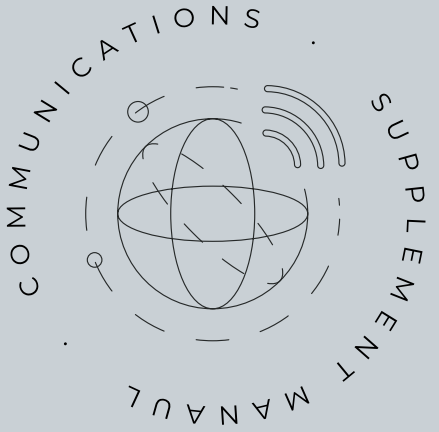
COMMUNICATIONS MANUAL

SMS / AGRÓNIC APP / VEGGA / AGRÓNIC PC

AGRÓNIC 2500

V1



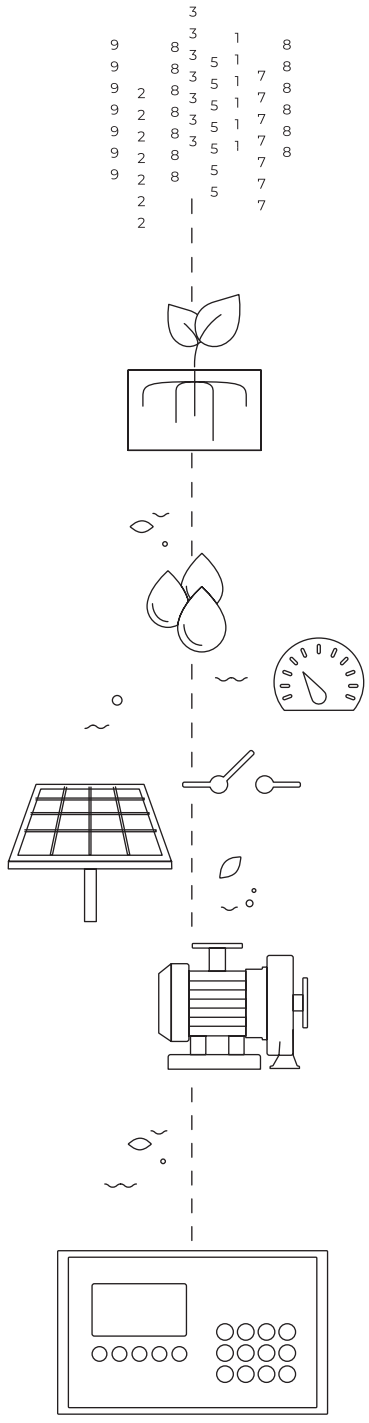
Sections included in this manual:

- Functional description
- Connexion
- Agrónic APP / VEGGA / Agrónic PC
- SMS messages
- Consultation Communications
- Technical support
- Function screens
- Consultation screens

The Parameters section is detailed in the Installer Manual.

The Programming, Manual actions and Consultation sections are detailed in the User Manual.

SISTEMES ELECTRÒNICS PROGRÉS



Welcome to the Agrónic 2500 Communications Manual.

Thank you for trusting the Agrónic 2500 for the automated management of your irrigation projects. This manual has been prepared to help you set up the controller connectivity easily and efficiently.

Throughout this document, you will find detailed instructions for setting the required communication parameters, ensuring optimal and reliable operation of the irrigation system. In addition, an overview of the available remote management tools is included.

Our goal is to facilitate the integration of Agrónic 2500 communications, optimizing its performance and improving the efficiency of the irrigation system.

Thank you for your dedication!

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1 FUNCTIONAL DESCRIPTION

The Agrónic 2500 remote management tools allow you to monitor and control the installation in real time, adjust irrigation according to crop needs, and detect possible incidents early.

This manual provides detailed instructions for the installation, configuration and use of these tools, in addition to describing the different connectivity options available.

Management tools

Management via SMS: Using SMS messages from a phone, various management actions can be executed on the Agrónic. Through SMS commands, it is possible to modify irrigation programs, perform manual actions, and receive notifications about alarms and system status, to maintain total control.

Agrónic PC: Windows software that makes it easy to configure, program, and monitor Agrónic controllers in real time, offering a more intuitive and accessible experience. It does not require registering the units in the Cloud, since it is installed directly on the computer and connects to the controllers via cable or the Internet.

Agrónic APP: Mobile application that allows you to check the Agrónic status, edit irrigation and fertilization programs, and execute direct manual commands. The app includes features such as maps, accumulated history, daily value charts, and events and anomaly logs.

VEGGA: It is a comprehensive agronomic solution that supports overall crop management and facilitates decision-making from a single platform.

It offers 360° management throughout the entire crop cycle: from data acquisition, information extraction, and problem detection, to decision-making and direct action in the field.

It digitizes all production processes, optimizing resource use and improving crop profitability.

It adapts to business needs through different solutions: precision irrigation, farm management, nutritional control, pest and disease control, agroclimatic recommendations, reports and technical analysis, among other functionalities.

The Agrónic requires a software option, along with one or more hardware options, to establish the connection with the management tools.

More info about remote management

More info on VEGGA website

Hardware and software options

Modem link + Connectivity (Cloud + PC): Allows connection with Agrónic PC, Agrónic APP and VEGGA via modem, in addition to receiving SMS messages from the unit. This option already includes the connectivity required to set up the connection.

WiFi link + Connectivity (Cloud + PC): Allows connecting with Agrónic PC, Agrónic APP and VEGGA through a WiFi router. This option already includes the connectivity for its configuration.

USB link + Connectivity (Cloud + PC): Direct connection with Agrónic PC via USB cable. The computer must be physically close to the Agrónic to establish communication. Includes the connectivity, which allows configuration.

Enlace RS485 PC + Conectividad (Nube + PC): Connection with Agrónic PC via USB cable, an RS485 link box and a two-wire cable up to the Agrónic. The computer must also have an RS485 link box. This configuration allows a distance of up to 1200 meters between Agrónic and computer and includes the connectivity for its configuration.

Items required to add to the unit depending on the type of management tool

Management via SMS:

Option to connect to the unit
Modem option / SMS messages option

Agrónic PC:

License to use	
Connectivity	For Agrónic PC. If desired, Agrónic APP and VEGGA can also be used.
Choose the option to connect to the unit	
Modem option	For long distance, even to other countries, and/or to use Agrónic APP and VEGGA: the unit must have a SIM card with an M2M contract. By default, we deliver this card inside the unit with Movistar coverage.
WiFi option	For short distance with a local network or long distance via the Internet.
Cable option	For local or mid-distance management.
Radio option	For distances from 1 to 20 km, depending on terrain.
Register the unit in the Cloud if you want to use Agrónic APP and VEGGA	
Registration at	app.veggadigital.com

Agrónic APP and VEGGA:

Choose the license to use	
Connectivity	For Agrónic PC and/or Agrónic APP and VEGGA.
Choose the option to connect to the unit	
Modem option	The unit must have a SIM card with an M2M contract. By default, we deliver this card inside the unit with Movistar coverage.
WiFi option	For short distance with a local network or long distance via the Internet.
Register the unit in the Cloud	
Registration at	app.veggadigital.com

Examples

- You need to manage the Agrónic 2500 from VEGGA or Agrónic APP interchangeably:

  Install the Modem link + Connectivity option or WiFi link + Connectivity option in the controller. Make sure there is a WiFi router on the farm connected to the Internet. Register the Agrónic in the Cloud.

- You need to manage Agrónic PC via the Internet:

  Install the Modem link + Connectivity option or WiFi link + Connectivity option in the controller. Download and install the Agrónic PC software on the computer. Make sure there is a WiFi router on the farm connected to the Internet. Optionally, the installer can also configure the Agrónic PC software on their own computer if required.

- You need to manage Agrónic PC:

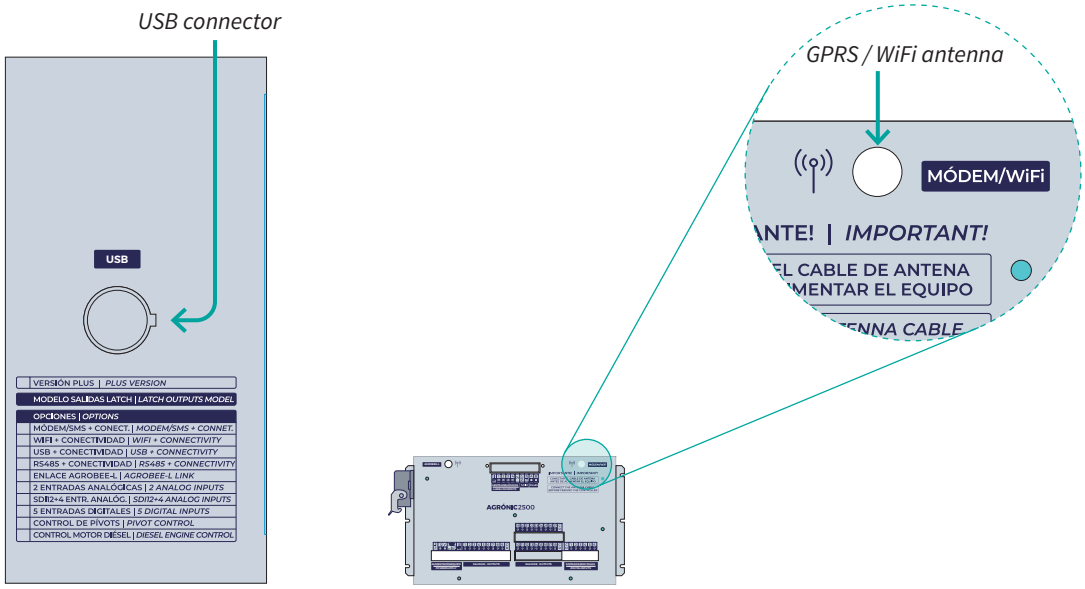
  Install the USB link + Connectivity option or RS485 link + Connectivity option in the controller. Download and install the Agrónic PC software on the computer.

