SISTEMES ELECTRÒNICS PROGRÉS

Manual

Weather Station

CODE 06730001

The weather station has a set of climatic sensors: **relative humidity, temperature, solar radiation, anemometer, wind vane and rainfall gauge**.

The weather station is easy to install, has a watertight connection and is resistant to inclement weather. It has a metallic structure to hold the different devices that the weather station includes and arms to place the sensors further away from the body, so that they give the correct readings.

All sensors have a 4-20 mA current output, except the rainfall gauge, which has a pulse output (digital output).

The weather station is connected to the Agrónic with a **12-metre multi-wire cable**.

Technical specifications

Sensor specifications					
Sensor	Output signal	Reading range	Response time (min.)	Weight	Dimensions
Temperature	4-20 mA	-40 to +85ºC	400 ms	1.75 kg with protector	Height: 190 mm Width: 230 mm Depth: 200 mm
Relative Humidity	4-20 mA	0 to 100%			
Solar radiation	4-20 mA	0 to 2000 W/m^2	200 ms	0.1 kg	Height: 130 mm Width: Ø 30 mm
Anemometer	4-20 mA	0 to 120 km/h	2 sec.	0.25 kg	Height: 139 mm Width: Ø 124 mm (blades)
Wind vane	4-20 mA	0 to 360º (*)	2 sec.	0.25 kg	Height: 185 mm Width: 128 mm
Rainfall gauge	Pulses	0.2 L/m^2 pulse	---	1 kg	Height: 260 mm Depth: 280 mm
Station complete and assembled with all sensors				7 kg	Height: 680 mm Width: 470 mm Depth: 570 mm

** If the weather station is set up in the Northern Hemisphere, the tare must be adjusted to **-20º** (Settings - Sensors - Analogue).*

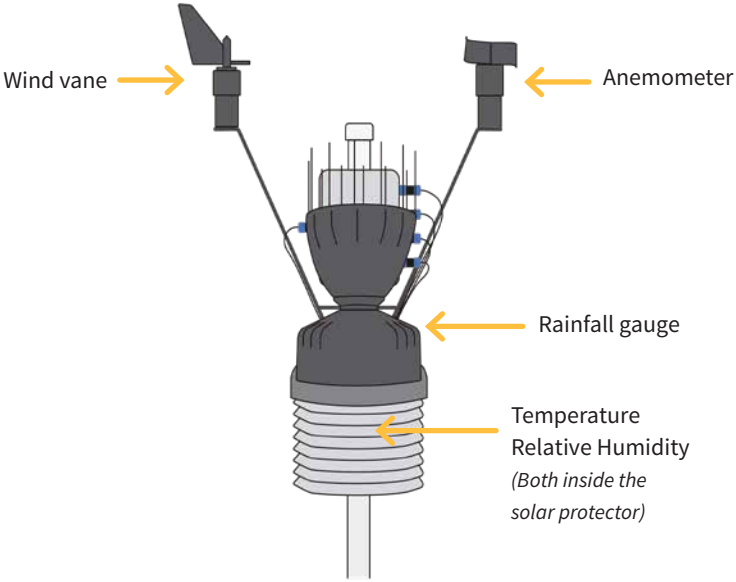
** If the weather station is set up in the Southern Hemisphere, the tare must be adjusted to **+20º** (Settings - Sensors - Analogue).*

Sensor ratio - cable colour	
Sensor	Wire colour
Temperature	Pink
Relative Humidity	Grey
Solar radiation	Green
Anemometer	Yellow
Wind vane	White
Rainfall gauge (A)	Brown
Rainfall gauge (B)	Black
Power supply (+12 Vdc)	Blue
Power supply (0 Vdc)	Red

