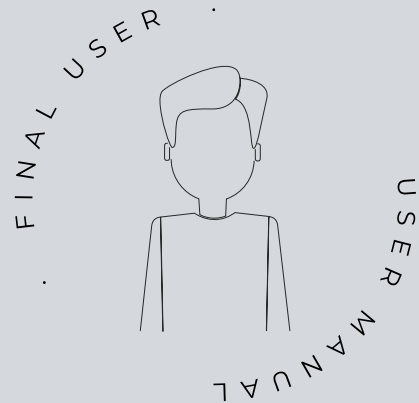USER MANUAL

AGRÓNIC 2500

Basic version | V3

Sections in the manual:

- – Use guide
- – Technical specifications
- – Programs
- – Manual
- – Readings
- – Consultation
- – Diesel option
- – Troubleshooting
- – Technical support

The Communications Consultation section is detailed in the Communications Manual.

The parameters and input and output coding sections are detailed in the Installer's Manual.

SISTEMES ELECTRÒNICS
PROGRÉS

Welcome to the world of Agrónic 2500.

This document will be your guide as you become familiar with complete mastery of this powerful controller.
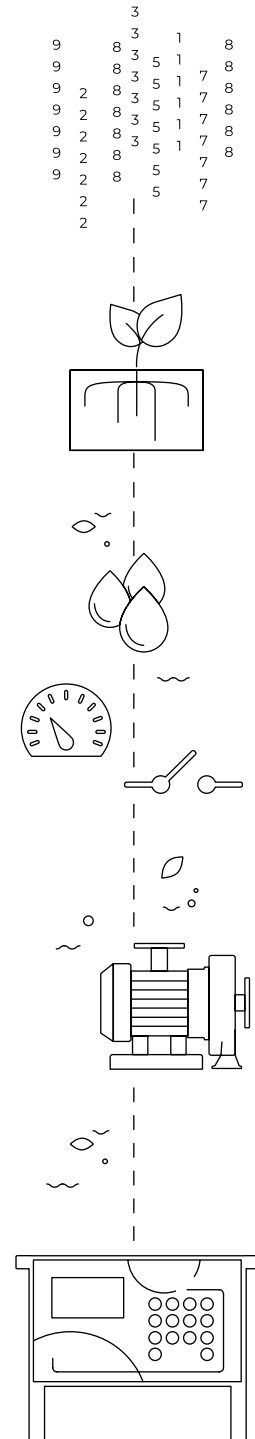
The manual is aimed at end users like you.

There is an extensive guide that details all the features and functionalities.

Even if you're a beginner in this field, the essential information is provided so that you can use the controller effectively. Our goal is to ensure that you feel safe and prepared.

It is important to note that there are two versions available: the Basic edition and the Plus edition, each of which is adapted to its specific specifications and options.

Let's start this journey!

Index

1   USE GUIDE

This section details basic concepts about the controller, useful for new users who are not familiar with the Agrónic 2500.

1.1.   GENERAL CONCEPTS

Names such as Programs, Sectors, Records, etc. appear in Agrónic that may not be familiar to the user. Here is a short explanation of each of these concepts. The features in the explanations are not the only ones that the Agrónic offers, see the installer's manual for the complete features.

Pump: it can be a water delivery pump or a general valve for the farm. This Agrónic can control up to 2 pumps.

Sector: corresponds to an irrigation valve that opens water to a part of the farm, for example, a branch of drip emitters. Each sector can be assigned a pump so that when the sector is activated the pump is also activated. This Agrónic can control up to 30 sectors.

Fertilizer: any liquid supplied to the plant along with the irrigation water. Fertilizer can be supplied during the entire irrigation time or only during part of it. The Agrónic can control up to 4 fertilizers.

Program: these are automatic irrigation commands in which sectors and fertilizers are combined with a start day and time and an irrigation and fertilizer time. The Agrónic can control up to 50 programs.

Manual: any action that is required immediately. For example, activate or stop a program, deactivate an alarm, make an emergency stop, etc.

Record: agrónic makes a record, with date and time, of everything it does. For example, activate and stop programs, alarms and malfunctions, communication failures, etc.

Anomaly: from the record made by Agrónic, there are some things that are considered possible problems for irrigation. These are recorded as anomalies and the number is shown in the general consultation.

Stops and malfunctions: irrigation can stop automatically before the programmed time ends, which is called 'stops and malfunctions'. Stops and malfunctions are generated by a sensor. For example, when a sensor detects that there is no pressure in the pipe or that it is raining. There is one type of stop: conditional, and two types of malfunctions: temporary and permanent.

1.2. FIRST STEPS WITH AGRÓNIC

The first screen that appears in Agrónic when it starts up is General Consultation. The following menus are available from this screen:
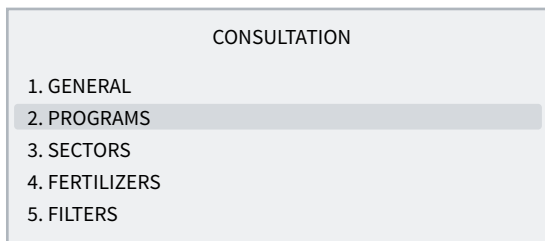
menu Function

Use the 'Function' key to access the menu where the irrigation programs can be modified, perform manual actions, read history and anomalies or change the operating parameters.

FUNCTION
1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
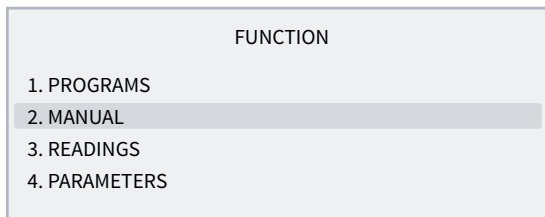
Consultation menu

Use the 'Consultation' key to access the menu, which shows what the controller is doing (program, communication, etc. status) and the unit's specifications (serial number, version, etc.). Values cannot be modified on these screens.

CONSULTATION
1. GENERAL
2. PROGRAMS
3. SECTORS
4. FERTILIZERS
5. FILTERS

Press the 'Function' or 'Consultation' key to return to the main menu.

The up and down arrows move the menu selection. It can also be done by pressing the selection number. When the desired option lights up, press the 'Enter' key. An arrow on the side of the screen indicates that there are more options.

Modifying values: when a value is modified, it appears highlighted on the screen (black background and white text). If it is a numerical value, enter it using the number keys. If it is text, see the following section. To validate and jump to the next value, press the 'Enter' key. You can also validate using the up or down arrow keys, but instead of jumping to the next value, it jumps to the next screen.

An example of how to interpret the questions and how to modify the possible values to configure is explained:

Example

Example of interpretation
N. of fertilizers: 0
Fertilizer general: no
Type of fert.: series

N. of fertilizers *(0 ... 4)*

- Underlined value or number: indicates the default value that is configured in the controller.

Fertilizer general *(yes | no)* 9+ 0

- Indicates the option to respond with 'yes' or 'no'.

Type of fert. *(series | parallel)* 9+ 6-

- Indicates that there are several options to modify.

Screen off: the screen turns off automatically if no key is pressed for five minutes. To turn it back on, just press a key and return to the General Consultation. If any value is being modified, it is saved and the screen turns off.

1.3. USING THE KEYBOARD

NO **0**	Number 0 + "NO" for yes/no confirmation questions
DOM **1**	Number 1 + Sunday, for questions related to the days of the week.
LUN **2**	Number 2 + Monday, for weekday questions
MAR **3**	Number 3 + Tuesday, for weekday questions
MIE **4**	Number 4 + Wednesday, for weekday questions
JUE **5**	Number 5 + Thursday, for weekday questions
VIE **6** ⊖	Number 6 + Friday, for weekday questions + ⊖, for sign and choice questions
SAB **7**	Number 7 + Saturday, for weekday questions

Diario **8**	Number 8 + Daily log, for weekday questions.
SI **9** ⊕	Number 9 + "YES", for yes/no confirmation questions + ⊕, for sign and choice questions
ENTER	Enter key, to accept a menu selection, the last value entered or confirm the selection in a question.
FUN	Function key, to access the functions menu and also to go backward when inside the menus.
CON	Consultation key, to access the consultation menu or also to go back in the menus.
▼	Down arrow key, to move the cursor in the menus, jump to the next screen or the next day in the records.
▲	Up arrow key, to move the cursor in the menus, jump to the previous screen or to the previous day in the records.

