

Manual

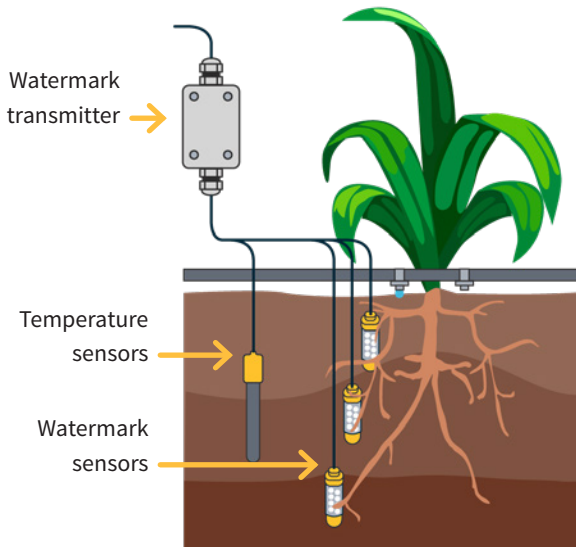
3 Watermark Transmitters with °C sensor

CODE 06750006

Transmitter for reading soil water potential sensors of the “Watermark 200SS” type. Includes temperature sensor for value compensation contributed by the Watermark sensor.

It offers the following benefits:

- Reading of up to **three Watermark sensors**.
- Includes an **external temperature sensor** for compensation of the reading provided by the Watermark sensor.
- The transmitter adapts the signals coming from the sensors and generates an output in standard 4-20 mA current values.



The transmitter supplies the necessary supply voltage independently to each of the sensors it can manage.

Technical characteristics

Power supply

Power supply	12 Vdc to 20 Vdc	
Energy consumption	3 sensors: less than 0.9W	
Overvoltage fuse	Input	Thermal (PTC) 0.4 A at 25°C, self-resettable
Reverse Current Protection	Yes	

Outputs

Output sign	4 – 20 mA	3 outputs
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Inputs

Number	1, 2, or 3
Type	Analogue (12 bits)

Response time

Minimum transmitter power supply time to receive reading:		
1 sensor: 250 ms	2 sensors: 400 ms	3 sensors: 500 ms

Maximum distance

Transmitter power supply (12 Vdc, with 2x1.5mm ² cable):
3 sensors: 100 metres
From sensor to transmitter: 50 metres
4-20 mA current output: 1000 metres

Environment

Temperature	-10 °C to +60 °C
Degree of protection	IP65
Moisture	< 95 %
Height	2000 m
Pollution	Grade II

Transmitter box dimensions

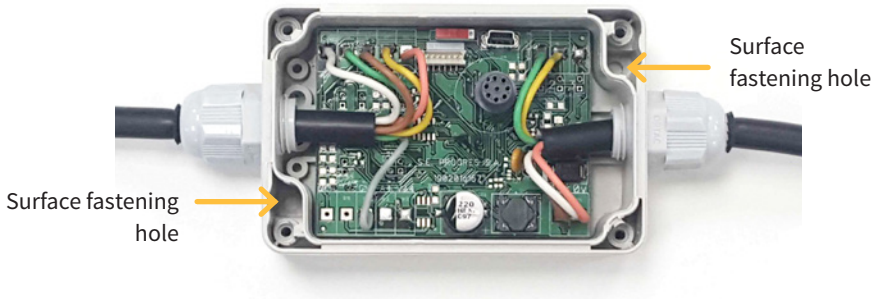
Height	99 mm
Width	65 mm
Depth	39 mm
Weight (approx.)	0,4 Kg



This symbol indicates that electronic devices should not be disposed of along with household waste at the end of its useful life. The product must be taken to the corresponding collection point for recycling and properly treating electronic equipment in accordance with the national legislation.