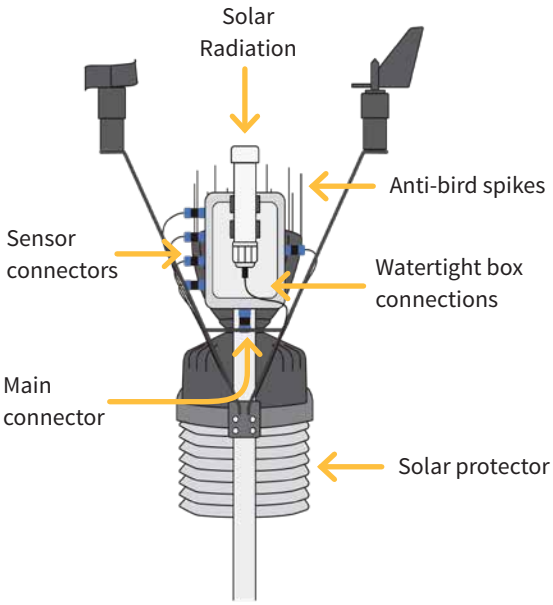
This symbol indicates that electronic devices should not be disposed of along with household waste at the end of their useful life. The product must be taken to the corresponding collection point for electronic equipment recycling and correctly processed pursuant to Spanish legislation.

Weather station parts

FRONT VIEW



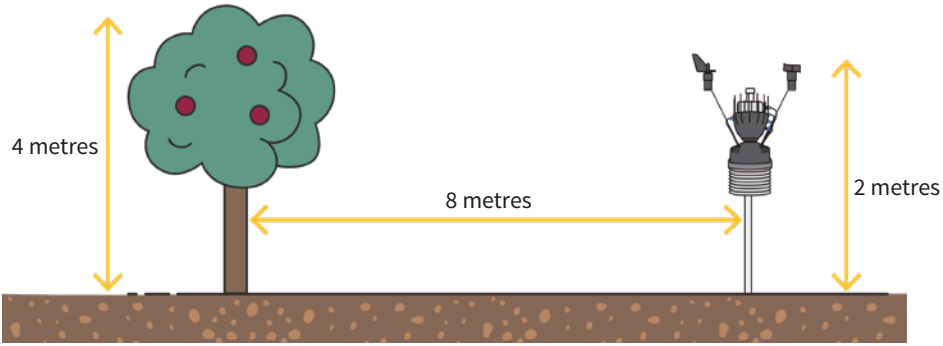
REAR VIEW



Installation

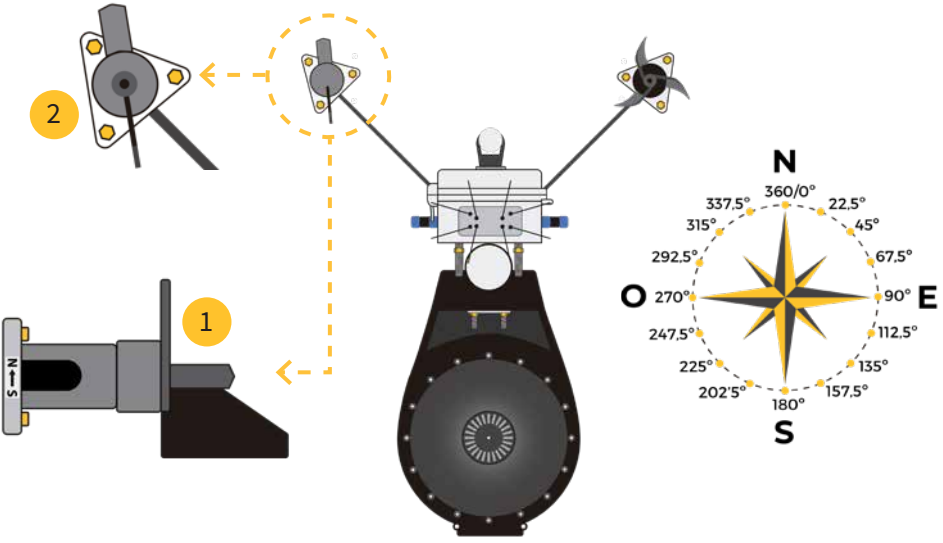
In order to ensure **good quality data** in the probe reading, it is very important to take a series of tips into account in the installation as well as to choose the location correctly.

