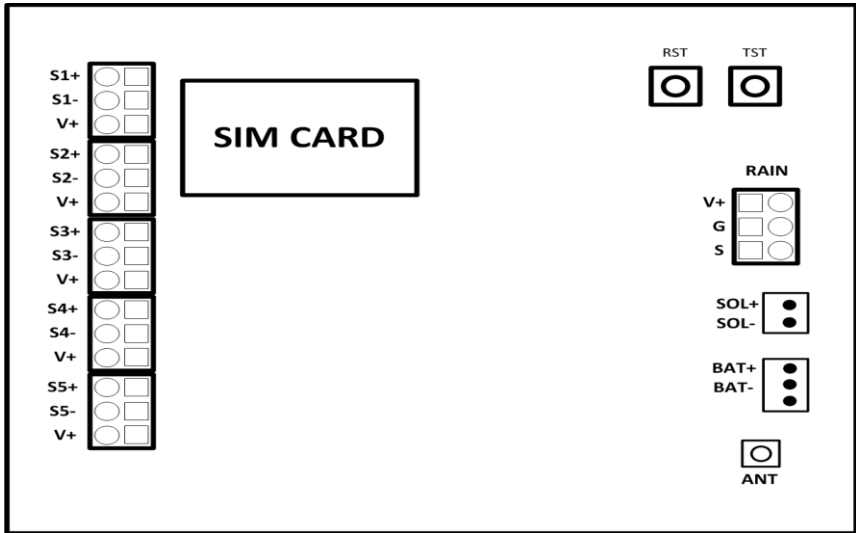
3. Mount CaipoRain enclosure on the pole and tighten 2 screws





4. Direct CaipoBase with solar panel towards the south to receive maximum solar energy
5. Install soil moisture sensors into soil at necessary depth
6. If leaf wetness sensor is included fix it on the pole or other holder using cable tie or clamps
7. If air temperature and relative humidity sensor is included fix on the pole using U-screws included in the package

### 3. Turning the System On



Pic 3

According to safety regulations CaipoRain is shipped switched off. Following steps must be performed to activate the device

1. Prepare a SIM card with valid data contract. Make sure that PIN is deactivated
2. Unscrew four screws and open the enclosure
3. Install the SIM card into SIM card holder
4. Connect solar panel. Solar panel connector marked SOL.
5. Connect battery connector. Battery connector marked BAT.
6. Close the enclosure carefully by tightening 4 screws.
7. Press TST button. CaipoRain starts sending data to the central web platform CaipoWeb
8. Create an account and check data as described in section 4

**Caution:** To avoid discharge of the battery do not switch on the device if solar panel is not connected or in shadow.

## **4. Caipos central web platform**

For detailed information about Caipos central web platform please refer to [www.caipos.com](http://www.caipos.com)

### **Creating an Account and Attaching Stations**

Free web space is provided with every delivered system on <http://caipos.com/CaipoWeb/Weather>

In order to access the data on a user account must be created. Any number of base stations can be attached to a single account. To attach a base station to a web account serial number of station and PIN code should be provided. Serial number and PIN code can be found on the registration card supplied with the base station.

### **Viewing Weather Data**

After creating a user account and signing in at <http://caipos.com/CaipoWeb/Weather>, weather data of the first station attached to the account is displayed. Data is shown in graphical and tabular format. CaipoWeb allows viewing data of several stations at the same time.



## 5. Technical Specifications

Power supply	3.6 V, 2 Ah NiHM battery pack
Solar panel	95×65×4.5mm 8V 0.6W
Flash memory	4Mb (up to 8 years of data)
GSM module	Dual QUAD BAND GPRS/EDGE
Max. number of directly connected sensors	5
Power consumption in sleep mode	20 $\mu$
Approximate GSM data transfer volume	20 Mb per month
Interfaces	5 x Analogue, 1 x Rain Counter
Operating temperature	-30 – 60 °C
Storage temperature	-40 – 60 °C

## 6. Sensors of CaipoRain

Following sensors can be connected to CaipoBase in any combination:

- Soil moisture
- Soil Temperature
- Rain gauge
- Air temperature and relative humidity
- Leaf wetness
- Delta-T PR2/4 soil moisture probe

New sensors are constantly developed. To get the latest information about available sensors please visit [www.caipos.com](http://www.caipos.com)

## 7. Troubleshooting guide

<b>Problem</b>	<b>Possible reasons and solutions</b>
Station does not send data to web site	<ol style="list-style-type: none"> <li>1. Check that GPRS data transfer is activated for CaipoRain SIM card by opening a web page using mobile phone with CaipoRain SIM card</li> <li>2. Check that PIN code for CaipoRain SIM card is deactivated</li> <li>3. Press TST button and observe the blinking of LED. If it does not start to blink try to replace the battery. If it blinks once a second and then blinks fast check items 1 and 2 again</li> </ol>
Some of connected sensors appear on web site in the sensor list but do not have valid data values	<ol style="list-style-type: none"> <li>1. Check that sensor are properly connected and not damaged</li> <li>2. Send problematic sensors to service</li> </ol>
Station stopped sending data	<ol style="list-style-type: none"> <li>1. Check if you have a low battery warning on the web site. If battery is low check that solar panel is connected, oriented to south and not obstructed from sun light</li> <li>2. Check the SIM card as described in previous section</li> </ol>



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