Entering text: situate the cursor in the space prior to the text; modify it by pressing the '+' key; in this section, the keys function in the following manner:

⊕	Moves the cursor one character to the right
⊖	Moves the cursor one character to the left
▲	New character, the previous one, letter B becomes A
▼	New character, the following one, letter B becomes C
ENTER	Accepts the text, skips to the next value

1	Capital letters
2	Lower-case letters
3	Numbers
4	Symbols
NO	Erases and moves to the left

1.4. MOST-USED SCREENS

Within the Consultation menu, the most-used screen is General Consultation, which shows the date and time of the Agrónic, whether there is any anomaly or stop and, if it is irrigating, the sectors that are open.

For further information, see the General consultation section.

```
             GENERAL CONSULTATION

  Mon   dd/mm/yy hh:mm:ss
  New anomalies: 05
  S: 02 03 05 08
  P1   F - 2 - -   M - 2 - -   C -
  IM1 FM2  TM  DM  CS  PS
```

Within the Function menu, the most-used screens are Programs to modify irrigation and Manual to activate or stop irrigation immediately, in addition to other options.

You can change the irrigation sectors, days of the week, start time, time or volume, etc. It is recommended not to change these values when the program is activated.

```
                  PROGRAM 01

  Sectors: 03  04
  SMTWTFS              Start: 10:30
  Irrigation: 02:40
  F1  01:05           F2  00:12
```

Manual Programs can be used to start or stop irrigation. See section 4 for further information.

```
               MANUAL PROGRAMS

  Program: 08
  Start: yes
```

1.5. PRACTICAL EXAMPLES

1.5.1   Irrigation programs

Change a program's irrigation time.

Press the 'Function' key and go to number '1 . Programs'.

```
                    FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

Select the program to modify and 'Enter'.

```
                    PROGRAMS

P01 - . S01  S02
P02 - . S03  S04
P03 - .
P04 - .
P05 - .
```

Press the 'Enter' key until the irrigation time is selected.

Modify and press the 'Enter' key.

```
                  PROGRAM 02

Sectors:  03  04
SMTWTFS     Start: 10:00
Irrigation: 02:00
```

Press or 'Function' or 'Consultation' to exit.

If the program is irrigating when it has been modified, the change will not take effect until the next irrigation.

One program activates when another finishes (sequential program)

Press the 'Function' key and go to number '1 . Programs'.

```
                    FUNCTION

1. PROGRAMS
2. MANUAL
3. REDMINGS
4. PARAMETERS
```

Select the program to modify and 'Enter' .

```
                    PROGRAMS

P01 - . S01  S02
P02 - . S03  S04
P03 - .
P04 - .
P05 - .
```

Press the 'Enter' key until the start time is selected.

```
                  PROGRAM 03

Sectors:  05  06
SMTWTFS     Start: 99:02
Irrigation: 02:00
```

Enter 99 in the two hour digits (indicates that it is sequential) and enter the previous program in the two minute digits. To use 99, it must have been previously configured in 'Function - 4. Parameters - 8. Installer - 5. Various'.

In the example above, program 3 would be activated when program 2 finishes.

Press or 'Function' or 'Consultation' to exit.

Stop a program immediately

Press the 'Function' key and go to number '2 '. Manual and 'Enter'.

```
                  FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

Go to number '3. Program' and 'Enter'.

```
                  MANUAL

1. Out of service
2. STOP
3. Program
4. Filters
9. Clock
```

Enter the program number to stop and then press 'Yes/9' in Stop. Press 'Enter' to stop the program.

```
              MANUAL PROGRAMS

Program: 03
Stop: yes
```

How to exit a definitive stop

When it shows that the Agrónic is in Final Stop in General Consultation, this indicates that an error occurred during irrigation that caused the irrigation to stop and not allow more to enter. In order to continue irrigation, the Agrónic must be reset by the user.

```
            GENERAL CONSULTATION

Mon 05/07/10 17:28
* DEFINITIVE STOP *
```

Press the 'Function' key and go to number '2. Manual' and 'Enter'.

```
                  FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

Go to number '6 . Terminate stops' and 'Enter'.

```
                  MANUAL

2. STOP
3. Program
4. Filters
5. Clock
6. Terminate stops
```

Within Manual stops there are two questions:

- Stops and malfunctions (*No* | *Yes*): enter this to reset the Agrónic, 'Yes/9'.

- Irrigation postponed (*No* | *Yes*): to continue with the irrigation that has been stopped, enter 'No/0'.

```
               STOP MANUAL

Finish:
stops and malfunctions: yes
Irrigation postponed: no
```

1.5.2 How can I see...

How can I see how long it takes to finish irrigation?

Press the 'Consultation' key and go to number '2 . Programs' and 'Enter'.

```
                CONSULTATION

1. GENERAL
2. PROGRAMS
3. SECTORS
4. FERTILIZERS
5. FILTERS
```

Enter the program number to consultation and 'Enter'.

```
            PROGRAM CONSULTATION

01.        02.        03.        04.        05.
06.R       07.        08.        09.        10.
11.        12.        13.        14.        15.
16.        17.        18.        19.        20.
Program No.: 06
```

The consultation shows the sectors that are activated and the time or volume left to finish the irrigation.

```
            PROGRAM CONSULTATION 06

Irrigating
Sectors: 03  04
Irrigation: 01:32
```

How can I see whether a program has irrigated correctly?

Press the 'Function' key and go to number '3. Readings' and 'Enter'.

```
                 FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

```
                 READINGS

1. Totals
2. Anomalies
3. Record
```

Change to the previous and next anomaly using the up and down arrows.

Record number 17 is the one at the beginning of the program. Indicates the start date and time and the reason.

```
                  RECORD

N17  05/07/10  15:30
Program 2.
Start by: schedule
```

Record number 27 is the one at the end of the program. Indicates the date and time of the termination, the reason why it stopped and whether it stopped before completing all irrigation. It indicates the amount (time or volume) remaining without irrigation.

```
                  RECORD

N27  05/07/10  16:30
Program 2.
End due to: irrigation end
Irrigation: 00:00
```

How can I see the anomalies in the general consultation?

```
          GENERAL CONSULTATION

Mon 05/07/10 17:28
New anomalies: 05
```

Press the 'Function' key and go to number '3. Readings' and 'Enter'.

```
               FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```
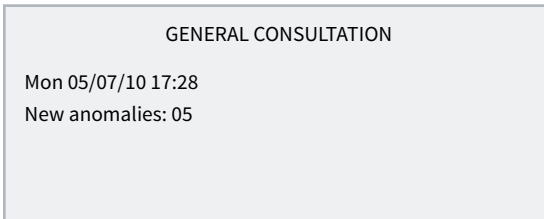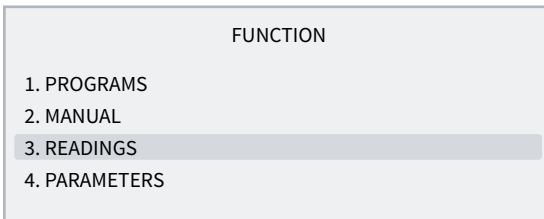
Go to number '2. Anomalies' and 'Enter'.
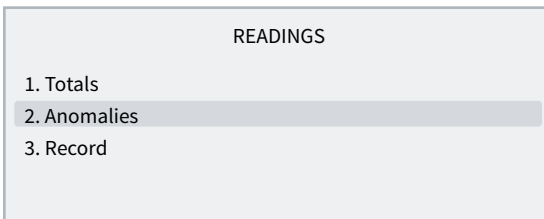
```
               READINGS

