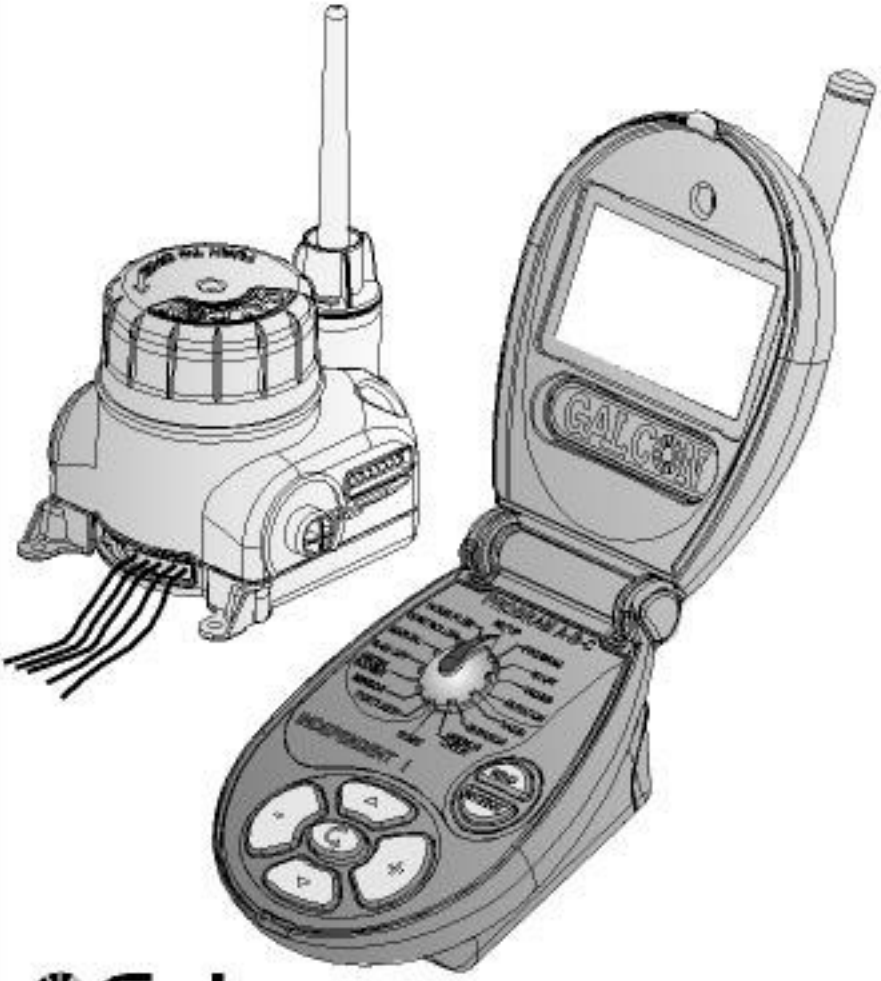
RADIO CONTROLLER

Installation and Operation Guide



Galcon

Leading Irrigation Controllers Producer in Israel

Kibbutz Kfar Blum 12150, Tel.: 972-4-6900222; Fax: 972-4-6902727

A wireless system comprised of a mobile, battery operated programmer, commanding numerous controllers. Operation range between the programmer and the controllers – up to 100 meters.

Programmer Features

- A programmer with a selector, user friendly and easily operated.
- 5 optional languages: Hebrew, English, Spanish, Italian and French.
- Controls numerous controllers.
- The programmer saves the memory of 50 controllers.
- Weekly or cyclic irrigation programs for a group of valves.
- Weekly or cyclic irrigation programs for an individual valve.
- A fertilization program for each valve separately.
- Optional change of the irrigation duration in percentage(%).
- 8 valve opening operations per day for each program or individual valve.
- Irrigation duration from 1 minute up to 9 hours.
- An irrigation cycle from once a day up to 30 times daily.
- Option for manual computerized operation of each separate valve or a group of valves.
- Powered by four AA 1.5 VDC batteries.
- Program backup in the memory, even without a battery.
- Galcon Warranty and Service.

Controller Features

- Waterproof.
- Various models, to operate 1, 2, 4 and 6 valves.
- All models include a master valve, control valve for hydraulic fertilizer pump and an external sensor.
- Can be installed on a solenoid, using the bracket (include).
- Adjustable, antenna.
- Powered by two C 1.5 VDC batteries.
- Galcon Warranty and Service.