Manual of steps to follow to use VEGGA or Agrónic APP

2 CONNEXION

The Agrónic 2500, both in box format and built-in format, has clearly marked connection points for connecting antennas and cables corresponding to the communication options, either for management tools in the Cloud or for cable connections.

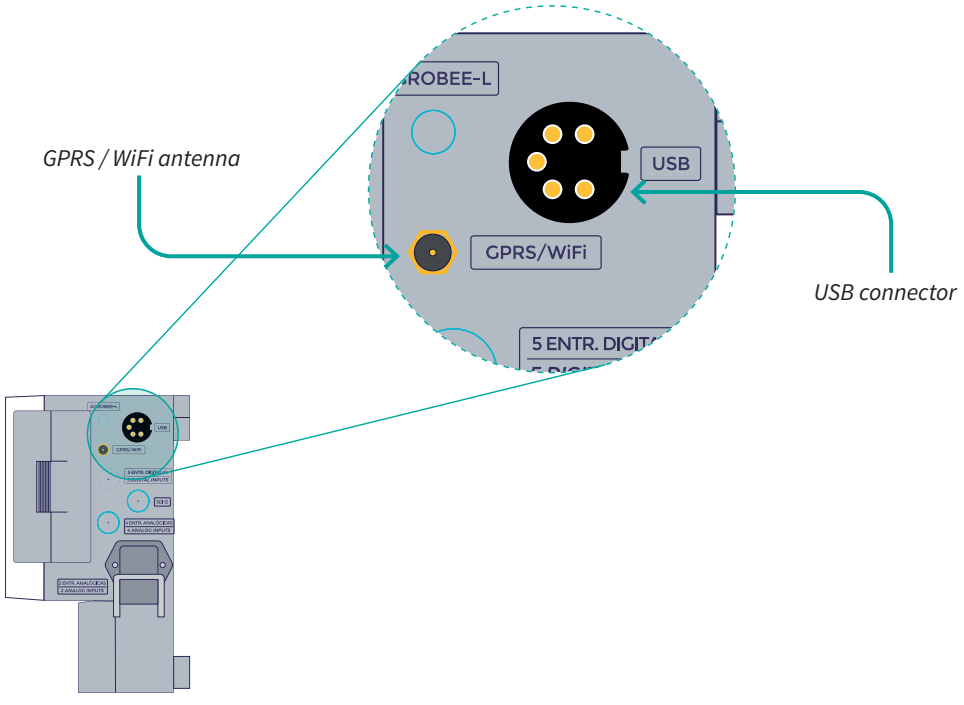
Built-in format



Left profile

Rear view

Box format



Right profile

Modem link option

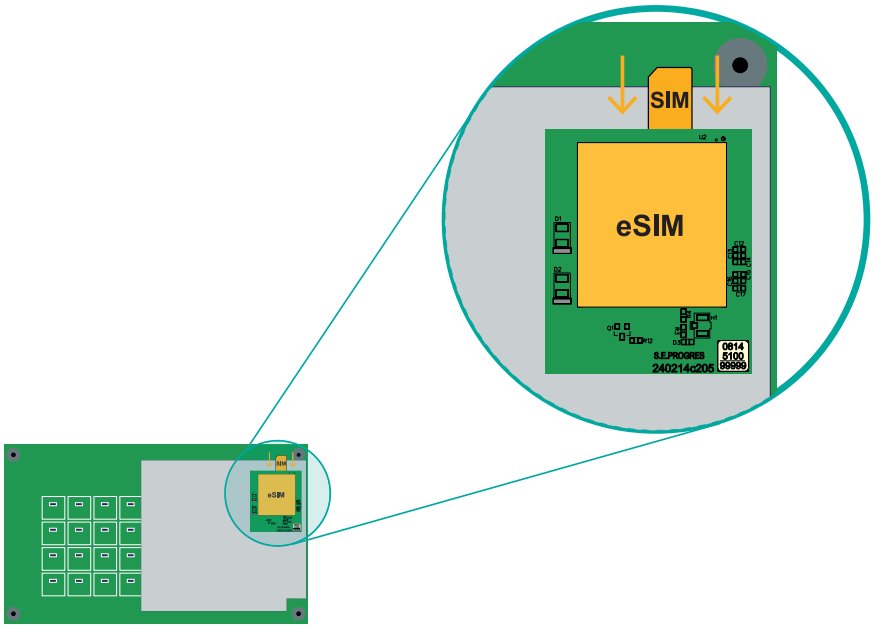
The Modem link + Connectivity option includes a Progrés eSIM card (for Quectel BG96 CAT-M modem type or Quectel EG21 4G, 3G, 2G). This card is activated when the unit is registered in the Cloud.

If you want to use an external SIM card, you will need to access the inside of the unit to insert it. To do so, you must first disconnect the main power supply. In the box model, remove the four screws that hold the keypad. In the built-in format, remove the six screws that secure the front to the metal box.

Once you have access to the rear of the keypad, locate the SIM holder connector on the main circuit board, and in the rear area behind the LCD screen, just above the connector, is the circuit that contains the modem.

Insert the SIM card as indicated in the figure (notch at one end of the card), making sure it is placed correctly.

By default, the controller is configured to work with the eSIM card. To change and use a Progrés SIM, go to 'Function - 4. Parameters - Installer - 6. Communication - 1. Modem connection' and answer No to the internal SIM question.



Micro board
(located behind the keypad)

External SIM card

3 TECHNICAL SPECIFICATIONS

The technical specifications of each communication option available in the Agrónic 2500 are detailed below.

3.1. SMS MESSAGES OPTION / PC LINK WITH GSM-GPRS

- LTE CAT-M, NB-IoT, 2G modules integrated in the Agrónic 2500 (use in Spain):

Offers maximum data rates of 375 kbps on downlink and uplink, with operating temperature in the range of -30 to +75 °C and power supply from 3.3 to 4.3 V.

Bands:

Cat M1 & NB1:

LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28

LTE-TDD: B39

GSM:

GSM850/EGSM900

DCS1800/PCS1900

- QUECTEL EG21: : LTE 4G, 3G, 2G modules integrated in the Agrónic 2500 (use in other countries):

The module offers maximum download speeds of 10 Mbps and upload speeds of 5 Mbps in LTE, with operating temperature in the range of -35 to +75 °C and power supply from 3.3 to 4.3 V.

Bands:

4G:

LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13 B18/B19/B20/B25/B26/B28

LTE-TDD: B38/B39/B40/B41

3G:

WCDMA: B1/B2/B4/B5/B6/B8/B19

GSM:

GSM850/EGSM900

DCS1800/PCS1900

3.2. RADIO LINK

- Communication carried out in the 433 MHz license-free band.
- Has 99 channels.
- The maximum distance between two communication points is 1200 meters under optimal conditions.
- Repeater capacity: each module can retransmit signals up to 9 successive levels (the higher the number of levels, the longer the equipment response time).
- Power consumption in receive: 0.08 W and in transmission: 0,15 W.

3.3. WIFI

- 2.4 GHz Wi-Fi module (IEEE 802.11 b/g/n) + Bluetooth 5.2.
- Integrated processor / MCU: up to ~ 120 MHz internal frequency.
- Integrated memory: ~ 256 KB RAM and 2 MB / 4 MB flash for firmware, network stacks and others.
- Operation over a wide temperature range: from –40 °C to +85 °C.
- Low consumption, saving modes and keep-alive mechanisms to maintain lightweight connections with low energy cost.

4 AGRÓNIC APP, VEGGA AND AGRÓNIC PC

The configuration of Agrónic 2500 communication with Agrónic PC or cloud-based applications, such as Agrónic APP and VEGGA, is divided into two categories of parameters. On the one hand, Installer Parameters are responsible for configuring Internet connectivity, while Communication Parameters are responsible for establishing each user's connection with the platforms.

4.1. INSTALLER PARAMETERS

To access, press 'Function - 4. Parameters - Installer', enter the installer code and go to section '6. Communications' in the menu.

Depending on the type of link to be used, we will enter some of these sections:

- 1. Modem connection
- 3. Radio link
- 4. PSEP protocol
- 6. WiFi connection

INSTALLER COMMUNICATIONS

1 Modem connection
2 SMS messages
3 Radio link
4 PSEP protocol
5 Agrobee
6 WiFi connection
7 SDI-12

Below, an example explains how to parameterize the Agrónic and how to interpret the questions in each section:

Ejemplo

INTERPRETATION EXAMPLE

Monthly limit: 000 MB
Start day: 01
Automatic APN: yes

Monthly limit *(000 | 999)*

- Underlined value or number: Indicates the default value configured in the controller.

Start day *(01 ... 15 ... 28)*

- Numbers or options in parentheses: Indicates the minimum and maximum possible configuration range, or the different options the controller allows.

Automatic APN *(yes | no)*

- Indicates that there are options to modify.

4.1.1 Installer - Modem connection

Configuration screen for the Internet connection via modem. To access, press 'Función - 4. Parámetros - Instalador - 6. Comunicación - 1. Conexión Módem'

In the following questions, the numbers or options in parentheses indicate the possible values to configure.

INSTALLER MODEM CONNECTION

Modem consumption
Monthly limit: 000 MB
Start day: 01
Internal SIM: yes
PIN: 0001
Automatic APN: yes
APN: progres.movistar.es
APN user: movistar
APN password: movistar

Monthly limit *(0 ... 999 MB):* When data usage exceeds the limit set here, record '52' is made. If it is left at 0, no record is made. When the month changes or the limit is exceeded, the data counter is set to 0.