- Move the weather station away from any artificial source of heat or cold.
- The recommended height from the ground is between 1.25 metres and about 2 metres.
- Avoid obstacles such as walls, trees, fences, etc. that may affect the sensor readings. The weather station should be moved away to a reasonable distance of twice the height of the nearest object (see example).
- The rainfall gauge must be level and must be mounted on a support so that vibrations are not transmitted to it.

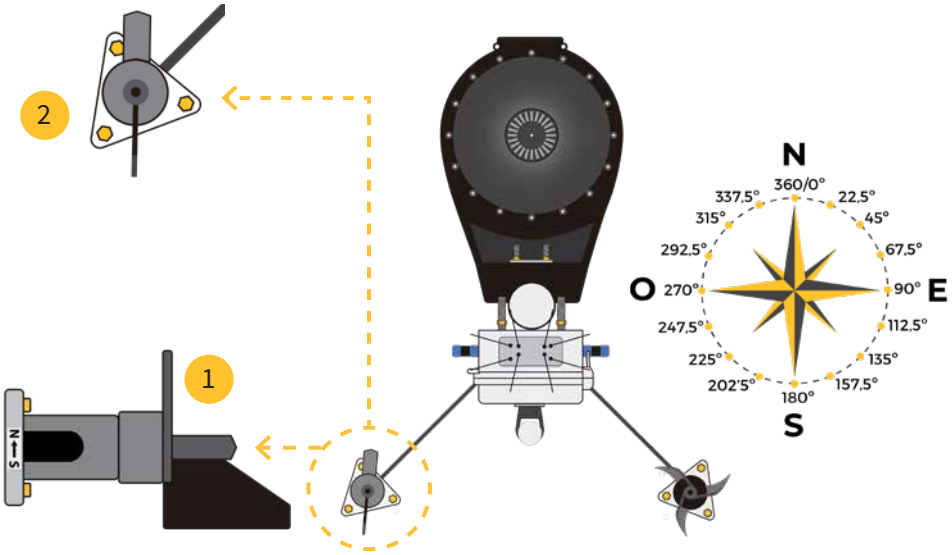


- For optimal system operation, it is important to ensure the wind vane is oriented correctly. Depending on the hemisphere in which it is installed, its assembly changes.

NORTH HEMISPHERE



SOUTHERN HEMISPHERE



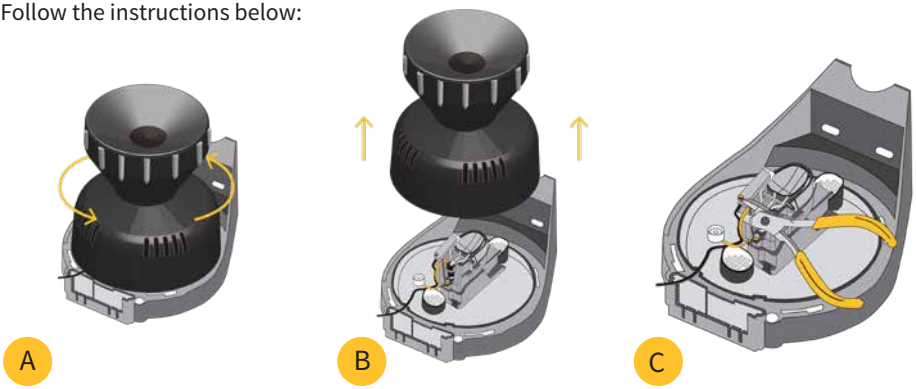
IMPORTANT

Assemble in the direction of the figure 1 and in the position of the figure 2.

RAINFALL GAUGE

Before mounting the weather station, an internal flange must be cut that protects the tipping container of the rainfall gauge while it is being moved.