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2. Battery compartment cover
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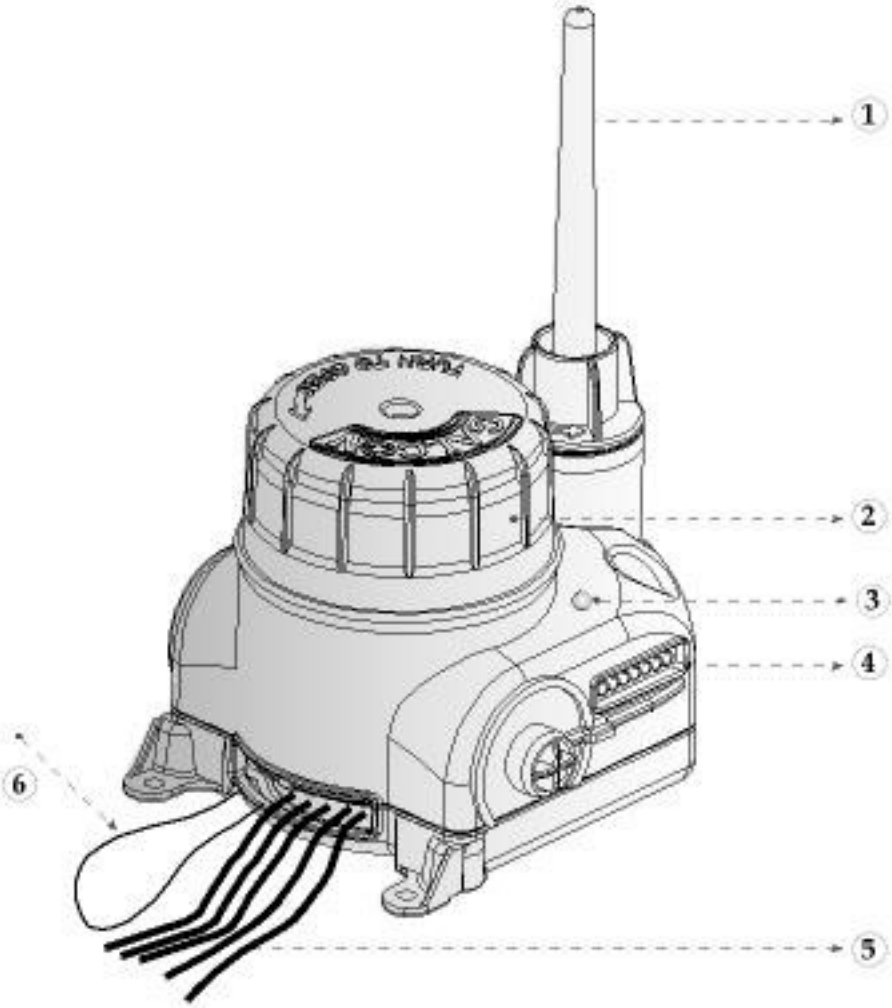
6. Loope sensor cable



Connecting the Solenoid Wires to the Controller

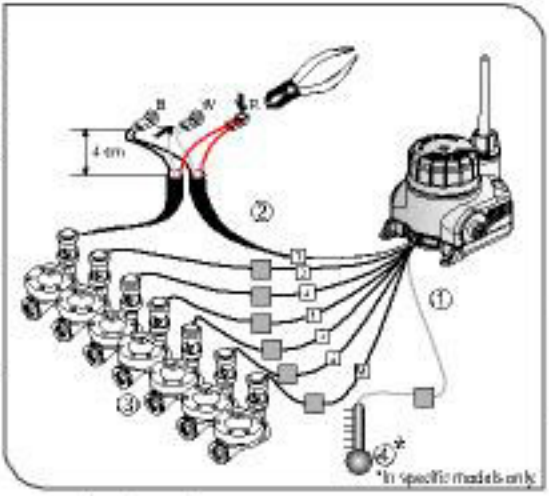
Connect the valves to the cables which emerge from the controller. Refer to the drawing and the instructions below.

Cables, marked by labels come emerge from the controller (1). A cover is attached to the end of each cable. Remove the cover before you conect the cable. These cables are compatible with Galcon, DC type (3) irrigation valves.

