Option

SDI-12

Configuration and consultation for
Agrónic 2500 and Agrónic 5500

ÍNDICE

1. Description

The Agrónic 2500 and the Agrónic 5500 have an SDI-12 bus where you can connect devices that use this type of communication.

The bus is made up of 3 wires (+12Vdc, GND, and data) where up to 8 devices can be connected at to maximum distance of 50 metres. Each device can have multiple sensors.

In order to use the SDI-12 bus in an Agrónic 5500, the controller must have the SDI-12 option activated. In an Agrónic 2500, in addition to having the SDI-12 option activated, the controller must have the Plus version.

2. Configuration

The system configuration can be accessed through "Parameters – Installer - Communications - SDI-12."

All of the operating parameters of the sensors that are connected to the Agrónic can be configured in "Device."

INSTALLER SDI-12
1. Device
2. Assign address

In "Assign address," you can configure the address of each of the devices. The parameters in this section should only be changed if instructed by the Progrés technical personnel.

2.1. DEVICE CONFIGURATION

The Agrónic allows you to connect up to 8 devices.
Device: number of the device to be configured.
From 1 to 8.

Model: there are different models, each with to specific function.

SDI-12
Device: 1
Model: 5TE Decagon

Model	Function
"5TE Decagon"	Reading of moisture, conductivity, and soil temperature.
"GS3 Decagon"	Reading of moisture, conductivity, and soil temperature.
"AquaCheck-4"	Reading of moisture and soil temperature at 4 different levels.
"AquaCheck-8"	Reading of moisture and soil temperature at 8 different levels.
"Meter Group Teros-12"	Reading of moisture, conductivity, and soil temperature.
"Sentek Drill&Drop"	Reading of moisture, conductivity, and temperature of the ground in 6 different levels.

Take care to ensure that the device number and model match the one connected to the Agrónic.

2.1.1. 5TE DECAGON MODEL CONFIGURATION

Device for reading the soil's volumetric water content (VWC), temperature, and EC (electrical conductivity).

SDI-12 1
Soil: Mineral
Format: 0
Density: 0.00

Soil type of soil.
[Mineral], [Mulch], [Rock wool], [Perlite].

Format data type sent by the sensor. From 0 to 3. Default 0.

- "0": agronomic. VWC[%], EC_pore water [mS/cm], Temp[°C]
- "1": raw values. ε, EC_bulk [mS/cm], Temp [°C]
- "2": EC saturation. VWC[%], EC_saturation [mS/cm], Temp[°C]

Density apparent density of the medium. From 0 to 2.65. Default 0. Only used if the format is "2."

Sensors *(analogue inputs)*			
No.	Description	Units	
01	Sensor: soil moisture	from 000,0 to 100,0	%
02	Sensor: soil EC	from 00,00 to 23,00	mS/cm
03	Sensor: soil temperature	from -40,0 to +50,0	ºC

2.1.2. GS3 DECAGON MODEL CONFIGURATION

Device for reading volumetric water content in the soil (VWC), temperature, and EC (electrical conductivity).

SDI-12 1
Soil: Mineral
Format: 0
Density: 0.00

Soil type of soil.
[Mineral], [Rock wool], [Peat], [Coconut fibre].

Format type of data that the sensor sends. From 0 to 3. Default 0.

- "0": agronomic. VWC[%], EC_pore water [mS/cm], Temp[°C]
- "1": raw values. ε, EC_bulk [mS/cm], Temp [°C]
- "2": EC saturation. VWC[%], EC_saturation [mS/cm], Temp[°C]

Density apparent density of the medium. From 0 to 2.65. Default 0. Only used if the format is "2."

Sensors *(analogue inputs)*			
No.	Description	Units	
01	Sensor: soil moisture	from 000,0 to 100,0	%
02	Sensor: soil EC	from 00,00 to 23,00	mS/cm
03	Sensor: soil temperature	from -40,0 to +50,0	ºC

2.1.3. AQUACHECK-4 MODEL CONFIGURATION

Device for reading the soil's volumetric water content (VWC), and temperature in 4 distinct depth levels. Level 1 indicates the shallowest depth.

SDI-12 1
Soil: Mineral

Soil type of soil.
[Mineral], [Sandy], [Clay], [Sandy-loam], [Loam], [Clay-loam]

Sensors *(analogue inputs)*			
No.	Description	Units	
01	Level 1: soil moisture.	from 000,0 to 100,0	%
02	Level 1: soil temperature.	from -40,0 to +50,0	ºC
03	Level 2: soil moisture.	from 000,0 to 100,0	%
04	Level 2: soil temperature.	from -40,0 to +50,0	ºC
05	Level 3: soil moisture.	from 000,0 to 100,0	%
06	Level 3: soil temperature.	from -40,0 to +50,0	ºC
07	Level 4: soil moisture.	from 000,0 to 100,0	%
08	Level 4: soil temperature.	from -40,0 to +50,0	ºC

2.1.4. AQUACHECK-8 MODEL CONFIGURATION

Device for reading the soil's volumetric water content (VWC), and temperature in 8 distinct depth levels. Level 1 indicates the shallowest depth.