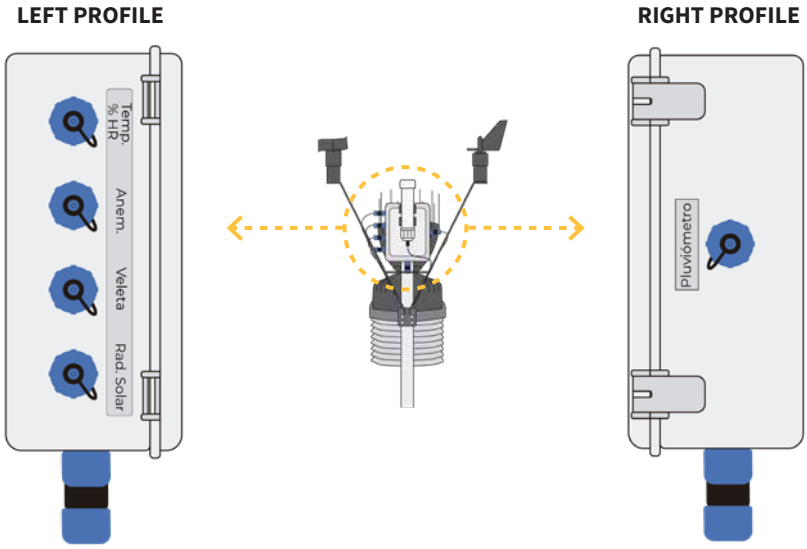
Follow the instructions below:



- Remove the "aerocone" to reveal the inside of the rainfall gauge. To do this, turn a little to the left as shown in the drawing. A
- Lift the aerocone to see the entire rainfall gauge mechanism. B
- Use pliers to cut the flange that prevents the container from tipping, as shown in the image. To finish, place the "aerocone" again turning to the right. C

Connections

The box has a series of connectors prepared and identified to screw in their respective sensors. The connector layout is as follows:



Sensor configuration

ANALOGUE SENSORS

The sensor, with analogue output, acts by delivering a current and a voltage proportional to what it measures. The format indicates the sensor units and the relationship between the voltage read by the input and the sensor reading values.

To configure the sensors of the weather station, go to:

- **Function | Settings | Sensors | Analogue**

Depending on the controller, once in and for each of the sensors, configure the data according to the following tables.

Configuration ***of the analogue sensors in Agrónic 2500***

Sensor	Number Sensor	Number Input [1]	Number Input [2]	Time voltage [2]	Number Format	Voltage (Vdc)
Temperature	1	00001	30101	500 ms	1	12 Vdc
Humidity	2	00002	30102	500 ms	4	
Anemometer	3	00201	30103	2 s	5	
Wind vane	4	00202	30201	2 s	16	
Solar radiation	5	00203	30202	250 ms	2	

[1] Configure when the weather station is connected directly to the Agrónic 2500.
[2] Configure in the Agrónic 2500 when the weather station is connected to the AgroBee-L 3MA modules.

Configuration of analogue sensors in ***Agrónic 4000/5500***				
Sensor	Number Sensor	Number Input	Number Format	Voltage (Vdc)
Temperature	1	1	1	12 Vdc
Humidity	2	2	4	
Anemometer	3	3	5	
Wind vane	4	4	16	
Solar radiation	5	5	2	

Internal *configuration of analogue sensors in* ***Agrónic Bit***						
Sensor	Number Sensor	Number Input	Number Format	Time Reading (s)	Number Output *	Voltage (Vdc)
Humidity	1	00001	4	1.0"	00101	12 Vdc
Temperature	2	00002	1	1.0"	00101	
Solar radiation	3	00004	2	0.4"	00002	
Anemometer	4	00005	5	2.0"	00003	
Wind vane	5	00006	16	2.0"	00001	

** This digital output number is used to power the sensor for a configurable time.*

IMPORTANT

In the controllers, **modify the values of format number 1**, since by default it is configured for another type of temperature sensor.

Two calibration points must be configured for the sensor calculation from the controller menu as follows.

From the Agrónic Bit menu, go to:

- **Function | Settings | Sensors | Analogue | Formats**

Once in, the settings should be the same as shown in the following table.