1. Totals
2. Anomalies
3. Record
```

Change to the previous and next anomaly using the up and down arrows.

```
                ANOMALY

N33   05/07/10 17:15


Definitive stop
DM input
```
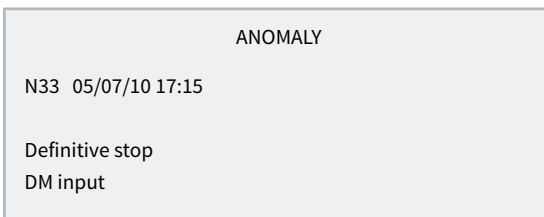
Press or 'Function' or 'Consultation' to exit. In the general consultation, new anomalies are set to 0 once read.

Go to section 5.2 Anomaly readings to see the anomalies.

1.6. WHEN IS THE PLUS VERSION NEEDED?

To monitor a sensor or activate, stop or modify irrigation based on the sensor readings, the Agrónic 2500 Plus version is needed.

Change from the Basic to the Plus version from the unit by activating an option.

The sensors can be digital (water meters, rain gage, flow detectors, etc.) or analog (pressure, temperature, soil humidity, etc.).

Examples where the Plus version is needed:

- to stop irrigation when it rains or is very windy.

- To do anti-frost irrigation with an analog sensor.

- To record the pressure during irrigation.

- To start programs with more than one sensor.

- To irrigate in m3 per hectare.
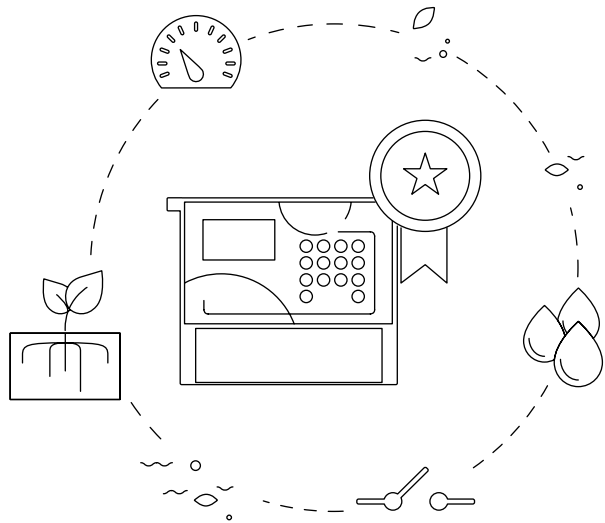
2   TECHNICAL SPECIFICATIONS

General power supply		
Voltage		12 Vdc +15% -10%
Frequency		--
Power consumption		Less than 12.5 W (0.3 W standby)
Fuse	Input	Thermal (PTC) 1.1 Amp. at 25°C, auto-resettable

Output power source		
Voltage		From 12 to 24 Vdc or Vac (maximum 30 V)
Fuse	Input "R+"	Thermal (PTC) 3.0 Amp. at 25°C, auto-resettable

Outputs		
Digital	Number	9, extendable to 18 and 27.
	Type	By relay contact, with 24 VAC potential (external transformer).
	Limits	30 Vac / 30 Vdc, 1 Ampere, 50-60 Hz, CTM ll (per output)
All outputs have double isolation in respect to the power output.		

Inputs		
Digital sensors	Number	6, expandable (option) to 11 on non-Latch models.
	Type	Coupling options, operate at 12 or 24 V
Analog (option)	Number	2
	Type	4-20 mA, 0-20 V. (on demand, with galvanized separation)
	Number	4
	Type	4-20 mA

Environment	
Temperature	-5°C to 45°C
Humidity	< 85%
Altitude	2000 m
Pollution	Grade 2

Weight	
Box model	From 1.0 kg to 1.6 kg
Built-in model	From 1.1 kg to 1.5 kg

Memory and clock safeguard	
Memory	No maintenance, 10 years for parameters and programs in FRAM memory and FLASH memory records
Clock	48 hours without power

Statement of compliance	
Complies with Directive 89/336/EEC for Electromagnetic Compatibility and Low Voltage Directive 73/23/EEC for Product Safety Compliance. Compliance with the following specifications was demonstrated as indicated in the European Community Official Gazette.	CE

Symbols that may appear on the product			
⏚ Protective ground terminal	((•)) Antenna	⏚ Ground terminal	▣ Double isolation

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 electric and electronic unit recycling and correctly processed pursuant to Spanish legislation.

3 PROGRAMS

A program is an automatic irrigation command that includes which sectors apply, during what time and for how many irrigation and fertilizer units. The Agrónic has 50 independent or sequential programs and each program can have up to 4 sectors.

To access the menu, press 'Function' on the keyboard, select '1.Programs', 'Enter'.

```
                    FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

```
                    PROGRAMS

P01        - Tomato. S03  S04
P02        – Pepper. S05
P03        - Pool. S06
P04        - . S02  S01
P05        - . S07  S08
```

```
              ❶ PROGRAM 01

❷ Sectors: 03  04
❸ SMTWTFS          ❹ Start: 10:30
❺ Irrigation: 02:40
❻ F1  01:05              F2  00:12
```
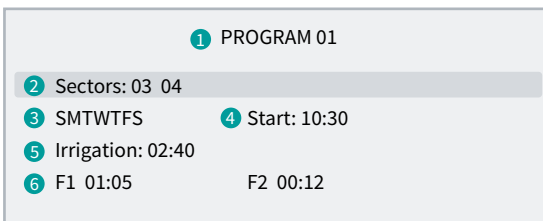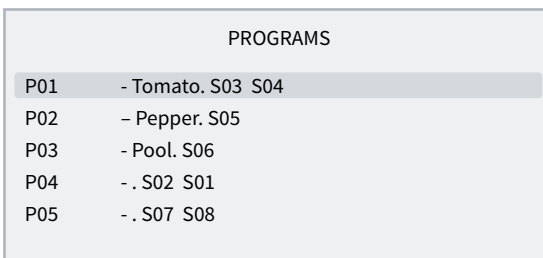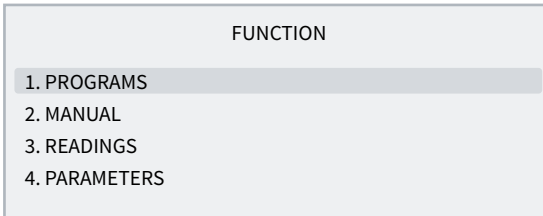
```
  1   Program number
  2   Number of irrigation sectors
  3   Days of the week / frequency of days
  4   Start time / sequential start or by determining
      factor
  5   Irrigation units in time or volume
  6   Fertilizing units in time or volume
```

The values entered into programs may vary depending on what is configured in 'Function - 4. Parameters - 5. Programs' and 'Function - 4. Parameters - 8. Installer - 5. Various'.

```
            PROGRAM 02 Pepper

S—W-F-    Start: 10:30
```

```
            PROGRAM 02 Pepper

Sequential prog.: 01
Start: 99:01
```

```
            PROGRAM 02 Pepper

SM—TF-    (Start Input)
               Start: 88:00
```
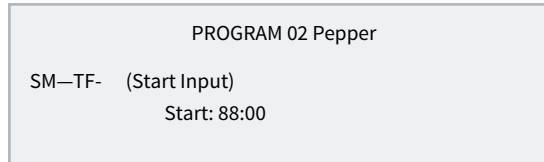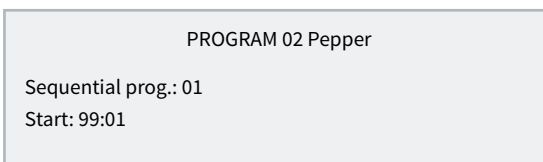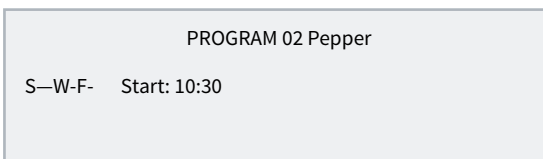
Sectors (00 … 30): sector that will activate the program (from 0 to 30). There can be up to 4 sectors as configured in 'Function - 4. Parameters - 8. Installer - 5. Various'. If they are all 0, the program is inactive.

Days of the week: (SMTWTFS) Days of the week to irrigate, start with Sunday. Press the 'Daily log/8' key to activate or deactivate all of them. The dash indicates that it is not activated. If the program has a sequential start type, it is not configured.

Schedule start

Start: the program starts when this time is reached. From 00:01 to 23:59, the time 00:00 is not valid.

Sequential start:

Program sequential: the program starts when the program that is configured here ends. From 0 to 50. At 0 it does not start. According to the configuration of 'Function - 4. Parameters - 8. Installer - 5. Various' the sequential program is after 99.

Start by input

There is no need to enter any value. It will start when the PS input is activated.

Irrigation: amount of irrigation in the program. In time, the maximum is 99:59 or 99'59"; in volume, it is 99999 or 9999.9 or 999.99 m3. It depends on the configuration of 'Function - 4. Parameters - 8. Installer - 5. Various'. The units are configured in 'Function - 4. Parameters – 5. Programs' and are independent for each program. If irrigation is by volume, you can also ask for a time and the program ends when the volume or time ends (from 0 to 99:59). This is configured in 'Function - 4. Parameters - 8. Installer - 5. Various'.

```
                PROGRAM 02 Pepper

Sectors: 03  00

SMTWTFS                    Start: 10:30
Irrigation: 02:40
F1 00:55                   F2 00:00
F3 00:00
......................................................

Activations: 04            03:00
```

Fertilizer (F1, F2, F3, F4): amount of fertilizer in the program. In time, the maximum is 99:59 or 99'59"; in volume, it is 99999 or 9999.9 or 999.99 liters. It depends on the configuration of 'Function - 4. Parameters - 8. Installer - 5. Various'. The units configured in 'Function - 4. Parameters - 8. Installer - 5. Various' are common for all programs.