Start day *(01 ... 28):* Day of the month on which accumulated data is set to 0. It corresponds to the day the phone company issues the invoice.

Internal SIM *(Yes | No)*

- Yes: To use the eSIM integrated in the modem link. With this card you can connect to the Cloud (Agrónic APP and VEGGA) and to Agrónic PC.
- No: To use the user's external SIM card inserted in the socket. The SIM can be from any operator.

PIN *(0000 to 9999):* SIM card PIN code. If the SIM card lock is not enabled, this code will not be used.

Automatic APN *(yes | no)*

APNs are used to make the Internet connection and vary from one company to another.

- Yes: The Agrónic looks for the appropriate APNs according to the company. If the SIM card company is not on its list, it configures it for Movistar. APN values can be changed manually if they are not correct.
- No: APN values must be entered manually, and you must check whether the operator is on the list. If it is, you only need to select the number and confirm. The operators are: Movistar - Progres Movistar - M2M Movistar - Orange (Spain) - Vodafone (Spain) - Tuenti - Simyo - Yoigo - Vodafone PT - Tmn (Portugal) - MasMovil - Jazztel.

APN | User APN | Password APN the values of these fields vary depending on the SIM card company. They must be checked with your company to enter the correct ones. If they are not correct, you will not be able to have GPRS connection with Agrónic PC or the Cloud.

To enter or edit texts, place the cursor on the corresponding field and press the '+' key to access edit mode. Once inside, the keys work as follows:

- '+' Key: move the cursor one character to the right.
- '-' Key: move the cursor one character to the left.
- Up arrow: changes the current character to the previous one in the sequence (for example, the letter B will change to A).
- Down arrow: changes the current character to the next one in the sequence (for example, the letter B will change to C).
- ENTER: confirms the entered text and advances to the next field or value.
- '1' Key: uppercase letters.
- '2' Key: lowercase letters.
- '3' Key: numbers.
- '4' Key: symbols.
- 'NO' Key: deletes the current character and moves the cursor one space to the left.

When the Agrónic 2500 is powered by a battery, a diesel pump or a solar panel, modem activation schedules and cadences can be configured to reduce consumption. If the modem is required to be active continuously, all values must be left at 0.

MODEM PARAMETERS

Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'

To activate the modem during a specific period of the day, a start time and an end time must be set. For example, to activate from 8:00 to 17:00:

Start time: 08:00 End time: 17:00

Cadence: 00:00 Time: 000'

It is also possible to activate the modem within a time window of the day, but only for a specific time at a specific cadence. For example, activate between 8:00 and 22:00, for 15 minutes every hour:

Start time: 08:00 End time: 22:00

Cadence: 01:00 Time: 015'

An event marked as 'urgent' will generate the immediate sending of an SMS message at the moment it occurs. The controller will switch on the modem power supply if necessary to send it. For example, if a determining factor acts as an alarm warning, an SMS will be sent to users at the moment an attempted theft is detected, regardless of the time of day.

4.1.2 Installer - Radio link

When the connection with the Agrónic PC software is made via radio link, a license-free band radio system is used, which does not require legalization. The radio link has up to 99 channels for exchanging information. To access the configuration, press 'Function - 4. Parameters - Installer - 6. Communication - 4. Radio link'

INSTALLER RADIO LINK

Channel: 05

When the Agrónic 2500 is powered by a battery, a diesel pump or a solar panel, radio link activation schedules and cadences can be configured to reduce consumption. If the radio link is required to be active continuously, all values must be left at 0.

RADIO LINK PARAMETERS

Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'

To activate the radio link during a specific period of the day, a start time and an end time must be set. For example, to activate from 8:00 to 17:00:

Start time: 08:00 End time: 17:00

Cadence: 00:00 Time: 000'

It is also possible to activate the radio link within a time window of the day, but only for a specific time at a specific cadence. For example, activate between 8:00 and 22:00, for 15 minutes every hour:

Start time: 08:00 End time: 22:00

Cadence: 01:00 Time: 015'

4.1.3 Installer - PSEP

PSEP is the protocol used for communication between the controller, the computer and the cloud. To access the configuration, press 'Function - 4. Parameters - Installer - 6. Communication - 4. PSEP protocol'

INSTALLER PSEP PROTOCOL

Cadence A: 0015 "
Cadence B: 0300 "
Accumulated cadence: 0600"

AGRONIC IP
Port 1: 02332
Port 2: 12332
Port 3: 22332
IP: 000.000.000.000
IP name: agronic.es
Agronic server Port: 02530

Cadence A *(1 ... 9999 MB):* Time interval between sends to the computer or to the cloud of modified queries that are being displayed on screen.

Cadence B *(1 ... 9999 MB):* Time interval between sends to the computer or to the cloud of modified queries that are not being displayed on screen.

Agrónic IP: The parameters in this section must only be modified under express instruction from Progrés technical support, since they are intended for the controller connection with the user's computer via the Internet.

4.1.4 Installer - WiFi link

Parameters for configuring the Internet connection via a WiFi router. To access the configuration, press 'Function - 4. Parameters - Installer - 6. Communication - 6. WiFi connection'

INSTALLER WIFI PARAMETERS

Network: WIFINaranjos
Password: 4rF5gH6UjqA

Network *(39 characters):* Name of the WiFi network (SSID) where the unit should connect.

When the Agrónic 2500 is powered by a battery, a diesel pump or a solar panel, WiFi activation schedules and cadences can be configured to reduce consumption. If WiFi is required to be active continuously, all values must be left at 0.

WIFI PARAMETERS

Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'

To activate WiFi during a specific period of the day, a start time and an end time must be set. For example, to activate from 8:00 to 17:00:

Start time: 08:00 End time: 17:00

Cadence: 00:00 Time: 000'

It is also possible to activate WiFi within a time window of the day, but only for a specific time at a specific cadence. For example, activate between 8:00 and 22:00, for 15 minutes every hour:

Start time: 08:00 End time: 22:00

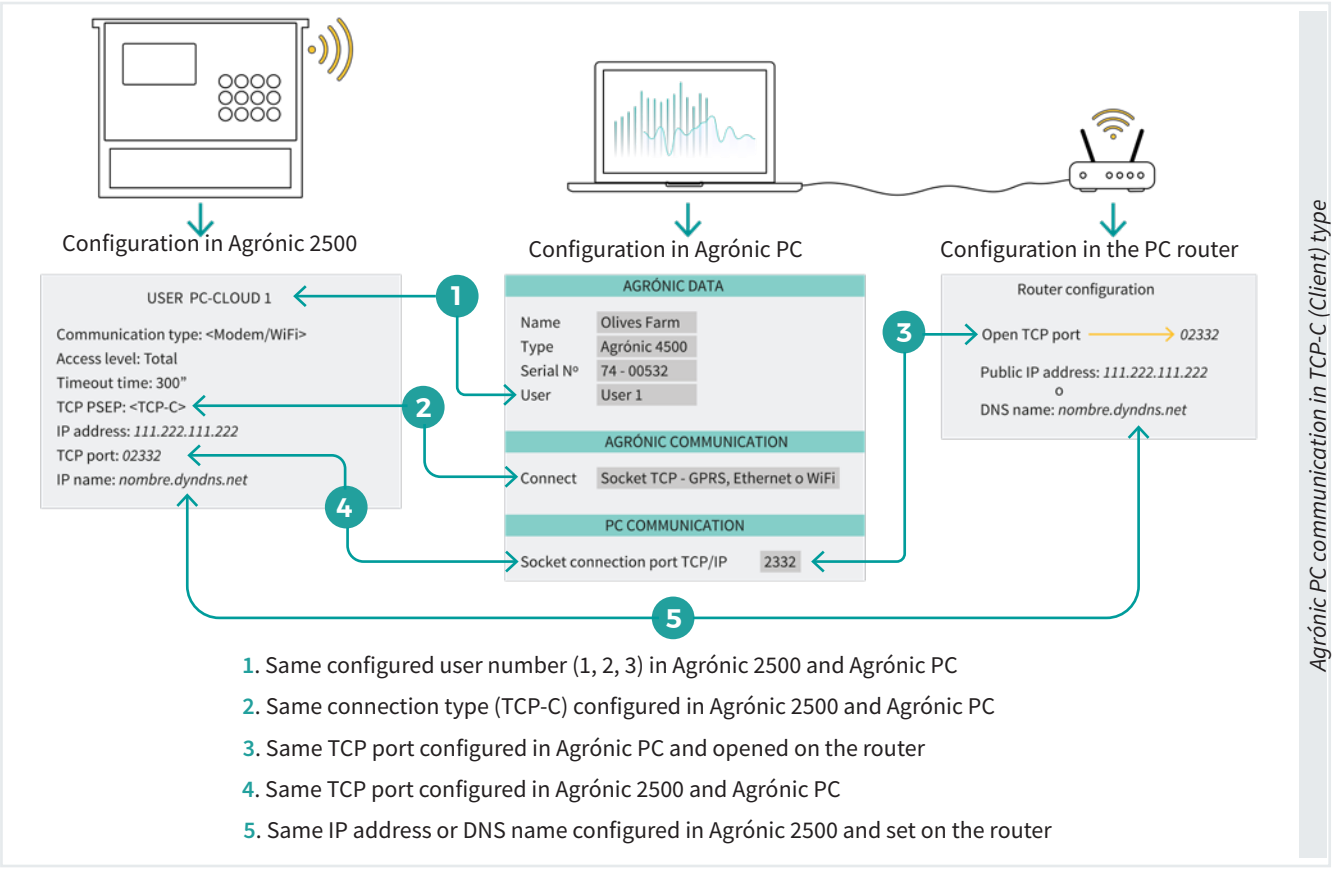
Cadence: 01:00 Time: 015'

4.1.4.1 WiFi communication via Agrónic PC platform

TCP-C type (Client)

This type of connection uses the TCP-C (Client) protocol, where the Agrónic initiates communication with the PC. To ensure proper communication between the Agrónic and the PC, it is essential to consider the following aspects:

- Port opening. It is necessary to open a TCP port on the router. This port must match the one previously configured in the Agrónic.
- Public IP address (fixed). The router must have a static (fixed) public IP address. If you do not have a static IP, it is essential to use a DNS name to maintain connectivity between the Agrónic and the PC.