Analogue Sensor ***Formats***					
Setting	Humidity	Temperature	Solar	Anemometer	Wind vane
No. of integers	3	2	4	3	3
No. of decimals	0	1	0	0	0
Sign	no	yes	no	no	no
Units	%	ºC	W/m²	km/h	º
Calibration Point 1					
Real value	800 mV	800 mV	800 mV	800 mV	800 mV
Logical value	000%	- 40ºC	0000 W/m²	0 km/h	0º
Calibration Point 2					
Real value	4000 mV	4000 mV	4000 mV	4000 mV	4000 mV
Logical value	100%	85.0ºC	2000 W/m²	120 km/h	360º

DIGITAL SENSOR

The rainfall gauge sensor, with pulsed digital output, determines the litres/m² of rain accumulation.

To configure the weather station's rainfall gauge, go to:

- **Function | Settings | Sensors | Counters** (Agrónic 2500, 5500, Bit)
- **Function | Settings | Sensors | Digital | Function 35** (Agrónic 4000)

Once in, configure the settings according to the following table.

Rainfall gauge sensor format

Setting	Value to configure
Sensor	1
Input No.*	1
Pulse value	00000.20 L
Maximum time between pulses	600"
Flow in	000.00 L/h
Accumulated in	000.00 L/m²
Text	Rainfall gauge

** In the Agrónic 4000, the digital input must be 12.*

IMPORTANT

In the Agrónics 2500/5500 and Bit, check that the digital input is configured to work as a rainfall gauge. This configuration varies depending on the controller.

From the Agrónic 2500/5500 menu, go to:

- **Function | Settings | Sensors | Counters**
  - **Type: rainfall gauge**

From the Agrónic Bit menu, go to:

- **Function | Settings | Installer | Misc**
  - **Input D1: rainfall gauge**

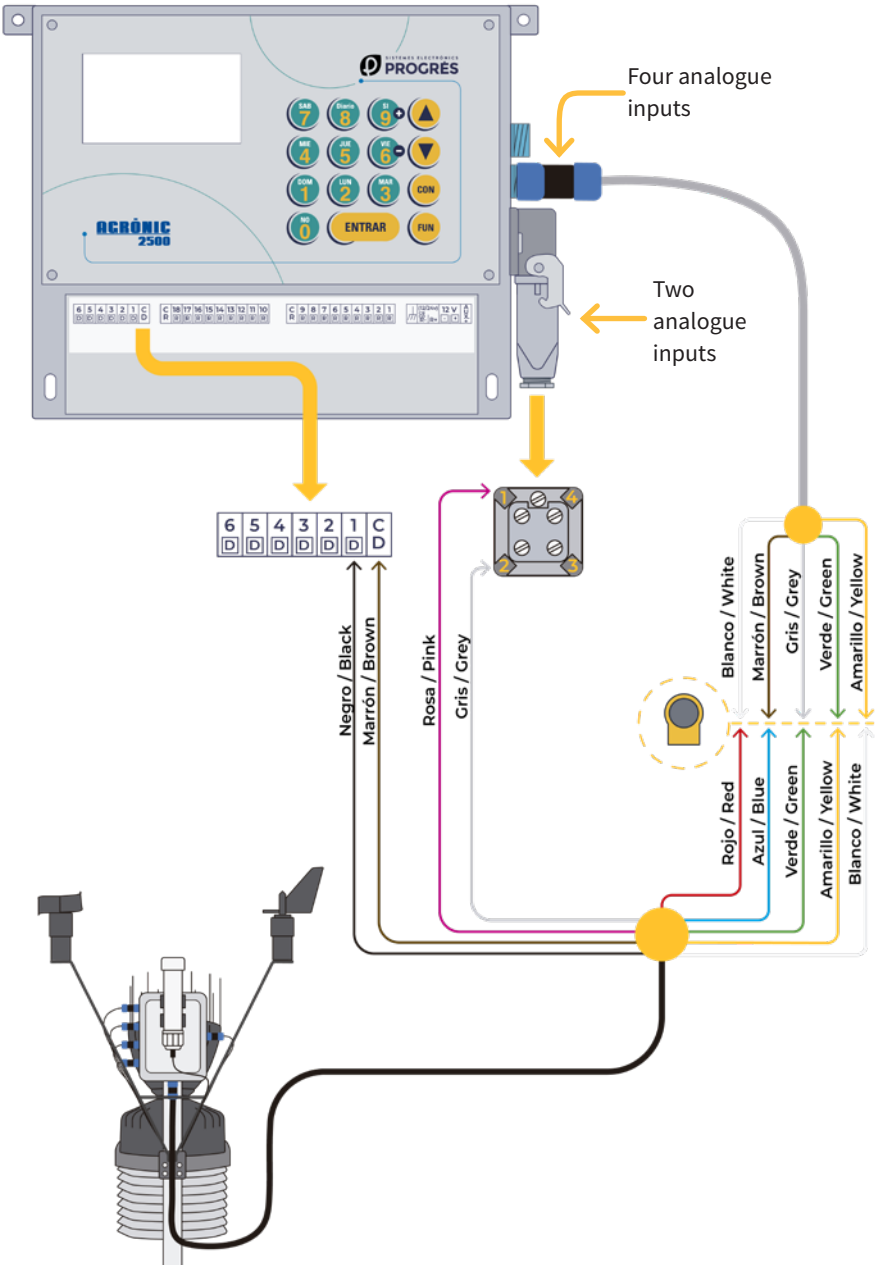
Compatibility table

AGRÓNIC 2500	AGRÓNIC 4000	AGRÓNIC 5500	AGRÓNIC 7000	AGRÓNIC BIT
✓	✓	✓		✓

AgroBee-L	AgroBee	A. MONOCABLE	AGRÓNIC RADIO
✓	✓		