Modify pre- and post-irrigation in 'Function - 4. Parameters - 5. Programs'.

Activations *(00 ... 99)*: there can be several activations of the program every certain amount of time only in program 1. First, enter the number of times the program will be activated and then how often (from 0 to 99:59). Viewing the activations is configured in 'Function - 4. Parameters - 8. Installer - 5. Various'. Manual start only performs one of the activations. If a program has pending actions, it can be seen in 'Consultation - 2. Programs'.

3.1. SEQUENTIAL PROGRAMS

When various sectors must be irrigated one after another, sequential programming may be used. This consists of having an initial program configured for certain irrigation days and a start time and the rest of the programs in the irrigation sequence configured in 'Function - 4. Parameters - 4. Programs' for a type of sequential start.

> 🎖 **Example**
>
> It starts with program 10 in sector 5, everyday at 7:30; once the irrigation has finished, program 11 will automatically start and so on until the last program, in this case number 14.

```
                PROGRAM 10

Sectors: 05
SMTWTFS  Start: 07:30
Irrigation: 02:08
```

```
                PROGRAM 11

Sectors: 06
Sequential prog.:  10
Irrigation: 01:44
```

```
                PROGRAM 12

Sectors: 07
Sequential prog.:  11
Irrigation: 01:55
```

```
                PROGRAM 13

Sectors: 08
Sequential prog.:  12
Irrigation: 02:23
```

```
                PROGRAM 14

Sectors: 09
Sequential prog.:  13
Irrigation: 01:17
```

NOTES

- Any order of programs is acceptable, incremental, decrement, random.

- More than one program can be sequenced when the first has terminated.

- For a program sequence to stop functioning until there is a new command, just cancel out the days of the week in the first program. Enter the days again enable the sequence.

- When a temporary malfunction (TM) occurs while a sequential program is running, the program currently in operation will be stopped and the next one will continue. If the cause of the malfunction remains, it successively stops all the programs in the sequence, registering it in the records.

The installer can prepare the unit to carry out sequential programs by entering the code 99 in place of the start time and the program number that will precede and initialize it, in the place of the start minute.

```
                  PROGRAM 10

Sectors: 05
SMTWTFS  Start: 07:30
Irrigation: 02:08
```

```
                  PROGRAM 11

Sectors: 06
- - - - - - -  Start: 99:10
Irrigation: 01:44
```

```
                  PROGRAM 12

Sectors: 07
- - - - - - -  Start: 99:11
Irrigation: 01:55
```

```
                  PROGRAM 13

Sectors: 08
- - - - - - -  Start: 99:12
Irrigation: 02:23
```

```
                  PROGRAM 14

Sectors: 09
- - - - - - -  Start: 99:13
Irrigation: 01:17
```

3.1.1   Alternating sequential programs

An alternating sequence permits the starting program in one sequential irrigation program to be alternated with a different program in the sequence.

To do this, the installer must configure the option for sequential programs to be alternating ones, keeping in mind that in this case the sequence is ordered from the lowest program number to the highest.

Using the example in the previous section, the first time the program starts it will start with program 10 and terminate with 14. The next time the program starts, it will start with 11 and terminate with 10 and so on.

The program consultation will display the text alternate start to indicate which program starts in the next activation. This information will be updated once the current irrigation sequence has terminated.

Alternating sequential programs

3.2. FERTILIZATION

In series fertilizer, the fertilizers are applied one after another; the first is applied when the pre-irrigation ends and the fertilizer pre-mixing time has finished, if there is one. When one fertilizer has finished, pre-mixing on the next one can begin.

Series fertilization (one behind the other)
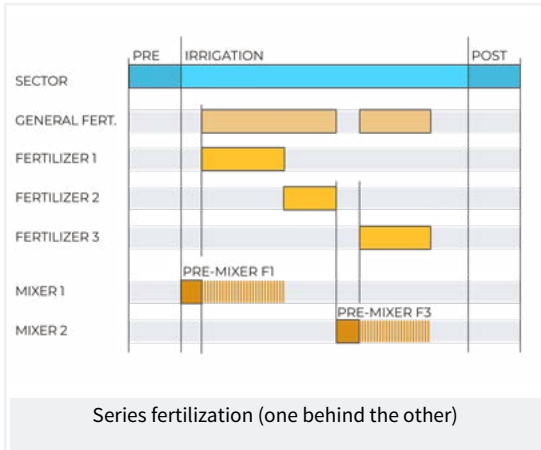
In parallel fertilization, all the fertilizers are applied at the same time once the pre-irrigation and corresponding pre-mixing times have terminated.

Parallel fertilization (all at the same time)
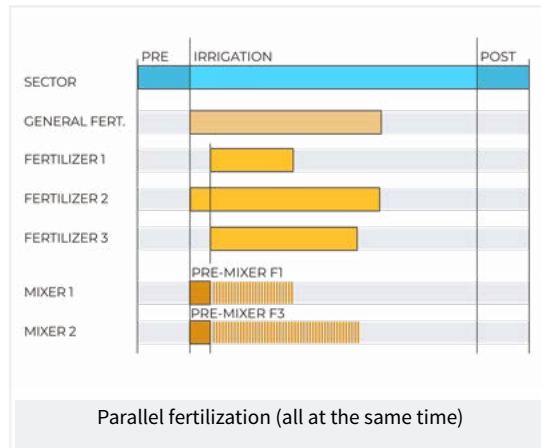
The fertilizer general will always remain on whenever one of the fertilizers is activated.

If a fertilizer is being applied within the post-irrigation area, it will be terminated immediately and an anomaly will be recorded.

4   MANUAL

Manual commands allow actions to be carried out immediately in Agrónic.

To access the menu, press 'Function' on the keyboard, select '2. Manual', 'Enter'.

```
                    FUNCTION

    1. PROGRAMS
    2. MANUAL
    3. READINGS
    4. PARAMETERS
```
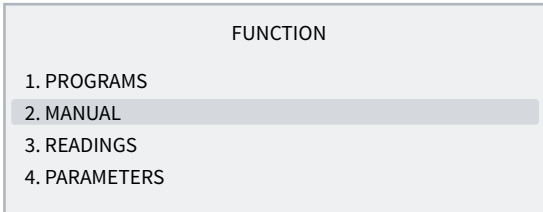
It is divided into eleven sections. To enter one of them, just press the corresponding index number or move to the selection with the arrow keys and then press 'Enter'.

```
                     MANUAL

    1.  Out of service
    2.  STOP
    3.  Program
    4.  Filters
    5.  Clock                        ▼

    6.  Terminate stops
    7.  Sectors
    8.  Totals erasure
    9.  Outputs
```
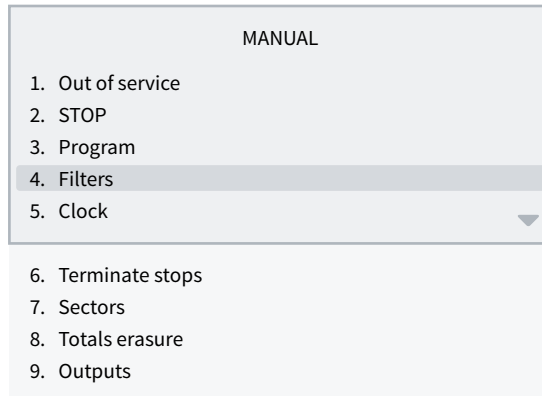
If a menu has more than 5 lines, the '↓' symbol will be displayed to indicate that they do not fit on the screen, so press the index number or move the key '↓' to access them.

4.1. OUT OF SERVICE

When it enters out of service, the irrigation in progress will end and no new irrigation will begin while it remains in this status. After 'Out of Service' the programming will be operational again and the irrigation will begin when the conditions in each program are met.

It is used to stop irrigation for a period of time without de-configuring any program.

4.2. STOP

When entering 'Stop', the irrigations in progress are postponed and it will allow new irrigations to start, postponing them as well. When the 'Stop' status is complete, programming will resume at the same point where it was stopped. If a program is started during the time it is in 'Stop', it will be postponed.

It is used when irrigation must be stopped momentarily and for a short time.

4.3. PROGRAMS

Program *(00 ... 01 ... 50)*: program number.