1. Same configured user number (1, 2, 3) in Agrónic 2500 and Agrónic PC
2. Same connection type (TCP-C) configured in Agrónic 2500 and Agrónic PC
3. Same TCP port configured in Agrónic PC and opened on the router
4. Same TCP port configured in Agrónic 2500 and Agrónic PC
5. Same IP address or DNS name configured in Agrónic 2500 and set on the router

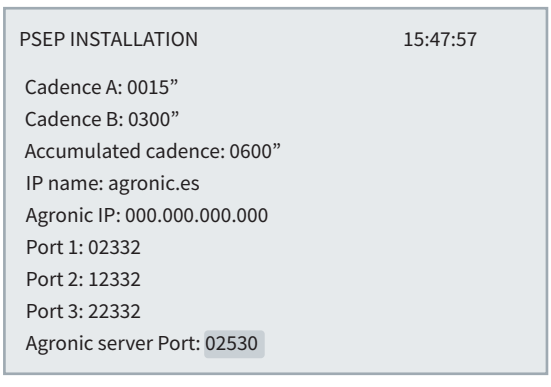
TCP-S type (Server)

This type of connection uses the TCP-S (Server) protocol, in which the PC initiates the connection to the Agrónic through a server.

To ensure an adequate connection between the Agrónic 2500 and the router or device that provides Internet access, the following configurations must be made:

- Opening TCP ports: On the router (or Internet access device), a specific TCP port must be opened for each Agrónic you want to manage remotely. By default, the Agrónic uses port 2530, which can only be used by the first Agrónic. For additional Agrónic units, consecutive ports must be assigned (2531, 2532, etc.).

To configure this port go to 'Function - 4. Parameters - Installer - 6. Communication - 4. PSEP protocol'



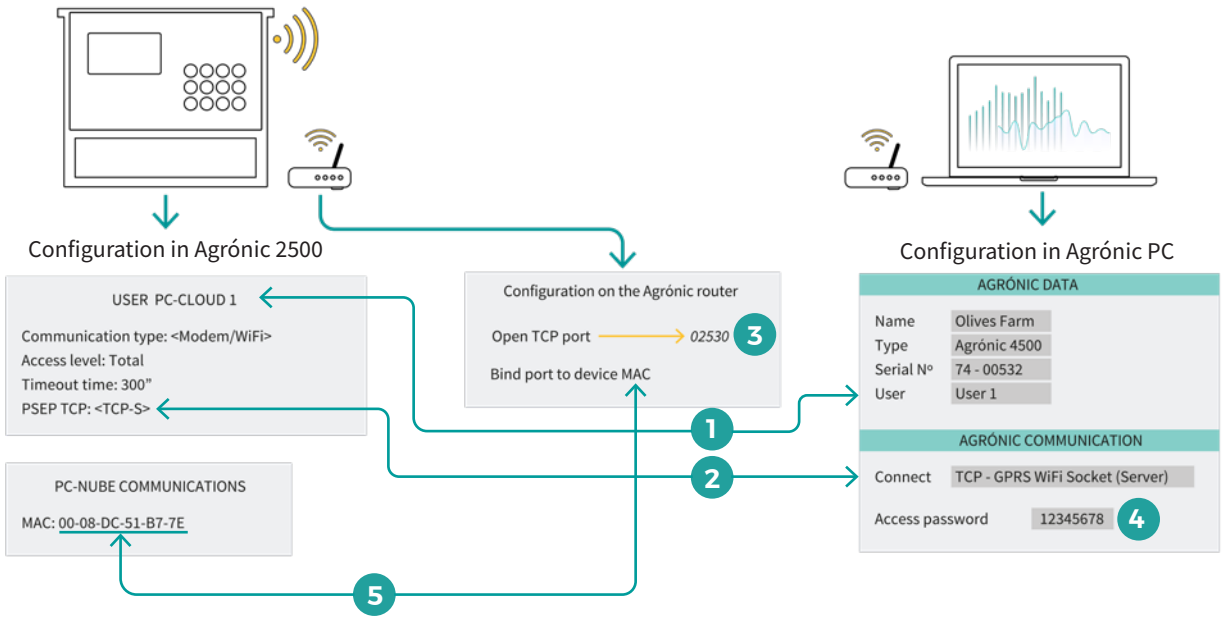
Important

If Internet access is made through a router with a SIM card, it is necessary to check with the operator whether this SIM allows TCP ports opening, since not all operators offer this functionality. Likewise, on connections through rural WiFi networks or satellite links, it is recommended to check with the provider to find out whether it is possible to open ports.

- Fixed private IP assignment: It is recommended to assign a fixed private IP address to the Agrónic to facilitate communication management. To do so, check the MAC address of the unit's WiFi modem and configure the router so that it always assigns the same private IP to that address (generally within the 192.168.1.X range). This ensures that the TCP port opening is always made to the same IP address, avoiding errors due to automatic changes. To view the MAC address from the Agrónic, go to 'Consultation - Communication - 1. Modem / PC', press the '4 key and, using the down arrow, go to the next screen.

WIFI NETWORK CONNECTION

IP: 192.168.1.52
Gateway: 192.168.1.1
Mask: 255.255.255.0
MAC: 00-08-DC-51-B7-7E



1. Same configured user number (1, 2, 3) in Agrónic 2500 and Agrónic PC
2. Same connection type (TCP-S) configured in Agrónic 2500 and Agrónic PC
3. TCP port (2530, 2531, 2532...) opened correctly on the router
4. Correct code (same used to activate the Connectivity option (Cloud + PC) in Agrónic 2500)
5. Agrónic 2500 MAC address linked correctly on the router

Agrónic PC communication in TCP-S (Server) type

4.2. COMMUNICATION PARAMETERS

To access, press 'Function - 4. Parameters - 6. Communications'.

COMMUNICATION PARAMETERS

1 PC
2 SMS
3 Agrónic APP / Cloud

Depending on the type of link to be used, the corresponding section must be configured:

- 1. PC
- 3. Agrónic APP / Cloud

4.2.1 PC communication

In this section, the link between the Agrónic 2500 and the Agrónic PC software is configured, as well as the parameters required to establish the connection. Up to 3 users can be configured, with access from different computers.

To access, press 'Function - 4. Parameters - 6. Communications - 1. PC'.

PARÁMETROS COMUNICACIONES PC

1 User 1
2 User 2
3 User 3

For each user, the following is configured:

USER 1

Communication type: <GPRS socket/WiFi socket>
Access level: Total
Timeout time: 300"
PSEP TCP: <TCP-C>
IP address: 000.000.000.000
TCP port: 00000
IP name:

Communication type *(No connection | Cable | GPRS socket/WiFi socket):* Defines the connection medium with Agrónic PC.

- No connection: Communication is not established.
- Cable: Communication via the Agrónic serial port.
- GPRS socket/WiFi socket: Communication via the Internet. Requires the Agrónic to have an internal modem or internal WiFi module installed.

Access level *(Total | programs | consultation)*:): Determines the actions the user will be able to perform from the Agrónic PC software.

- Total: Allows querying and modifying both programs and parameters.
- Programs: Allows querying and modifying programs. It is not possible to modify parameters.
- Consultation: Only allows viewing information, with no possibility of making changes.

Timeout time *(300 ... 999"):* TMaximum time without receiving data from the computer. When exceeded, the Agrónic goes to the "Not communicating" state and the "no communication" event with Agrónic PC is recorded.

If the communication type is GPRS socket/WiFi socket:

PSEP TCP *(TCP-C | TCP-S)*

Indicates how the connection is established between the Agrónic 2500 and Agrónic PC.

- TCP-S: The user's computer initiates the connection with the Agrónic. It is the default and recommended option. To use this option, a real public IP provided by the operator is required (not all offer it). When configuring the Agrónic 2500 in Agrónic PC, select the option 'Socket TCP - GPRS, WiFi (Server)', and then enter the unit's unique password (delivered along with the software). Each unit has a different password. The unit must not be communicated with different computers with the same user, as each computer must have

a different user (up to a maximum of 3).

- TCP-C: The Agrónic initiates the connection with the user's computer.

IP address (*000.000.000.000)*: Fixed public IP of the PC with the Agrónic PC software installed.

TCP port (*00000)*: Connection port on the computer with the Agrónic PC software installed. By default, it is 02332.

IP name: : If you do not have a fixed IP, you can convert a domain name to IP. Enter the IP name and leave the IP address at 0.0.0.0.

Important considerations:

- Modem (SMS) and WiFi communications are not compatible in the same controller.
- Cable connections only allow one user.
- The connection with the mobile phone application, Agrónic APP, must be made via modem or WiFi. It allows receiving event notifications from any record.

5 SMS MESSAGES

The Agrónic 2500 SMS messaging system allows three main functions, improving interaction and remote control of the unit. First, it is possible to send commands from a mobile phone directly to the unit. Likewise, the unit can send notifications to the user's mobile phone when an event occurs, keeping them informed in real time. Finally, the Agrónic can send messages or commands to other Agrónic units, allowing greater system coordination.

Event reception

Any of the events saved in the Agrónic action log can be configured to be sent by SMS to the user's mobile phone. Recorded events include program start and end, as well as possible anomalies detected by the system. The complete list of events is found in the Agrónic User Manual.