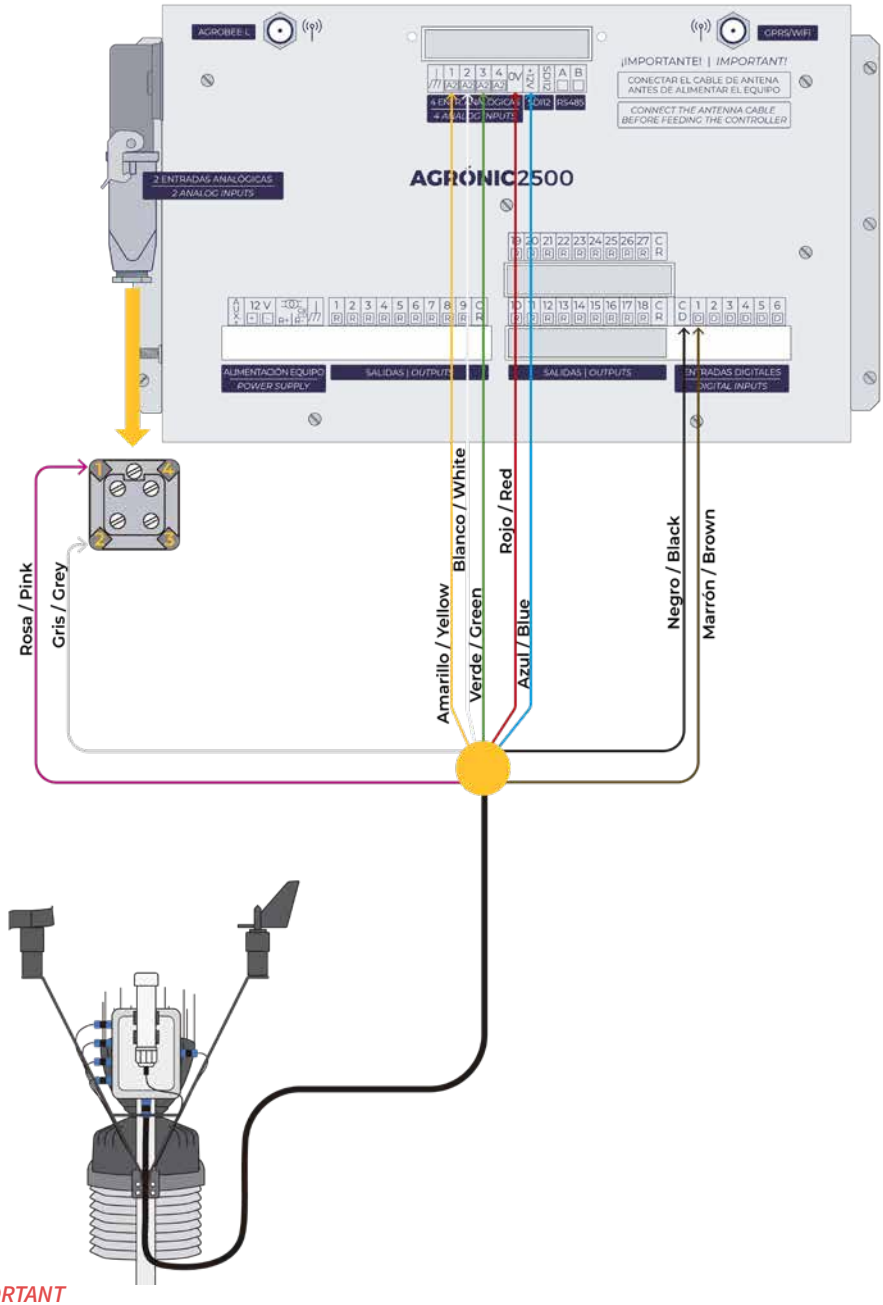
Connection examples

AGRÓNIC 2500 BOX MODEL



IMPORTANT

Maximum cable length between station and controller: **200 m** (minimum section 0.5 mm^2).



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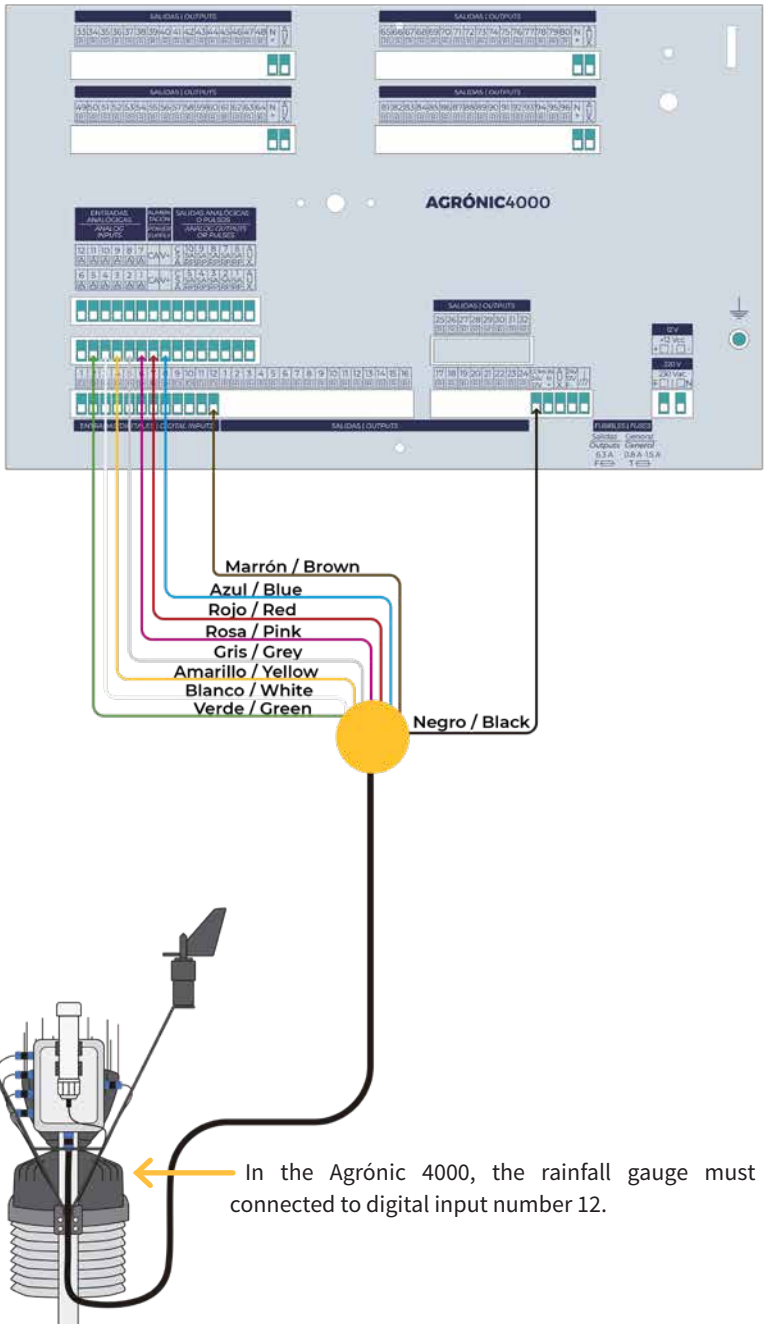