If the program is stopped

Start *(Yes | No)*: 'Yes' manually starts the irrigation program. There are several points to keep in mind when manually starting a program:

- if there are several activations, only one will be started.

- If it is in a program sequence, it will continue from this program to the end.

If the program is activated

Stop *(Yes | No)*: 'Yes' manually stops the irrigation program. There are several points to keep in mind when manually stopping a program:

- if there are pending activations, they will not stop.

- If it is in a program sequence it stops and the next program will not continue.

4.4. FILTERS

If filter cleaning is stopped:

activate cleaning *(Yes | No)*: 'Yes' manually starts cleaning. If there is no irrigation program, the pump is not activated, only the filter outputs.

If filter cleaning is activated:

stop cleaning *(Yes|No)*: 'Yes' for filter cleaning. Whether it is with the outputs activated or whether it is in the waiting time between cleanings.

If filter cleaning is in malfunction:

stop malfunction *(Yes|No)*: 'Yes' restarts filter cleaning after a malfunction. The malfunction occurs when more commands have been given from the SC input than the maximum number of consecutive cleanings configured in 'Function - 4. Parameters - 2. Filters'.

4.5. CLOCK

To change the date and time of Agrónic. Without power, the Agrónic can keep time for 48 hours.

4.6. TERMINATE STOPS

When the definitive malfunction input (DM) is activated or the irrigation meter input (CR) has not received pulses for longer than the configured time, it goes into definitive malfunction; it appears as 'FINAL STOP' in the general consultation. The affected programs stop irrigation and must be reset manually.

Finish

- Stops and malfunctions *(Yes|No)*:
  - Yes: resets the programs so they can continue irrigation.

- Irrigation postponed *(Yes|No)*: only if the programs are reset.

- Yes: the programs affected by the definitive stop are stopped, canceling the pending irrigation.

- No: the programs affected by the definitive stop continue irrigation at the point where they were when the stop began.

Reactivate SMS *(Yes | No)*: if the Agrónic has SMS sending and the maximumiSMS limit per day has been exceeded, it asks if you would like to restart the sending. The sending is automatically rearmed when the day changes.

4.7. SECTORS

```
                SECTOR MANUAL

Sector: 01
  In automatic:        no
  In manual:          [Start]
                      [Stop]
```

In automatic *(Yes | No)*:

- yes: the programs control the sector start and stop.

- No: the sector is controlled manually.

In manual *(Yes | No)*: it is only effective if it is in 'Automatic: no'.

- Stop: the sector is stopped.

- Start: the sector is running.

If a sector is in manual and a program associated with that sector is entered, the program will be postponed until the sector is set to automatic.

If a sector is started manually and has an associated pump, the pump will be activated.

The units irrigated when the sector is in manual operation are recorded in the history and totals.

4.8. ERASE TOTALS

To erase the sector and meter totals.

If the access code is activated in the 'Function - 4. Parameters - 8. Installer' section, it will be requested to access.

4.9. OUTPUTS

To activate an Agrónic output directly with no control. It should only be used for testing the units.

Up to 6 outputs can be activated. Enter the number to activate and to deactivate. To exit the screen, all outputs must be deactivated.

5   READINGS

In readings, there is information regarding the total times and volumes as well as the incidents recorded as anomalies.

To access the menu, press on the keyboard 'Function - 3. Readings' and then 'Enter'.

```
                    FUNCTION

    1. PROGRAMS
    2. MANUAL
    3. READINGS
    4. PARAMETERS
```
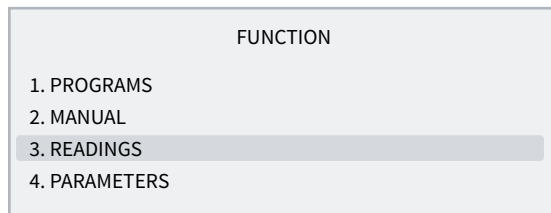
It is divided into four sections. To enter one of them, just press the corresponding index number or move to the selection with the arrow keys and then press 'Enter'.

```
                    READINGS

    1. Totals
    2. Anomalies
    3. Record
```
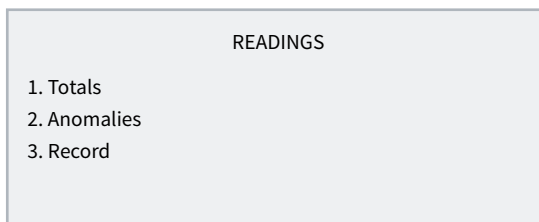
The operation of the keyboard in the different sections of Readings is as follows:

▼   See the next sector or record.

▲   See the previous sector or record.

🟢⁹⊕   See the next day of records.

🟢⁶⊖   See the previous day of records.

5.1.   TOTAL READINGS

The units of water and fertilizers applied in time and volume are shown, in general and in each sector, since the last erase.

The first screen shows the irrigation and fertilizer totals and the last erasure date and time. The total volume is obtained by adding the volumes of each sector. Those totaled by sector are shown from the second screen. Erase in 'Function - 2. Manual - 8. Totals erasure'.

```
              TOTAL READINGS

    SUM  05/03/10  12:23
    Irrigation: 033:25      002541 m3
    F1:         000:25      000025 L
    F2:         000:33      000031 L
```

```
              TOTAL READINGS

    Sector 1
    Irrigation: 002:30      000016 m3
    F1:         000:10      000005 L
    F2:         000:20      000010 L
```
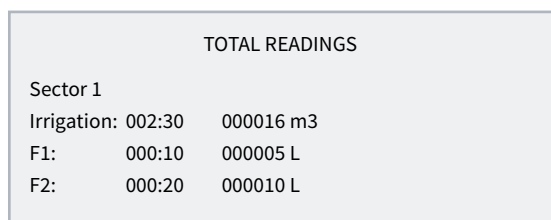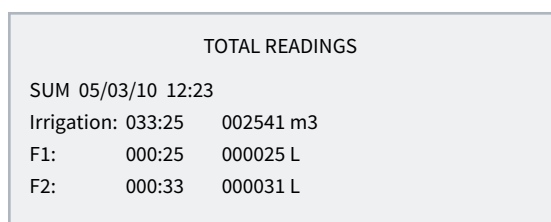
Sector: sector number that shows the total.

Irrigation:

- time: time, in hours and minutes, that this sector has been activated.

- Volume: if the sector has an associated meter, it shows the volume that has passed through it. If a meter is for more than one sector and they are open at the same time, the volume is distributed based on the expected flow. If there is no planned flow, it is distributed equally to all sectors. The volume format is configured in 'Function - 4. Parameters - 8. Installer - 5. Various'.

Fertilizers: fertilizers F1 to F4 are shown.

- Time: time, in hours and minutes, that the fertilizer has been activated while irrigating the sector.

- Volume: if the fertilizer has an associated meter, it shows the volume that has passed through it. If more than one sector is activated when fertilizer, the volume is distributed based on the expected flow of each of the sectors. If there is no planned flow, it is distributed equally to all sectors. The volume format is configured in 'Function - 4. Parameters - 8. Installer - 5. Various'.

5.2. ANOMALY READINGS

Displays the record of events configured as anomalies. Configuring an event as an anomaly in 'Function - 4. Parameters - 8. Installer - 2. Events'.

Because they are anomalies, when they occur, they appear on the general consultation screen and in this list so that they are accessible more quickly.

Anomalies are also included in the record.

The following section shows a list of all the events that Agrónic can record.

5.3. RECORD READINGS

The events that have been logged are displayed, including those that are configured as anomalies (An).