The controller and its connections are waterproof.To maintain its impermeability, be sure to carry out the following instructions carefully:

• Do not remove the cover off a cable that will not be connected to a valve. Exposed wire strands may cause a short circuit upon contact between the strands or with conducting items.

• Connect the cables to the valves using waterproof connectors (2). The connectors are supplied with the product. Refer to the drawing.



1. Cut the cover off the cable which emerges from the controller (1) near its connection to the cable and expose the cable strands beneath the black insulation. The cables to the solenoid have 3 strands: white, red and black. Do not remove the colored insulation off the strands.
2. Connect each strand to a waterproof connector (2).
3. A cable with 3 strands emerges from each solenoid: white, red and black. Connect the white strand of the solenoid to the connector you connected onto the white strand of the cable that emerges from the controller. Connect the red and black strands in the same way. Refer to the drawing.
4. Connect the remaining controller cables to the cables of the solenoids, according to the number of valves in the system. Ascertain that the numbers of the valves correspond to the numbers marked on the controller cables.
5. Connecting a sensor (optional). The sensor is connected to the looped cable. Cut the looped cable in the middle, connect the wires of the sensor to both sides of the cable.

Note! Do not program a valve which is not used and which is not connected with an waterproof connector!

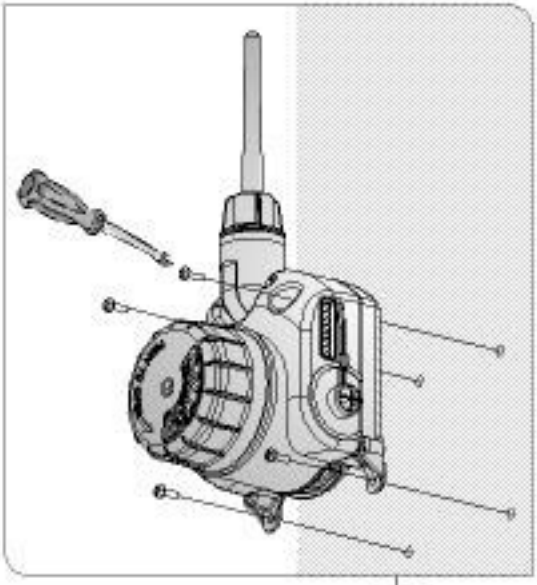
It is recommended to insert the batteries after the solenoids connecting stage.

You can install the controller in one of the following ways:

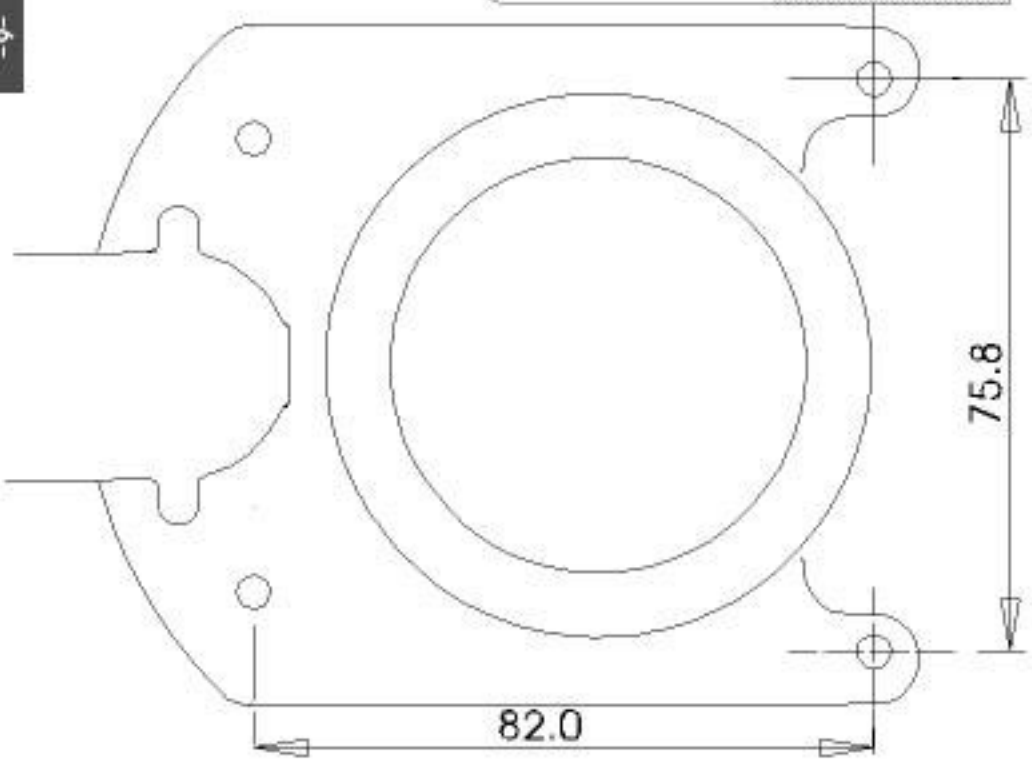
1. On a wall.