SDI-12 1
Soil: Mineral

Soil type of soil.
[Mineral], [Sandy], [Clay], [Sandy-loam], [Loam], [Clay-loam]

Sensors (analogue inputs)			
No.	Description	Units	
01	Level 1: soil moisture.	from 000,0 to 100,0	%
02	Level 1: soil temperature.	from -40,0 to +50,0	ºC
03	Level 2: soil moisture.	from 000,0 to 100,0	%
04	Level 2: soil temperature.	from -40,0 to +50,0	ºC
05	Level 3: soil moisture.	from 000,0 to 100,0	%
06	Level 3: soil temperature.	from -40,0 to +50,0	ºC
07	Level 4: soil moisture.	from 000,0 to 100,0	%
08	Level 4: soil temperature.	from -40,0 to +50,0	ºC
09	Level 5: soil moisture.	from 000,0 to 100,0	%
10	Level 5: soil temperature.	from -40,0 to +50,0	ºC
11	Level 6: soil moisture.	from 000,0 to 100,0	%
12	Level 6: soil temperature.	from -40,0 to +50,0	ºC
13	Level 7: soil moisture.	from 000,0 to 100,0	%
14	Level 7: soil temperature.	from -40,0 to +50,0	ºC
15	Level 8: soil moisture.	from 000,0 to 100,0	%
16	Level 8: soil temperature.	from -40,0 to +50,0	ºC

2.1.5. METER GROUP TEROS-12 MODEL CONFIGURATION

Device for reading volumetric water content in the soil (VWC), temperature, and EC (electrical conductivity).

Soil type of soil.
[Mineral], [Rock wool], [Peat], [Coconut fibre]. Only Mineral and Peat are valid.

SDI-12 1
Soil: Mineral
Format: 0
Density: 0.00

Format Data type sent by the sensor. From 0 to 3. Default 0.

- "0": agronomic: VWC[%], EC_pore water [mS/cm], Temp[°C]
- "1": raw values: ε, EC_bulk [mS/cm], Temp [°C]
- "2": agronomic: VWC[%], EC_saturation [mS/cm], Temp[°C]

Density apparent density of the medium. From 0 to 2.65. Default 0. Only used if the format is "2."

Sensors (analogue inputs)			
No.	Description	Units	
01	Sensor: soil moisture | Formats 0 y 2.	from 000,0 to 100,0	%
01	Sensor: raw value ε. | Format 1.	from 01.0 to 80.0	
02	Sensor: soil EC	from 00,00 to 23,00	mS/cm
03	Sensor: soil temperature	from -40,0 to +60,0	ºC

2.1.6. SENTEK DRILL&DROP MODEL CONFIGURATION

Device for reading the soil's volumetric water content (VWC), temperature, and conductivity (VIC: Volumetric Ion Content, provides trends in the conductivity value, but not its absolute value). Level 1 indicates the shallowest depth.

This device does not have configuration parameters.

SDI-12 1
Soil: Mineral

Sensors *(analogue inputs)*			
No.	Description	Units	
01	Level 1: soil moisture (VWC)	from 000,0 to 100,0	%
02	Level 1: conductividad del suelo (VIC)	from 0 to 10000	
03	Level 1: soil temperature.	from -20,0 to +60,0	ºC
04	Level 2: soil moisture (VWC)	from 000,0 to 100,0	%
05	Level 2: conductividad del suelo (VIC)	from 0 to 10000	
06	Level 2: soil temperature.	from -20,0 to +60,0	ºC
07	Level 3: soil moisture (VWC)	from 000,0 to 100,0	%
08	Level 3: conductividad del suelo (VIC)	from 0 to 10000	
09	Level 3: soil temperature.	from -20,0 to +60,0	ºC
10	Level 4: soil moisture (VWC)	from 000,0 to 100,0	%
11	Level 4: conductividad del suelo (VIC)	from 0 to 10000	
12	Level 4: soil temperature.	from -20,0 to +60,0	ºC
13	Level 5: soil moisture (VWC)	from 000,0 to 100,0	%
14	Level 5: conductividad del suelo (VIC)	from 0 to 10000	
15	Level 5: soil temperature.	from -20,0 to +60,0	ºC
16	Level 6: soil moisture (VWC)	from 000,0 to 100,0	%
17	Level 6: conductividad del suelo (VIC)	from 0 to 10000	
18	Level 6: soil temperature.	from -20,0 to +60,0	ºC

2.2. ASSIGN ADDRESS

Each device that is connected to the SDI-12 bus must have a different address. The devices connected to the Agrónic must have addresses from 1 to 8, which corresponds to the device number.

To configure the address, the device must be connected to the Agrónic SDI-12 bus, select the number of devices to be assigned and select “yes” to assign the address.

SDI-12
Device: 1
Assign address: yes

IMPORTANT

When configuring in the Agrónic, only one device can be connected--the one that is being configured.