No.	Affects	Description	(*)
1	Agrónic	Power cut less than 1 minute.	
2	Agrónic	Electrical cut between 1 and 10 minutes.	An
3	Agrónic	Electrical cut between 10 and 60 minutes.	An
4	Agrónic	Power cut greater than 60 minutes.	An
5	Agrónic	Error in the analog sensor.	An
6	Manual	Enter or exit STOP.	
7	Manual	Enter or exit Out of service.	
8	Manual	Manual action on a program (start, stop).	
9	Manual	Terminate stops and malfunctions.	
10	Manual	Manual action on a sector (manual stop, manual start, automatic).	
11	Manual	Manual actuation on a digital output (active or stopped).	
12	Manual	Totals erased.	
13	Manual	Date and time changed.	
15	Manual	Manual action on filter cleaning (start cleaning).	
16	Erased	Programs, sectors, determining factors, etc. have been erased.	
17	Program	Program start.	
18	Program	Modified irrigation. Shows the determining factor that modifies it and the amount.	
19	Program	Modified fertilizer 1. Shows the determining factor that modifies it and the amount.	
20	Program	Modified fertilizer 2. Shows the determining factor that modifies it and the amount.	
21	Program	Modified fertilizer 3. Shows the determining factor that modifies it and the amount.	
22	Program	Modified fertilizer 4. Shows the determining factor that modifies it and the amount.	
23	Program	The program has been postponed. Shows the reason.	
24	Program	Start in course. Shows the irrigation amount.	
25	Program	Fertilization begins. Shows the fertilizer and the amount.	
26	Program	End fertilizer. Shows the amount of fertilizer that is left pending and the reason why it stopped. It is only recorded if there is excess fertilizer.	An
27	Program	End of the program. Shows the reason.	
28	Filters	Start of filter cleaning. Shows the reason.	
29	Filters	Uncontrolled filter cleaning. The consecutive cleaning limit has been surpassed.	An

No.	Affects	Description	(*)
30	Diesel	There is oil pressure. Check that there is pressure before starting the pump.	An
31	Diesel	Does not start. All attempts have been used and the pump has not started.	An
32	Diesel	Oil pressure error. The pressure has dropped with the pump running.	An
33	Stops and malfunctions	Definitive stop. DM input.	An
34	Stops and malfunctions	Temporary stop.	An
39	Stops and malfunctions	Alarm.	
44	Stops and malfunctions	Stop fertilizer.	
45	Communication	SMS limit per day exceeded.	An
46	Communication	Command received by SMS. Shows the command and the phone that sent it.	
47	Communication	Communication error with GPRS modem.	An
48	Communication	Start and end of communication with the CS.	
49	Communication	Communication error with AgroBee modules.	
50	Communication	Communication error with the radio link.	An
51	Communication	GPRS communication. Daily data consumption.	
52	Communication	GPRS communication. Monthly data limit exceeded.	
53	Communication	Communication error with the WiFi module.	

(*): records marked 'An.' are assigned from the factory as 'Anomalies'.

6 CONSULTATION

The Reports menu is accessed by the key Consultation; once the menu has been selected, we will find detailed information on what the Agrónic 2500 is doing.

6.1. GENERAL CONSULTATION

A summary of the most important information about Agrónic is shown on a single screen.

The lines on the screen vary the information depending on what the Agrónic is doing.

```
                    GENERAL CONSULTATION

        Mon  01/01/05 10:12:35
        New anomalies: 05
        S: 01 02
        M:12  F:-2-4
        ST
```

```
                    CONSULTATION

        1. GENERAL
        2. PROGRAMS
        3. SECTORS
        4. FERTILIZERS
        5. FILTERS

        6. COMMUNICATION
        7. AGRÓNIC
```

Consultation	Description
Mon 01/01/05 10:12:35	Current date and time
New anomalies: 05	Number of anomalies that have been recorded since the last time "Readings – Anomalies" was entered.
* OUT OF SERVICE *	The Agrónic is out of service. To exit this status, go to "Function – Manual – Out of service".
* STOP *	The Agrónic is in STOP. To exit this status, go to "Function – Manual – STOP".
* DEFINITIVE STOP *	One of the programs that was irrigating has been stopped by the DM input or an error in the irrigation meter. To exit this status, go to "Function – Manual – Stops and malfunctions".
* FLASH ERROR *	An error has occurred in the internal memory. The unit must be repaired.
No irrigation under way	There are no sectors activated.
S: 01 02	If there are irrigation sectors, it shows which ones they are.
P:12	Pumps 1 and 2 activated.
F: - 2 - 4	Fertilizers 2 and 4 activated.
M: – 2 – 4	Mixers 2 and 4 activated.
C: 1	Cleaning the filter 1.
IM: -	Irrigation meter status. A 1 closed contact
FM: - - - -	Fertilizing meter status. When the number is shown, the contact is closed.
ST, TM, DM, CS, PS, PA, AL	Shows which digital inputs are activated. ST (start cleaning), TM (temporary malfunction), DM (definitive malfunction), CS (conditional stop), PS (program start), PA (oil pressure gage, diesel option), AL (alarm, Cloud option)

Diesel:
    stopped
    preheat. 20"
    Start 1
    wait 30"
    20" pump enters
    activated
    salt. 10" pump
    stopping 5"
    in malfunction
	Diesel pump status (only with diesel option):
	    pump stopped.
	    Preheating output activated (indicates the remaining time).
	    Start output activated (indicates the number of attempts).
	    Waiting between starts (indicates the time remaining).
	    Diesel activated, waiting to activate M1 (indicates time remaining).
	    Diesel and M1 activated.
	    There are no sectors activated, waiting to stop M1 and then the diesel.
	    The stop output is activated (indicates the time remaining).
	    Diesel in malfunction, it has not started after 4 attempts. It will attempt again at the next irrigation.

6.2. PROGRAM CONSULTATION

```
                PROGRAM CONSULTATION

01R       02a       03.       04.       05.
06.       07.       08.       09.       10.
11.       12.       13.       14.       15.
16.       17.       18.       19.       20.
Program No.: 01
```

```
        CONSULTATION P01 OLIVE TREES

Irrigating
Sectors: 01 02
Irrigation: 01:27
Fert. 1: 00:05
```

The first screen shows all the programs; The status is summarized next to the program number:

- r = irrigating

- a = postponed

- p = activations pending

- d = definitive stop

For a more detailed consultation of a program, enter the number and press enter.

The following table shows all the information about the consultation.

Consultation	Description
Consultation P01 Olive trees	Program number and associated name
Stopped	Program stopped.
Irrigating	Program activated.
Manual run	Program activated manually.
DEFINITIVE STOP	Program stopped due to DM input or meter error. It is manually reset in "Functions – Manual – Terminate stops".
Activations pending	Program stopped because it was between two activations. It can only be with program 1.
Postponed, 　cleaning filters 　Fert. overlap 　sector limit 　unit in STOP 　conditional stop 　sector already active 　sector in manual 　diesel start-up	Program started, but irrigation has stopped for some reason: 　Because it is cleaning filters. 　Because a program that uses the same fertilizer is activated. 　Due to having exceeded the limit of active sectors in the base. 　Because the Agrónic is in STOP. 　Because the Conditional Stop (CS) input is activated. 　Because there is another program activated with the same sector. 　Because a sector of the program is in manual. 　Because it is starting the diesel pump.
Irrigation: 01:27	Amount of irrigation remaining to finish.
Pre-irrigation: 00:00	Amount of pre-irrigation needed to start fertilization. It only appears if fertilizer and pre-irrigation are configured.
Post-irrigation: 00:00	Amount of finishing remaining to finish. It only appears if fertilizer and post-irrigation are configured.
Fert.1, 2, 3, 4:	Amount of fertilizer remaining to finish.
Activations 02 – 02:38	Going by activations shows those that are pending and the time remaining until the next start.
Alternate start	Indicates that it is the first program in an alternating sequence.
P02 Sequential	Indicates that it is sequential from program 2.

6.3. SECTOR CONSULTATION

```
          SECTOR CONSULTATION
01R      02.      03.      04.      05.
06.      07m      08.      09.      10.
11.      12.      13.      14.      15.
16.      17.      18.      19.      20.
Sector: 01
```

```
          CONSULTATION S01

Active
Program: 01 Olive trees
Irrigation: 01:27
```

The first screen shows all the sectors. Its status is briefly indicated next to the sector number:

- r = irrigating

- m = in manual run

- p = in manual stop

For a more detailed consultation of a sector, enter the number and press enter.

The following table shows all the information about the consultation.

Consultation	Description
Consultation S01 zone 1	Sector number and associated name
Status: stopped	Sector stopped or waiting for water hammer to open.
Status: active	Active sector, waiting for water hammer to close or waiting for active diesel.
Status: manual run	Manually activated sector.
Status: manual stop	Manually stopped sector.
Program: 01 Olive trees	Program that controls the sector and associated name.
Irrigation: 01:27	Amount of irrigation remaining to stop the sector.

6.4. FERTILIZING CONSULTATION

```
        FERTILIZING CONSULTATION

F1: 0000.0 L            M1: 000"
F2: 0087.5 L            M2: 024" Start
F3: 0000.0 L
F4: 0120.0 L            M4: 000"
Cleaning: 020"
```

If no program that fertilizes is activated, the fertilizers are shown at 0. If a program that fertilizes has been activated, it shows the amount left to finish.