2. On a solenoid.

Installation on a Wall
Mount the controller on the wall, using screws.(refer to the drawing).



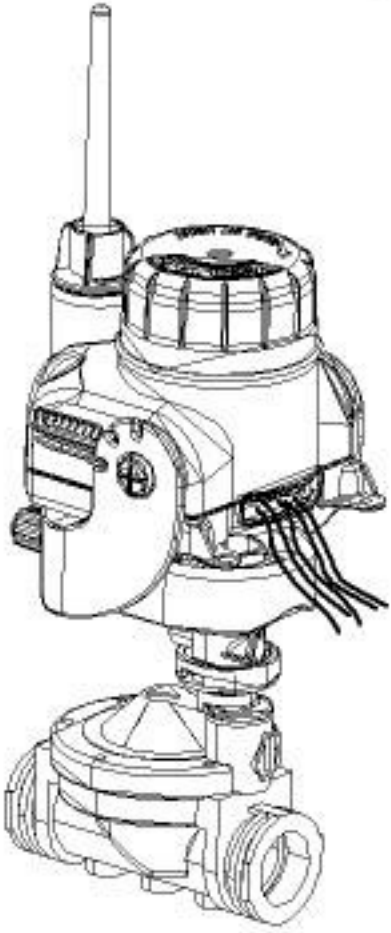
Ascertain that the antenna is vertical.



Installation on a Solenoid

Joine the bracket onto the controller.
Tighten the bracket, using the bolt.

Ascertain that the antenna is vertical. Note the direction of the bracket & solenoid manual level (refer to the drawing).



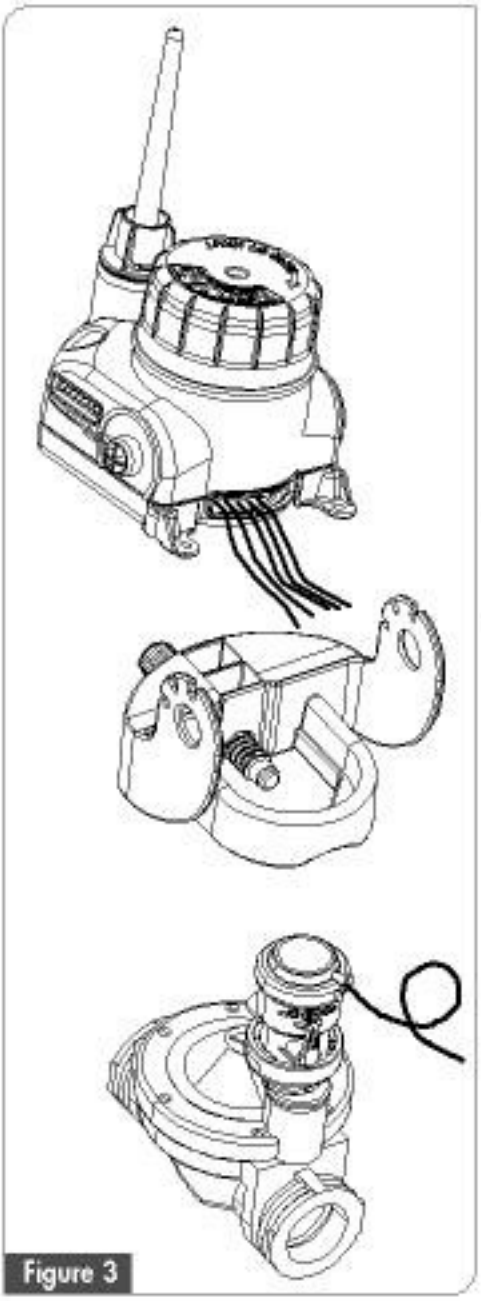


Figure 3

Installation of the Batteries

a.Insert the batteries (1.5 VDC) according to Figure 4.
Ascertain that the batteries are inserted in the correct direction of polarity (+/ -).