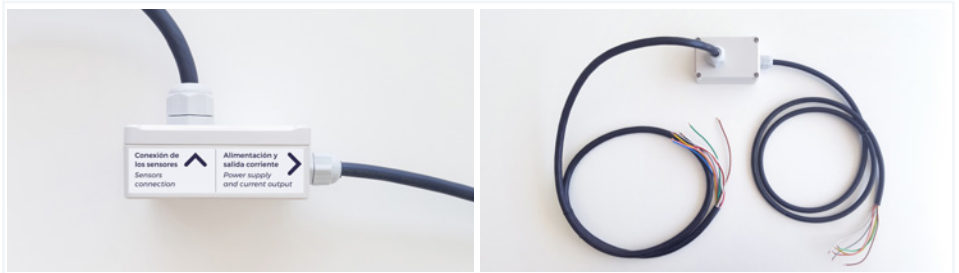
Installation

- The transmitter should be positioned horizontally so that moisture does not accumulate at the ends.
- The transmitter should be placed in a location that is not directly exposed to sunlight.
- It is absolutely necessary to keep the box water-tight.
- Feed the hose cable through the stuffing box and tighten them as well as you can.
- Do not place the transmitter cables next to power lines.



Connecting

The transmitter is provided with two 1.5m cable hoses that allow you to make different connections more easily without the need to access the interior.



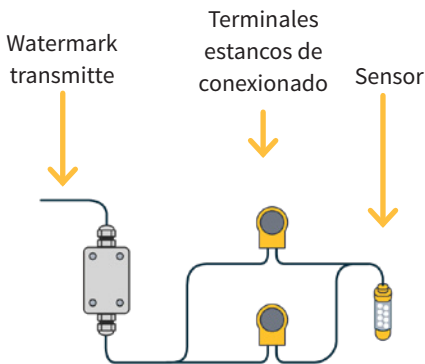
Sensor connection hose, 9-wire:

<i>Sensor connection</i>			
Wire colour	ID	Function	
White	A1	Analogue input sensor 1	
Brown	VA1	Sensor power supply 1	
Green	A2	Analogue input sensor 2	
Yellow	VA2	Sensor power supply 2	
Grey	A3	Analogue input sensor 3	
Pink	VA3	Sensor power supply 3	
Blue	VA4	Terminal “+” temperature sensor (blue)	
Red	A4	Terminal “-“ temperature sensor (brown)	
Black	GND	Temperature sensor grid	

6-wire power supply and current output connection hose:

<i>Power supply and current output</i>			
Wire colour	ID	Function	
White	0V	- (negative) power supply	
Brown	12V	+ (positive) power supply	
Green	S1	Output 1: 4 – 20 mA	
Yellow	S2	Output 2: 4 – 20 mA	
Grey	S3	Output 3: 4 – 20 mA	

Consult the manual of each sensor for detailed information about how to install and connect it.



To guarantee that the module hose wire connections are water-tight, it is recommended that you use water-tight terminals. Do not strip the cable wires when making the connection through these terminals.

The 3M Scotchlok series (www.3m.com), ES Caps from TYCO Electronics (www.tycoelectronics.com), or Cellpack resin connection and derivation kits (www.cellpackiberica.com) can be used as connection elements.


NOTE





It is recommended that loose cables also be connected with an excess 3M connector to avoid possible short circuits or from them getting wet.

Configuration



The transmitters are generally configured at the factory. However, it is possible to make consultations or configurations by using a “Module Reader,” consisting of a screen and four keys that are connected to the transmitter through the only visible connector inside.

Press the  key to enter the main menu.

With the  and  keys, you can change the option within the menu. With the  key, you can enter the selected menu option. With the  key, the previous hierarchy.

Within the main menu, you can see the following options:

- Consultation
- Configuration

CONSULTATION MENU

Transmitter general reference menu, where you can view:

- Controller firmware version No.
- Transmitter type (depending on the sensor used)
- Consult the value in cbar that the sensors deliver, (from input 1 (A1) to input 3 (A3))
- Consultation of the 4-20 mA current value being delivered (output 1 to 3)

CONFIGURATION MENU

Configuration menu in which you can configure the number of sensors that the transmitter will read:

- No. Inputs: 1, 2, or 3

WATERMARK SENSOR FORMAT

- **Watermark 200SS** The sensor offers resistance based on the groundwater potential value, which the Watermark transmitter converts to the corresponding value in cbar:

The value in cbar is converted, by the transmitter itself, to the standard 4-20 mA current (800-4000 mV in the Agrónic format). So, in the controller in question, you have to select the data format indicated here. It is the responsibility of the user to change the data that characterizes said format.

<i>200SS Watermark sensor format</i>	
Parameter	Default value
N. of integers	3
N. of decimals	0
Sign	no
Unit	cbar
Calibration Point 1	
True value	800 mV
Logical value	000 cbar
Calibration Point 2	
True value	4000 mV
Logical value	239 cbar

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