If the fertilizer has a mixer (M1, M2, M3 or M4), it shows the time pending in pre-mixing, the start or the mixer.

If the final fertilizer cleaning is running, the time remaining shows.

6.5. FILTER CONSULTATION

FILTER CONSULTATION

Cleaning stopped
Units between cleanings:
time: 0212'
Volume: 0200 m3

FILTER CONSULTATION

Filter cleaning 1
Active: 20"

If it is between two cleanings: the time and volume remaining until the next cleaning shows. If cleaning is done by pressure gage, the units between cleanings

are at 0. The units are discounted when water passes through the pump related to the filters.

If cleaning: shows the filter being cleaned, whether the filter is active or paused and the time remaining to finish. If there is an initial waiting time, it shows how much time is remaining before cleaning the first filter.

If it is in malfunction: it goes into malfunction when the maximum number of consecutive cleanings is exceeded. It must be reset manually in 'Function - 2. Manual - 4. Filters'.

The Communications Query section is detailed in the Communications Manual r1850

6.6. AGRÓNIC CONSULTATION

```
        AGRÓNIC CONSULTATION 2500

NS: 00001          V: 3.00      Relay 2
V. Out.: yes
Vcc: 12.7 v
GSM/GPRS Modem
AgroBee-L 868
```

NS: agrónic serial number.

V: agrónic software version.

Base plate type: after the version, the type of base plate connected is indicated. The base can be with relays (Relay 1 or Relay 2) or latch (Latch 1 or Latch 2). If it is latch, indicate whether it is for 2-wire (2), 2-wire inverted (2i) or 3-wire (3) solenoids.

V.Out.: if there is voltage on the outputs. If no voltage is indicated, check the output power terminals (R+, R-) or that there is no over-consumption in the valves and that the thermal fuse has been activated. If the unit is dual voltage, this consultation does not appear.

Vcc: supply voltage.

GSM/GPRS modem: it has been detected that the GPRS modem is connected.

Radio 433: it has been detected that Radio Link 433 is connected.

WiFi: it has been detected that the WiFi module is connected.

AgroBee-L: it has been detected that the AgroBee-L radio module coordinator is connected.

7 DIESEL OPTION ANNEX

This option increases the functions of the Agrónic 2500 by providing control over the internal combustion pump (diesel or gasoline) with an electric starter.

The operational theory is the following: when the first irrigation program is about to begin (related to Pump 1), the corresponding irrigation sector activates and the contact output is activated, as is the preheating output, if applicable. When this has finished, the first start-up is attempted.

If the unit detects oil pressure 30 seconds after the first attempt, it will consider the attempts have been successful. If this time has passed and there is no pressure, the unit will attempt to start up the pump again and so on until a total of 4 is reached. If there is no pressure after 4 attempts, activate the pump stop and go into start-up malfunction.

When it is in start-up malfunction you can check in 'Function - 3. Readings - 2. Anomalies' when it occurred, which programs were running and the reason for the malfunction. The reasons may be:

```
                    ANOMALY

    N30  dd/mm/yy hh:mm
    Diesel pump
    There is oil pressure
```

Diesel pump, oil pressure found

[N30]

When irrigation starts, the unit attempts to activate the diesel pump and it finds there already is oil pressure, which in theory means that the pump is running. In this case an anomaly is recorded and irrigation and pump control continues without making any more start-up attempts.

```
                    ANOMALY

    N31  dd/mm/yy hh:mm
    Diesel pump
    Does not start
```

Diesel Pump, does not start

[N31]

Once the four start-up attempts have been made and 30 seconds have passed, if the pump is not operating,

the programs under way that contain the sectors related to pump 1 will be terminated.

```
                    ANOMALY

    N32  dd/mm/yy hh:mm
    Diesel pump
    Oil pressure error
```

Diesel pump, oil pressure error

[N32]

When a loss of pressure in the cylinder head is detected when the pump is operating, a record of the anomaly is made and the sectors being irrigated related to pump 1 are stopped.

CONSULTATION

The general consultation informs about the status of the diesel pump or generator; the status of the oil pressure gage is indicated on the last line of the first screen. The second screen shows the status of the diesel.

```
              GENERAL CONSULTATION

    Mon  01/01/05 10:12:35
    New anomalies: 05
    S: 01  02
    P: 1 2        F: 2-4
    Diesel: stopped
```

```
    Diesel: stopped
    Diesel: preheating 008"
    Diesel: start 1
    Diesel: wait 12"
    Diesel: entering pump 036"
    Diesel: activated
    Diesel: pump coming out 105"
    Diesel: stopping 045"
    Diesel: in malfunction
```

8 TROUBLESHOOTING

These are the most common problems and we attempt to provide the solution to facilitate learning.

The irrigation program does not start

Go to '==Consultation - 2. Programs=='', if an ' a ' or ' d ' appears next to the program, it indicates that there is something preventing irrigation. '==Enter=='' inside the program to see what it is.

For further information, see the Program consultation section.

The Agrónic time is not correct

To change the time of the Agrónic, go to '==Function - 2. Manual - 5. Clock=='.

See frequently asked questions

9 TECHNICAL SUPPORT

Apart from this manual, the Agrónic 2500 has other manuals, instruction videos, tips and frequently asked questions on the Progrés website, Technical Support section.

Assembly and connection manual r2465

Intended for those who physically install the Agrónic on the farm or in the electrical panel. Shows the dimensions and how the different connection options must be wired.

Communications manual r1850

Intended for installers who configure communications with the cloud for VEGGA and Agrónic APP or with the Agrónic PC Windows program. There is the explanation of the different communication systems.
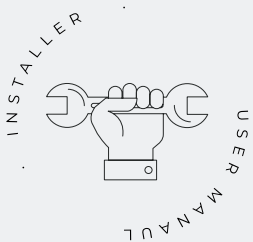
Installer's manual

r2466 r2468

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

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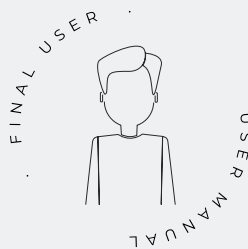
End user manual

r2467 r2469

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

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

Pivot manual

r2485

For the installer and end user who uses the unit for pivot control.

Solar irrigation manual *r2006*

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

Installing the options

Installation Option GPRS

Installation Option USB (r1933)

Installation Option WiFi

Installation Option AgroBee

Installation Option AgroBee-L (r2367)

Installation Option 2 analog inputs (r2366)

Installation Option SDI-12 and 4 in. Ana. (r2369)

Installation Option 5 digital inputs (r2370)