It is recommended to use high quality alkaline batteries.

b.Close the cover of the battery compartment tightly by hand, up to the end of the thread (Figure 5). Do not use a spanner.

c. Wait for 2-3 seconds after closing the cover. The control light will blink 4 times to confirm that the batteries are inserted correctly.

Wait for one or two minutes after the installation of the batteries. The controller performs an initial closing of the valves. The light blinks every time a valve is closed.

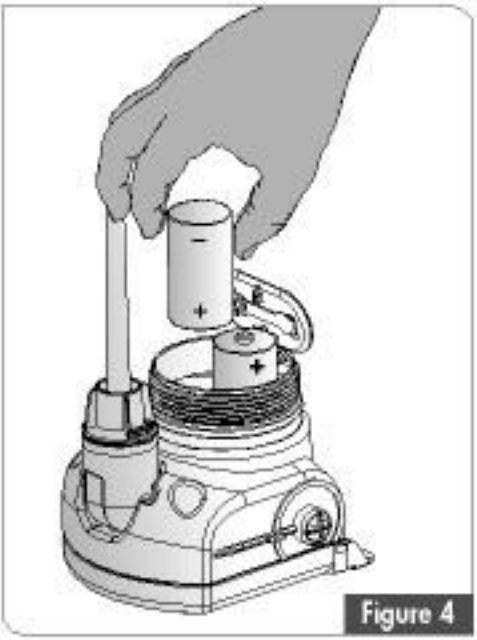


Figure 4

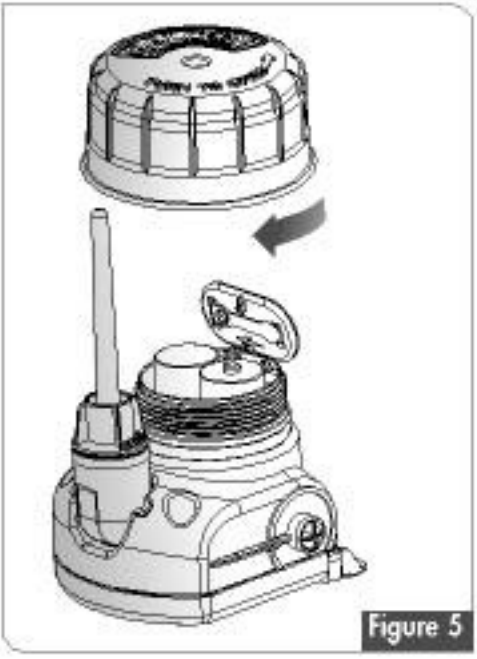
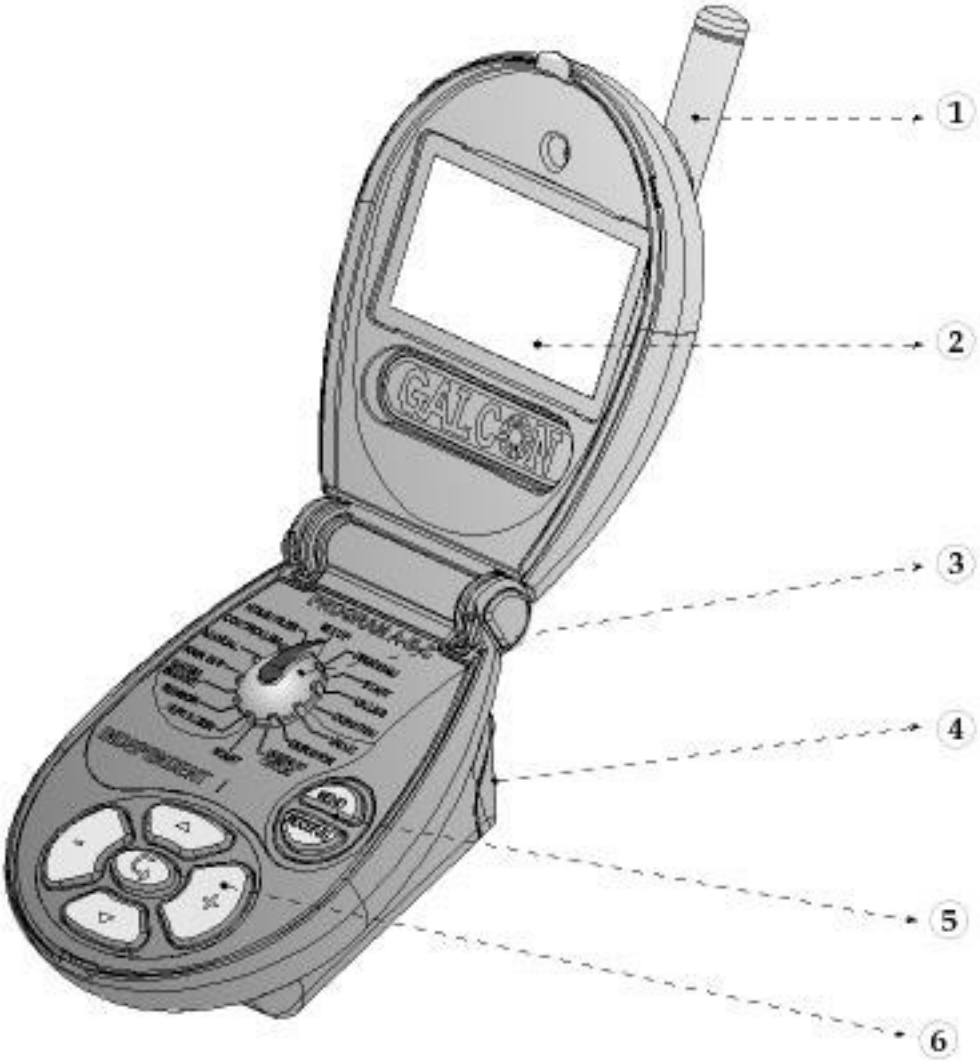