Sending messages to another Agrónic

It is possible to configure events in the log so that they send a custom text message to up to two different phone numbers, thus allowing commands to be sent to other Agrónic units. For example, when a low water level is detected in a reservoir, the Agrónic sends the command via SMS to activate a program to another Agrónic in charge of pumping.

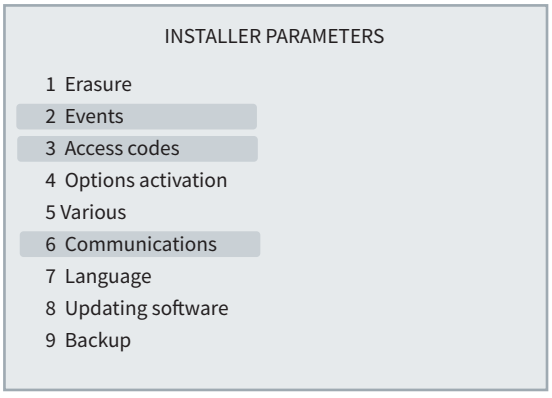
To manage the Agrónic via SMS, the unit must have the Modem link + Connectivity option.

Sending commands

Using SMS commands, the user can interact with the Agrónic to perform various actions: modify programs and settings, execute manual actions (stop programs, put the unit in STOP, deactivate alarms) and request queries of any type. The section Sending SMS commands to Agrónic in this manual contains the complete list of available commands.

5.1. INSTALLER PARAMETERS

To configure the parameters related to SMS messages, go to 'Function - 4. Parameters - Installer', and then enter the installer code.

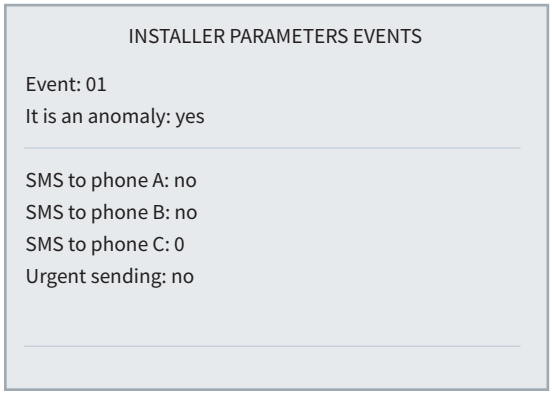


The menu options related to SMS messages are:

- 2. Events
- 3. Access codes
- 6. Communications

5.1.1 Event reception

Each event recorded by the Agrónic can be configured to send SMS messages to phone A and B (with the event description), and to phone C (a user-configurable text). Go to 'Function - 4. Parameters - Installer - 2. Events'.



Each event recorded by the Agrónic can be configured by indicating the type, subtype and the actions that will be executed when it occurs.

The actions of events generated by determining factors (from no. 33 to no. 44) are configured individually within 'Function - 4. Parameters - 7. Determining factors' (available with the Plus version).

The complete list of events can be viewed in 'Function - 3. Readings - 3. Record'.

Event *(01 ... 13)*: Type of event to configure.

It is an anomaly *(Yes| No)*

- Yes: The event is recorded as an anomaly. When it occurs, it appears in the general consultation, in the anomalies section and in the action log. Recommended for events that require immediate attention.
- No: The event is recorded only as an action. It appears in the action log section. For less relevant events.

SMS to phone A / B *(Si | No)*

- Yes: When the event occurs, an SMS is sent to phone A and/or B.

SMS to phone C *(0 ... 6):* When the event occurs, an SMS is sent to phone C with the previously defined text.

5.1.2 Sending messages to another Agrónic

To send messages to another Agrónic, go to 'Function - 4. Parameters - Installer - 6. Communication', and select the option '2. SMS messages'.

INSTALLER SMS MESSAGES

Activate: yes
SMS limit: 20
Title:
SMS-C text 1:
SMS-C text 2:
SMS-C text 3:
SMS-C text 4:
SMS-C text 5:
SMS-C text 6:

Activate *(Yes | No)*

- Yes: Enables sending and receiving SMS messages.
- No: SMS messages are disabled.

SMS limit *(00 ... 99):* Defines the maximum number of SMS messages the Agrónic can send per day. Once the limit is reached, the Agrónic records an event. Sending will resume automatically when the day changes or manually in 'Function - 2. Manual - 6. End stops'.

Title: Identifier text that will be included in each sent SMS. If no text is entered, the SMS title will be the Agrónic serial number. The text can be up to 19 characters.

SMS-C text*: :* Allows configuring up to 6 different texts (up to 19 characters each) for phone C. These texts will be sent when an event occurs that has sending to phone C configured. This function is useful for sending commands to other Agrónic units.

5.1.3 Security access codes

INSTALLER ACCESS CODE

PAR code: 0000
FUN code: 0000
SMS code: 0000
Accum. Erasure code: 0000

To send commands to the Agrónic via SMS messages from any mobile phone, it is necessary to have a four-digit access code. It can be configured in 'Function - 4. Parameters - Installer - 3. Access codes'.

Access codes increase security when sending commands. It is not necessary to include the code if the command is sent from phones A, B or C.

If the code is left at 0, the Agrónic accepts commands from any phone number.

5.2. COMMUNICATION PARAMETERS

In 'Function - 4. Parameters - Installer - 6. Communication - 2. SMS', sthe phone numbers A, B and C are configured.

SMS MESSAGES

Phone A: 34123456789
Phone B: 00000000000
Phone C: 00000000000

Phones A and B will be used to send SMS messages to users. Phone C is intended for sending messages to another Agrónic.

It is recommended to enter phone numbers starting with the *country code*. To delete a phone number, enter 0 in all digits. The number will be deleted automatically when leaving the screen.

5.3. SENDING SMS MESSAGES TO THE AGRÓNIC

To send commands to the Agrónic via SMS messages, a specific format must be followed in the message content. It must start with the Agrónic serial number, followed by a blank space, then the access code (only if the message is sent from a number not registered in the Agrónic), another blank space and finally the first operand (OP1), which sets the command to execute and determines the entry of more operands. If the message is sent from registered phones (A, B or C), it is not necessary to include the access code. Commands marked with "*" are only available if the Agrónic has the Plus version activated.

Format for registered phones:

Serial number / space / OP1 (operand 1) / space / OP2 (operand 2) / space / ... Example:(12345 IP 5)

Format for any phone:

Serial number / space / access code / space / OP1 (operand 1) / space / OP2 (operand 2) / space / ... Example: (1234 1111 IP 5)

The serial number is found on the unit identification label.

The message can be written in lowercase or uppercase. It is possible to send several commands in a single SMS, separating them by line breaks. Starting with the second command, it is not necessary to repeat either the serial number or the code. The complete message must not exceed 160 characters.

Manual commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5
"FS" Out of service							
	12345	0000	FS	YES or NO			
Example: Set out of service: 12345 FS YES							
"ST" Stop							
	12345	0000	ST	YES or NO			
Example: Exit Stop: 12345 ST NO							
"IP" Start program				Prog. Nº			
	12345	0000	IP	00			
Example: Start programs 5 and 12: 12345 IP 5 IP 12							

Manual commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5
"PP" Stop program				Prog. Nº			
	12345	0000	PP	00			
Example: Stop program 5: 12345 PP 5							
"FSP" Out of service from the program *				Prog. Nº			
	12345	0000	FSP	00	YES or NO		
Example: Take program 15 out of service: 12345 FSP 15 NO							
"SP" Suspend program *				Prog. Nº	Hours		
	12345	0000	SP	00	000		
Example: Postpone irrigation for program 3 for 5 hours: 12345 SP 3 5							
"HM" Add or subtract minutes from the clock				Minutes			
	12345	0000	HM	+-000			
Example: Add 3 minutes to the clock time: 12345 HM +3							
"FP" End stops				YES or NO to postponed irrigation			
	12345	0000	FP	YES or NO			
Example: End the stops and continue with postponed irrigation: 12345 FP NO							
"FSC" Out of service from the determining factor *				Det.fact. Nº			
	12345	0000	FSC	00	YES or NO		
Example: Set determining factor 8 out of service: 12345 FSC 8 YES							
"IL" Start filter cleaning							
	12345	0000	IL				
Example: Start filter cleaning: 12345 IL							
"SA" Sector in Automatic *				Sector Nº			
	12345	0000	SA	000			
Example: Set sector 4 to automatic: 12345 SA 4							
"SMM" Sector in manual start				Sector Nº			
	12345	0000	SMM	000			
Example: Set sector 4 to manual start: 12345 SMM 4							

Ordenes manuales

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5
"SMP" Sector in manual stop *				Sector Nº			
	12345	0000	SMP	00			
Example: Set sector 4 to manual stop: 12345 SMP 4							
"SV" Virtual sensor *				Nº sen.	Value		
	12345	0000	SV	000	000.00		
Example: Set the ETo value on analog sensor 3: 12345 SV 3 4.8							
"IPVT" Start pivot				Pivot Nº			
	12345	0000	IPVT	00			
Example: : Activate pivot 1: 12345 IPVT 1							
"PPVT" Stop pivot				Pivot Nº			
	12345	0000	PPVT	00			
Example: Stop pivot 1: 12345 PPVT 1							
"FSPVT" Out of service from the pivot				Pivot Nº			
	12345	0000	FSPVT	00	YES or NO		
Example: Take pivot 1 out of service: 12345 FSPVT 1 NO							
"PVTA" Pivot in automatic				Pivot Nº			
	12345	0000	PVTA	00			
Example: Set pivot 4 to automatic: 12345 PVTA 4							
"PVTMM" Pivot in manual start				Pivot Nº	Time	Direction	Speed
	12345	0000	PVTMM	00	00:00	0: forward | 1: reverse	0 al 100 %
Example: Set pivot 4 to manual start for 2 hours forward at 100%: 12345 PVTMM 4 02:00 0 100							
"PVTMP" Pivot in manual stop				Pivot Nº	Time		
	12345	0000	PVTMP	00	00:00		
Example: Set pivot 4 to manual stop for 1 hour: 12345 PVTMP 4 01:00							