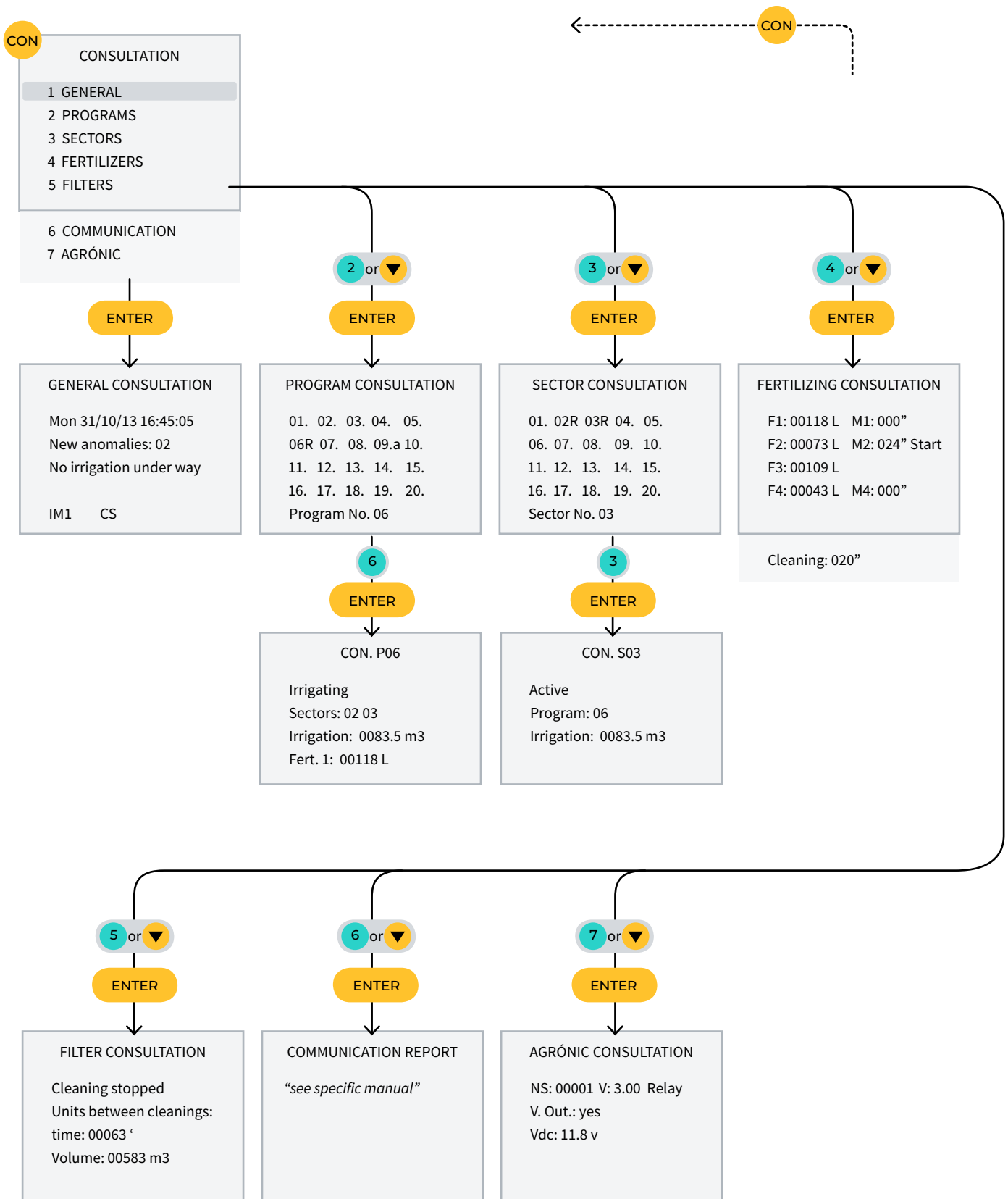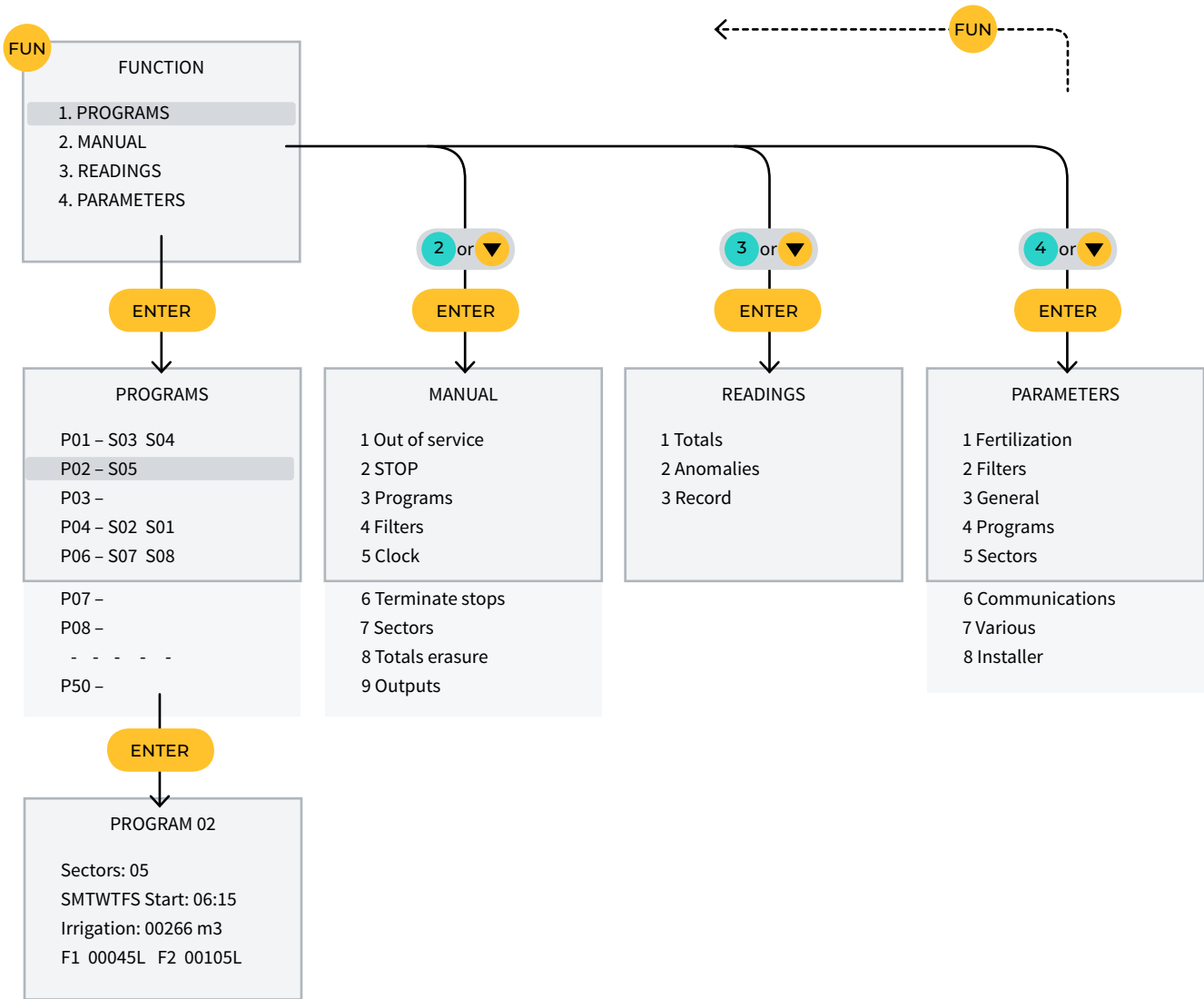Installation Power limiting resistor

Video tutorials

There are instruction videos on the Progrés website explaining the most frequently asked questions step-by-step. Please consult them if you have any questions or problems, you may find the solution there.

10 CONSULTATION SCREENS

CON

CONSULTATION

1 GENERAL
2 PROGRAMS
3 SECTORS
4 FERTILIZERS
5 FILTERS

6 COMMUNICATION
7 AGRÓNIC

CON

ENTER

GENERAL CONSULTATION

Mon 31/10/13 16:45:05
New anomalies: 02
No irrigation under way

IM1   CS

2 or ▼ → **ENTER**

PROGRAM CONSULTATION

01. 02. 03. 04. 05.
06R 07. 08. 09.a 10.
11. 12. 13. 14. 15.
16. 17. 18. 19. 20.
Program No. 06

6 **ENTER**

CON. P06

Irrigating
Sectors: 02 03
Irrigation: 0083.5 m3
Fert. 1: 00118 L

3 or ▼ → **ENTER**

SECTOR CONSULTATION

01. 02R 03R 04. 05.
06. 07. 08. 09. 10.
11. 12. 13. 14. 15.
16. 17. 18. 19. 20.
Sector No. 03

3 **ENTER**

CON. S03

Active
Program: 06
Irrigation: 0083.5 m3

4 or ▼ → **ENTER**

FERTILIZING CONSULTATION

F1: 00118 L   M1: 000"
F2: 00073 L   M2: 024" Start
F3: 00109 L
F4: 00043 L   M4: 000"

Cleaning: 020"

5 or ▼ → **ENTER**

FILTER CONSULTATION

Cleaning stopped
Units between cleanings:
time: 00063 '
Volume: 00583 m3

6 or ▼ → **ENTER**

COMMUNICATION REPORT

"see specific manual"

7 or ▼ → **ENTER**

AGRÓNIC CONSULTATION

NS: 00001 V: 3.00 Relay
V. Out.: yes
Vdc: 11.8 v

11 FUNCTION SCREENS

FUN

FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS

FUN

2 or ▼

3 or ▼

4 or ▼

ENTER

ENTER

ENTER

ENTER

PROGRAMS	MANUAL	READINGS	PARAMETERS
P01 – S03 S04	1 Out of service	1 Totals	1 Fertilization
P02 – S05	2 STOP	2 Anomalies	2 Filters
P03 –	3 Programs	3 Record	3 General
P04 – S02 S01	4 Filters		4 Programs
P06 – S07 S08	5 Clock		5 Sectors
P07 –	6 Terminate stops		6 Communications
P08 –	7 Sectors		7 Various
- - - - -	8 Totals erasure		8 Installer
P50 –	9 Outputs		

ENTER

PROGRAM 02

Sectors: 05
SMTWTFS Start: 06:15
Irrigation: 00266 m3
F1 00045L F2 00105L

R-2467