2.3. INPUTS AND OUTPUTS ASSIGNMENT

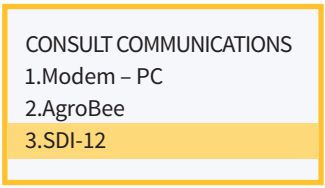
When an input or output of an SDI-12 device is assigned in any of the parameters of the Agrónic 2500 and Agrónic 5500, the first digit is always a ‘4,’ the following two figures indicate the device number, and the two last figures are the entry.

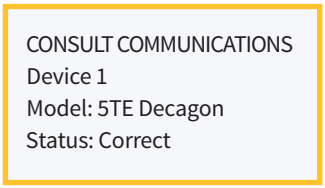
Analogue Inputs			
4 00 00			Description
4: SDI-12	01 – 08	01 - 24	The input values depend on the type of the device.

3. Consultation

To see the SDI-12 consultation, go to “Consultation - Communications - SDI-12.” There is a consultation screen for each device.

When you see a module consultation on the screen, press the “1” key to display the values of the device’s inputs. It displays the identifier read from the device and the value readings that the device delivers, up to three decimal places. If the device is an AquaCheck, it shows the moisture and temperature values of the first level.





Model: 5TE Decagon	Model that has been configured
State: No communication	There is no communication with the device.
State: Correct	The device is communicating correctly. The rest of the consultations only show them if the module status is correct.
State: Error	Communication with the device has been lost.
Model error	The model configured in the Agrónic does not correspond to that of the device.
Version: 4.02	Device software version.

When you see a module consultation on the screen, press the “1” key to display the values of the device’s inputs. It displays the identifier read from the device and the value readings that the device delivers, up to three decimal places. If the device is an AquaCheck, it shows the moisture and temperature values of the first level.

4. Connecting

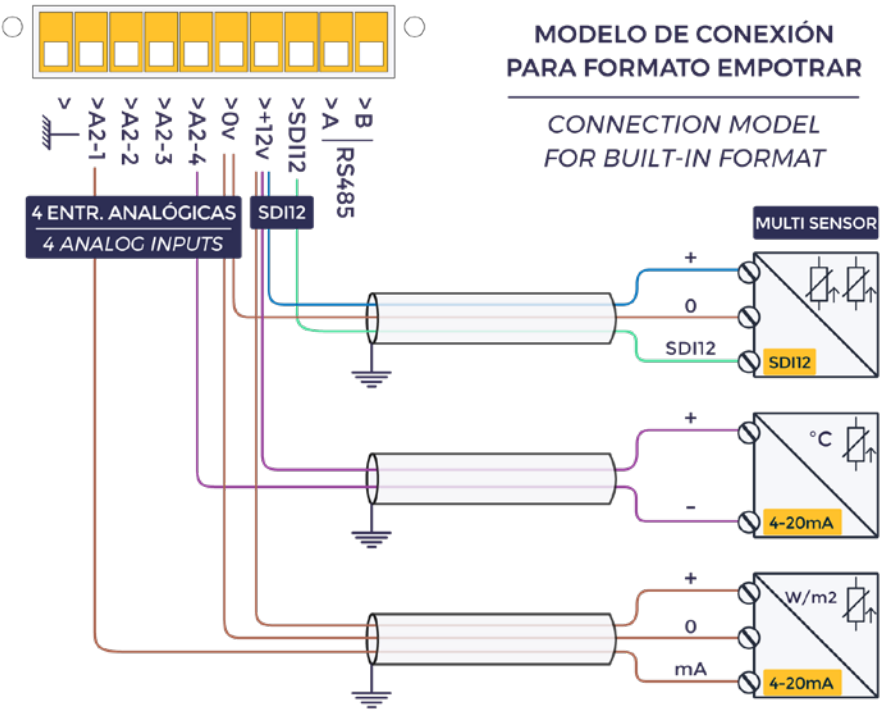
For box-type devices, connect the two connectors on the right side of the controller.

SDI12 BUS	Box-type cable colours
Common, 0V	Brown
Multi-sensor power, +12V	Blue
Multi-sensor digital output	Yellow/Green

4 ANALOGUE INPUTS	Box-type cable colours
Common, 0V	White
Sensor power supply, +12V	Brown
Sensor A2-1	Green
Sensor A2-2	Yellow
Sensor A2-3	Grey
Sensor A2-4	Pink

Example picture:
Agrónic 2500

For flush-mounted devices, the connections are located at the rear. Follow the wiring instructions in the image and on the table on the next page.



SDI12 BUS	Build-in format terminals
Common, 0V	0V
Multi-sensor power, +12V	+12V
Multi-sensor digital output	SDI12

4 ANALOGUE INPUTS	Build-in format terminals
Common, 0V	0V
Sensor power supply, +12V	+12V
Sensor A2-1	A2-1
Sensor A2-2	A2-2
Sensor A2-3	A2-3
Sensor A2-4	A2-4

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