Consultation commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5
"CR" Clock consultation							
	12345	0000	CR				
Example: Clock consultation: 12345 CR >> Monday 12:23 12/06/23							
"CG" General consultation							
	12345	0000	CG				
Example: General consultation: 12345 CG >> 10:30 A0 S03 5 F1 10:30 Stop							
"CP" Programs consultation							
	12345	0000	CP				
Example: Programs consultation: 12345 CP >> 0 (there are no active programs) >> 2 01:34 9 010.00m3 (programs 2 and 9 are irrigating)							
"CSD" Digital sensors consultation *				Sen. Nº	Sen. Nº		
	12345	0000	CSD	00	00		
Example: Consultation digital sensors from 1 to 3: 12345 CSD 1 3 >> Digital sensors: D1=0 | D2=0 | D3=1							
"CSA" Analog sensors consultation *				Sen. Nº	Sen. Nº		
	12345	0000	CSA	000	000		
Example: Consultation analog sensors from 1 to 3: 12345 CSA 3 5 >> Analog sensors: A3= 420Wm2 | A4=60% | A5:20.3ºC							
"CSC" Meter sensors consultation *				Sen. Nº	Sen. Nº		
	12345	0000	CSC	00	00		
Example: Consultation meter sensor from 1 to 3: 12345 CSC 1 3 >> Meter sensors: C1=80.3 m^3/h | C2=0 | C3=0							
"CCOM" PC configuration consultation							
	12345	0000	CCOM				
Example: PC configuration consultation: 12345 CCOM >> US:1 | TC:3 | NA:0 | TCP:02332 | IP:225.252.124.100							
"CAPN" APN configuration consultation							
	12345	0000	CAPN				
Example: APN configuration consultation: 12345 CAPN >> Automatic APN= YES | APN:movistar.es | User:movistar | Pass:movistar							
"CPVT" Pivot consultation				Pivot Nº			
	12345	0000	CPVT	00			
Example: Pivot consultation: 12345 CPVT 1 >> Moving (forward)							
"CSIM" Integrated SIM (eSIM) or external SIM card consultation							
	12345	0000	CSIM				
Example: SIM card consultation: 12345 CSIM >> SIM card: integrated							

Reading commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5
"LS" Sector history reading *				Sect. Nº	Day		
	12345	0000	LS	00	0		
Example: Sector 5 history reading from one day ago: 12345 LS 5 1 >> 12345 LS5 09/06/23 03:25 68.4m3							
"LA" Analog sensor history reading *				Sen. Nº	Day		
	12345	0000	LA	00	0		
Example: Analog sensor 2 history reading every 3 days: 12345 LA 2 3 >> 12345 H. 07/06/23 A2 Average:412 W/m2 | Maximum:520 W/m2 | Minimum:0 W/m2							
"LC" Meter sensor history reading *				Sen. Nº	Day		
	12345	0000	LC	00	0		
Example: Meter sensor 1 history reading from 4 days ago: 12345 LC 1 4 >> 12345 H. 03/06/23 C1 Total: 350.00m3 | Leak: 10.00 m3							
"AC" Sector accumulated consultation				Sect. Nº			
	12345	0000	AC	00			
Example: Consultation sector 5 accumulated: 12345 AC5 >> 12345 AC5 R48:34 1044m3 F1=8:18 F2=6:05							

Programs commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6...
"PR" Programa			Prog. Nº	Sectors	Weekdays	Freq.	Seq.	Start Irrigation F1 F2 F3 F4
	12345	0000	PR 00	00 00				
Example: Program 10, sectors 2 and 5, Monday and Friday, start at 8 with 3 hours of irrigation and 45 minutes of fertilizer 1: 12345 PR 10 2 5 LV 8:00 3:00 0:45								
"PRS" Program sector				Nº prog.	Sectors			
	12345	0000	PRS	00	00 00			
Returns: 12345 PRS OK or error								
"PRD" Program days				Nº prog.	Weekdays			
	12345	0000	PRD	00	SMTWTFS			
Example: Program 3, irrigate on Monday and Thursday: 12345 PRD 3 MT								

Programs commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6...
"PRQ" Program frequency *				Prog. Nº	Frequenc.			
	12345	0000	PRQ	00	00			
Returns: 12345 PRQ OK or error								
"PRC" Program sequential				Prog. Nº	Sequen.			
	12345	0000	PRC	00	00			
Returns: 12345 PRC OK or error								
"PRR" Program irrigation				Prog. Nº	Units			
	12345	0000	PRR	00	00:00 000.00			
Example: 34.5 m3 for program 12: 12345 PRR 12 34.5								
"PRF" Program fertilizer				Prog. Nº	Nº fert.	Units		
	12345	0000	PRF	00	00	00:00		
Returns: 12345 PRF OK or error								
"PRA" Program activations *				Prog. Nº	Activ.	Freq.		
	12345	0000	PRA	00	00	00:00		
Example: 34.5 m3 for program 12: 12345 PRA OK or error								
"PRH" Program schedule *				Prog. Nº	Time	Time		
	12345	0000	PRH	00	00:00	00:00		
Example: Modify the active schedule of program 3, from 6:00 to 21:30: 12345 PRH 3 6:00 21:30								
"PRP" Program period *				Prog. Nº	day	month	day	month
	12345	0000	PRP	00	00	00	00	00
Example: 34.5 m3 for program 12: 12345 PRP OK or error								

Various commands

	Serial Nº	Code	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6
"SMS" Activate or cancel SMS sending				SMS	YES/ NO			
	12345	0000	SMS	00 00				
Example: Cancel SMS sending: 12345 SMS NO								
"EV" Configure SMS for events				Event Nº	SMS A	SMS B	SMS C	
	12345	0000	EV	00	YES / NO	YES / NO	0-5	
Example: When irrigations end, notify phone B: 12345 EV 27 NO YES 0								
"CON" Configure SMS for determining factors				Det. fact. Nº	SMS to A	SMS to B	SMS to C	
	12345	0000	CON	000	YES / NO	YES / NO	0-5	
Example: When determining factor 1 comes in, send an SMS to phone B: 12345 CON 1 NO YES 0								
"COM" PC communication				User Nº	Comm. type	Access level	TCP port	IP address
	12345	0000	COM	1 a 3	0 to 4, or 200 0. No conn. 1. Cable 4. GPRS soc. 200=TCP-S	0 to 2	00000	
Example TCP-S: If the communication type is configured as TCP-S (200) no other parameter is required: 12345 COM 1 200 Example TCP-C: User 1, leave with no communication: 12345 COM 1 0 Example TCP-C: User 3, activate GPRS socket communication: 12345 COM 3 4 0 2332 nombre.dyndns.com								
"WEB" WEB communication					Comm. type		TCP port	IP address
	12345	0000	WEB		4	YES / NO	0-5	
Example: Communication with GPRS modem, TCP port 4332 and IP address agronicapp.com: 12345 WEB 4 2332 agronicapp.com								
"APN" GPRS connection. APN				Automatic APN	APN	User	Password	
	12345	0000	APN	YES / NO	Text	Text	Text	
Example: El APN no es automático: 12345 APN NO internet.com internet internet Example: The APN is automatic: 12345 APN YES								
"SIM" Modify integrated SIM card (eSIM) or external SIM card				Integrated SIM (eSIM) * *only for certain modem types*				
	12345	0000	SIM	YES / NO				
Example: The SIM card is integrated (eSIM): 12345 SIM YES Example: The SIM card is external: 12345 SIM NO								

6 CONSULTATION COMMUNICATION

The Agrónic 2500 communications consultation shows the communication status of the connected devices: Modem, Radio link or WiFi, along with the communication status of the three configurable users for PC connection.

6.1. MODEM / PC COMMUNICATION

This screen allows you to consult the status of the installed modem (both for GPRS communication and for sending and receiving SMS messages), the signal level received by the modem, and the communication status of the three available users to connect.

To access it, press 'Consultation - Communication - 1. Modem / PC'.

CONSULTATION COMMUNICATIONS MODEM / PC

Modem: (57%) Correct
SMS: (07) Correct
PC 1: Correct
PC 2: Not communicating
PC 3: Not configured

Modem: Shows the status of the GPRS modem:

- Stopped: It is out of the active schedule. No power supply.
- Not communicating: There is no communication with the modem.
- Correct: The modem is working correctly.
- Searching: The modem is searching for coverage.
- No SIM: There is no SIM card in the Agrónic.
- Activated PIN: It cannot connect because the card lock is enabled. The PIN code must be entered in 'Function - 4. Parameters - Installer - 6. Communication - 1. Modem connection'. If the PIN is already configured, it may be incorrect.

In addition, in parentheses, the signal level received by the modem is shown. The correct reading level is above 35%.

SMS: In parentheses, the number of messages sent on the current day is indicated. This counter resets automatically when the day changes. Next, it shows its status.

- Not configured: SMS sending is deactivated. It can be enabled from 'Function - 4. Parameters - Installer - 6. Communication - 2. SMS messages'.
- Error: Failure sending or receiving SMS, or the SIM card does not have SMS enabled.
- Correct: SMS sending and receiving is being performed correctly.

By pressing the 'key 5'+ down arrow, you access an internal menu where you can view internal modem parameters.

User status:

- Not configured: Communication is not configured.
- Not communicating: Communication is configured, but there is no connection with Agrónic PC and the cloud.
- Communicating: It is communicating correctly with Agrónic PC and the cloud.