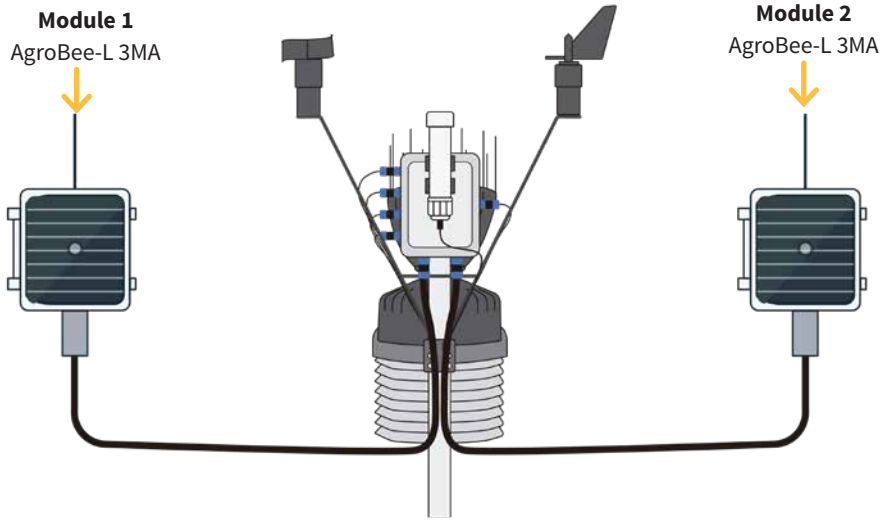
In the Agrónic 4000, the rainfall gauge must be connected to digital input number 12.

IMPORTANT

Maximum cable length between station and controller: **200 m** (minimum section 0.5 mm^2).

TWO MODULES AGROBEE-L 3MA

In this special model, the connection with the two AgroBee-L 3MA modules is made directly with two cables with connectors.



IMPORTANT

Maximum cable length between the station and AgroBee-L 3MA: **50 m** (minimum section 0.5 mm^2).

Maintenance

For correct operation, some of the sensors require annual maintenance.

- **Rainfall gauge**:
  - Remove the leaf filter and remove any solids that may be clogging it.
  - Clean the scoop, the funnel hole in the cone, and the drains in the base.
- **Solar radiation**: It may be necessary to clean the top dome due to any dirt deposits. In this case, clean with a damp cloth with water, alcohol or a non-abrasive product.

Problem resolution

THE RAINFALL GAUGE DOES NOT COUNT OR ACCUMULATE ANY DATA

- Check that the flange that protects the tipping container inside the rainfall gauge has been cut. (P. 5)

THE SENSOR(S) ARE NOT READING ANYTHING

- Check that the sensors are well connected to the connection box. (P. 6)

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