6.2. RADIO LINK COMMUNICATION

This screen allows you to view the status of the radio link and the communication status of the three available users to connect.

To access it, press 'Consultation - Communication - 3. Radio link'.

CONSULTATION COMMUNICATIONS RADIO LINK

Radio link: correct
PC 1: Not configured
PC 2: Not communicating
PC 3: Communicating

Radio link: Shows the status of the radio link:

- Stopped: It is out of the active schedule. No power supply.
- Not communicating: There is no communication with the radio link.
- Correct: The radio link connection is working correctly.

User status:

- Not configured: Communication is not configured.
- Not communicating: Communication is configured, but there is no connection with Agrónic PC and the cloud.
- Communicating: It is communicating correctly with Agrónic PC and the cloud.

6.3. WIFI COMMUNICATION

This screen allows you to consult the status of the WiFi modem, the WiFi signal level, and the communication status of the three available users to connect.

To access it, press 'Consultation - Communication - 3. WiFi connection'.

CONSULTATION COMMUNICATIONS WIFI

WiFi: (68%) Correct
PC 1: Correct
PC 2: Not communicating
PC 3: Not configured

WiFi modem status:

- Stopped: Communication with the WiFi module has not been started.
- Correct: The WiFi module is working correctly.
- No WiFi: It has not found the WiFi network. It keeps trying to connect.

In parentheses, the signal level received by the WiFi modem is shown. The correct reading level is above 35%.

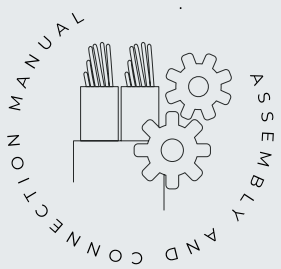
By pressing the ' key 4 ' + down arrow, you access an internal menu where you can view internal parameters of the WiFi module.

User status:

- Not configured: Communication is not configured.
- Not communicating: Communication is configured, but there is no connection with Agrónic PC and the cloud.
- Communicating: It is communicating correctly with Agrónic PC and the cloud.

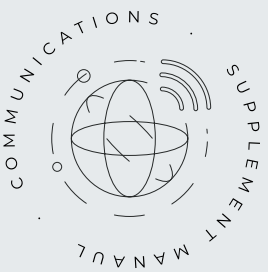
7 TECHNICAL SUPPORT

In addition to this manual, the Agrónic 2500 has other manuals, tutorial videos, tips and frequently asked questions that can be consulted on the Progrés website, in the Technical support section.



Assembly and connection Manual *r2465*

Intended for the person who physically installs the Agrónic on the farm or in the electrical panel. It indicates the dimensions and how the wiring of the different connection options must be done.



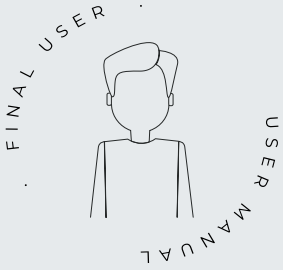
Communications Manual *r1850*

Intended for the installer who configures communications with the cloud for VEGGA and Agrónic APP or with the Windows Agrónic PC program. It explains the different communication systems.

Installer Manual *r2466 r2468*

Intended for the installer who configures the Agrónic irrigation system. It details all parameters related to irrigation: general, sectors, programs, fertilization, etc.

There is one manual for the BASIC version and another for the Plus version.



End user Manual *r2467 r2469*

Intended for the Agrónic end user. It details the most common use of programming, manual actions and consultations. Parameters are not explained in this manual.

There is one manual for the BASIC version and another for the Plus version.

Pivot Manual

Intended for the installer and end user who uses the controller for pivot control.

Solar irrigation Manual *r2006*

Intended for the installer and user who uses hybrid solar irrigation systems (panels + generator set).

Options installation

GPRS Option Installation

USB Option Installation (r1933)

Wifi Option Installation

AgroBee Option Installation

AgroBee-L Option Installation (r-2367)

2 analog inputs Option Installation (r-2366)

SDI-12 and 4 analog inputs Option Installation (r-2369)

5 digital inputs Option Installation (r-2370)

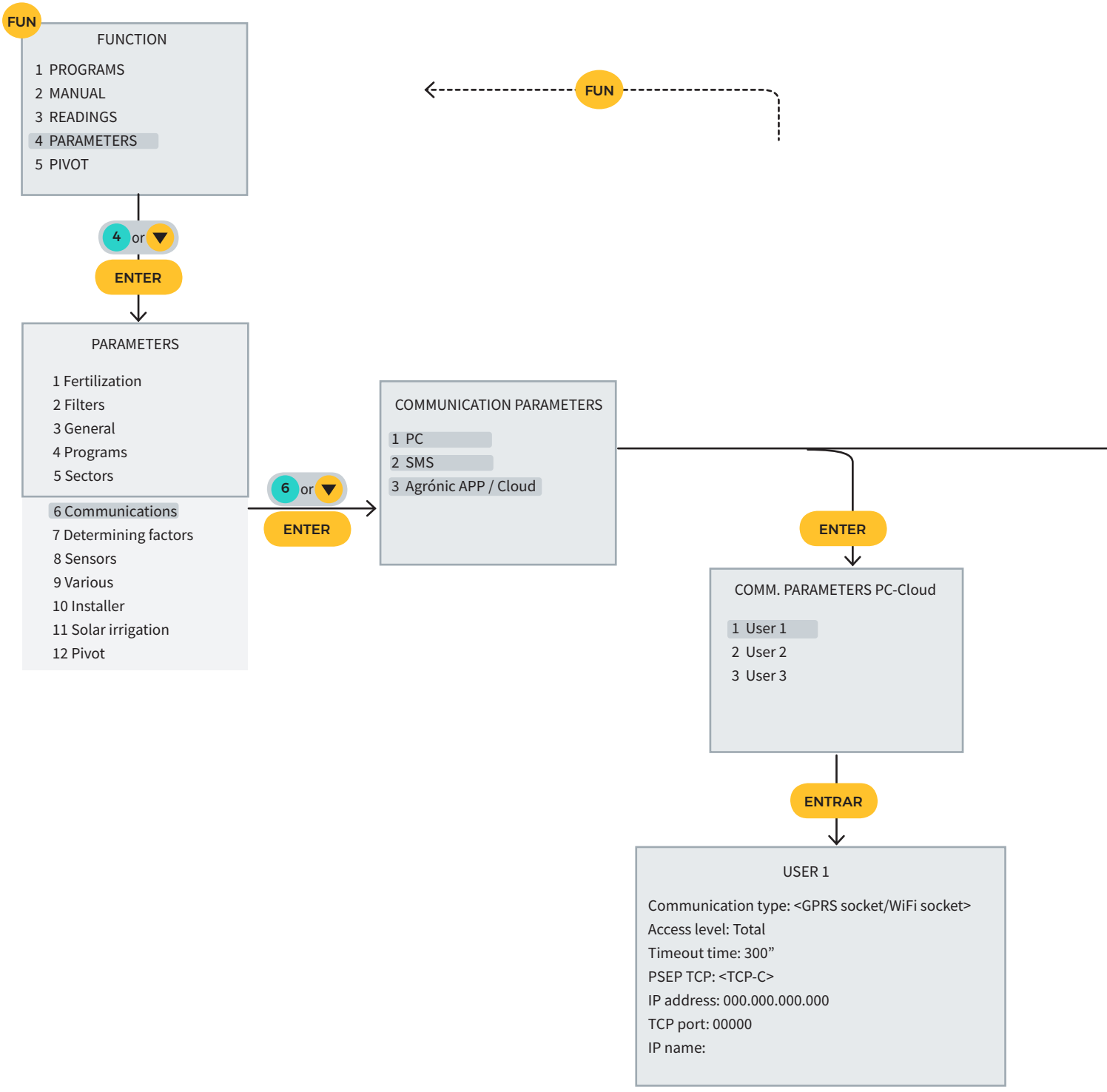
Supply limiting resistor Installation

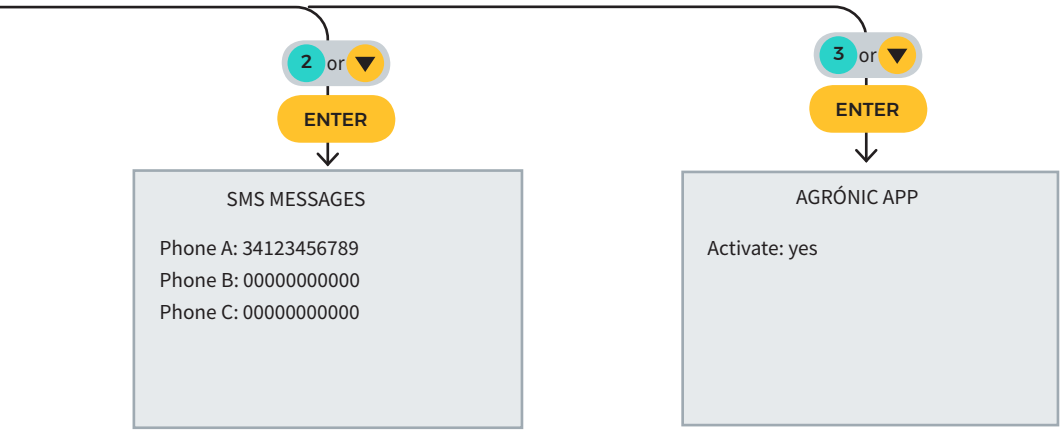
Video tutorials

On the Progrés website you can find video tutorials where the most frequent consultations we receive are explained step by step. We recommend viewing them whenever you have a question or problem; you may find the solution there.

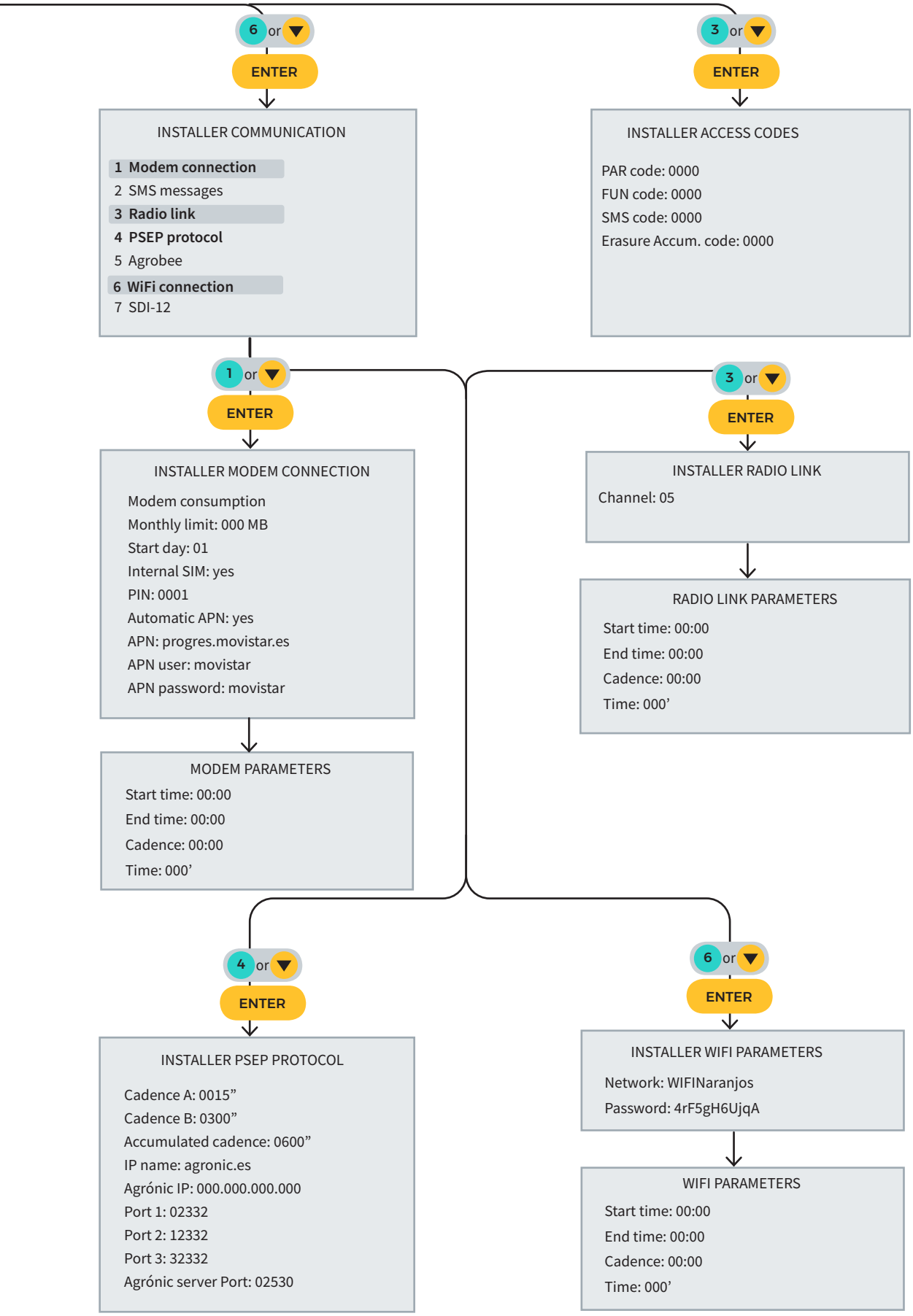
8 FUNCTION SCREENS

8.1. PARAMETERS - COMMUNICATIONS

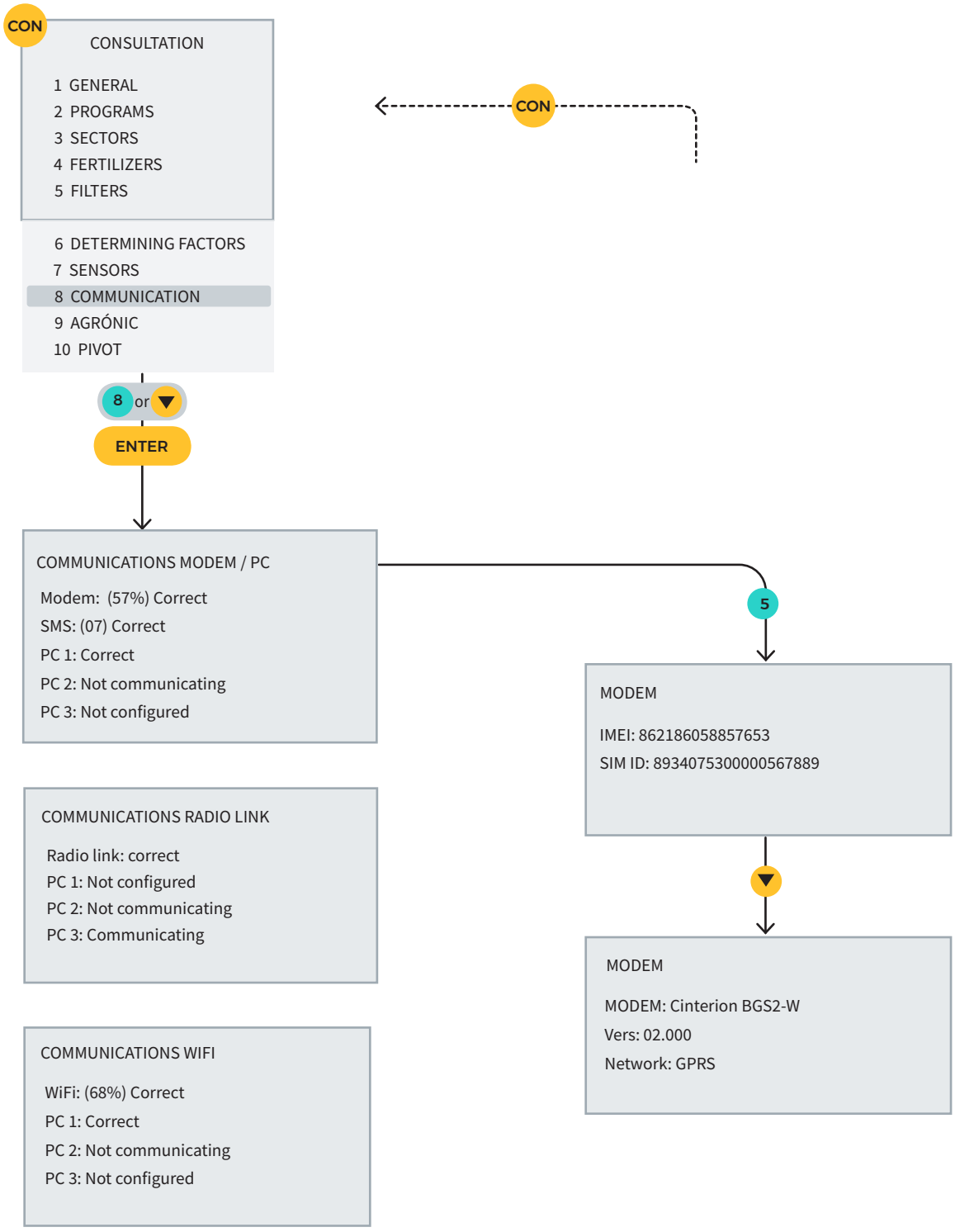



2 or
ENTER
SMS MESSAGES
Phone A: 34123456789
Phone B: 00000000000
Phone C: 00000000000
3 or
ENTER
AGRÓNIC APP
Activate: yes

8.2. PARAMETERS - INSTALLER


6 or
ENTER
INSTALLER COMMUNICATION
1 Modem connection
2 SMS messages
3 Radio link
4 PSEP protocol
5 Agrobee
6 WiFi connection
7 SDI-12
3 or
ENTER
INSTALLER ACCESS CODES
PAR code: 0000
FUN code: 0000
SMS code: 0000
Erasure Accum. code: 0000
1 or
ENTER
INSTALLER MODEM CONNECTION
Modem consumption
Monthly limit: 000 MB
Start day: 01
Internal SIM: yes
PIN: 0001
Automatic APN: yes
APN: progres.movistar.es
APN user: movistar
APN password: movistar
MODEM PARAMETERS
Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'
3 or
ENTER
INSTALLER RADIO LINK
Channel: 05
RADIO LINK PARAMETERS
Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'
4 or
ENTER
INSTALLER PSEP PROTOCOL
Cadence A: 0015"
Cadence B: 0300"
Accumulated cadence: 0600"
IP name: agronic.es
Agrónic IP: 000.000.000.000
Port 1: 02332
Port 2: 12332
Port 3: 32332
Agrónic server Port: 02530
6 or
ENTER
INSTALLER WIFI PARAMETERS
Network: WIFINaranjos
Password: 4rF5gH6UjqA
WIFI PARAMETERS
Start time: 00:00
End time: 00:00
Cadence: 00:00
Time: 000'

9 CONSULTATION SCREENS



SPACE RESERVED FOR THE USER

You can use this space to write down information such as the parameters entered in the controller, drawings, program information, determining factors, alarms, etc.

Warranty

The Agrónic 2500 complies with CE marking directives.
Products manufactured by Progrés are covered by a two-year warranty against any manufacturing defect.
Compensation for direct and indirect damage caused by the use of the equipment is excluded from the warranty.

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