Figure 5

1. Antenna.
2. Display.
3. Programs selector.
4. Battery compartment.
5. SEND and RECEIVE pushbuttons.
6. Programming pushbuttons.



General information

The programmer is easily operated by a selector and five pushbuttons. You can save programs in home files (up to 4 programs), or send the programs directly to a controller. Programs that were sent to the controller and received are saved in the memory of the programmer according to the controller's code (up to 50 controllers).

By using the programer you can transfer programs from home files to controllers, modify programs located in the controller and create new programs.

Note! The irrigation is programmed in the programmer only and not in the controller itself. The controller opens and shuts the valves. To transmit programs to the controllers, ascertain that the programmer is located within the reception range of the controller (up to 100 meters). When the **transmission** is completed successfully, the message Send successful is displayed on the screen, confirming reception of the program.

The Programmer Offers 2 types of Irrigation Programs

• an irrigation program for a group of valves; * an irrigation program for an individual valve.

Additional Options:

Fertilizing program at each valve.

An Irrigation Program for a Group of Valves, Pages 13-18

You can program three programs: A, B and C.

For each program, select the irrigation days on which the valves will operate. Set a starting time for the first valve only and define the irrigation duration for each valve separately. The valves open in sequence, according to their serial number on the display. When the first valve shuts off the second valve opens up and so on. Only one valve operates at any given moment. When you program programs (A + B + C) with overlapping irrigation times, program A starts first and program B starts only after program A ends. Program C opens after Program B ends.

When no fertilization program is programmed, two valves can open simultaneously.

Independent Program I, page 19 – 24

Use this method to define an individual program for each valve. Select the desired valve first and then proceed to define the irrigation program: Set irrigation duration, irrigation days or irrigation cycles and the start time of that valve.

General Description

Program the controller, using the 16 position selector and 5 pushbuttons:

⊕ Addition pushbutton – to add to the selected value and confirm activity in certain conditions.

⊖ Deduction pushbutton – to deduct from the given value.

⇧ Scroll up pushbutton.

⇩ Scroll down pushbutton.

⏎ Opens the field and moves from one field to another.

Open the cover of the battery compartment, using the designated button.
Insert the batteries (AA 1.5 V) as shown in the figure below. Ascertain correct direction of polarity (+ / -).
Close the cover of the battery compartment, using the designated button.

Use high quality alkaline batteries only.

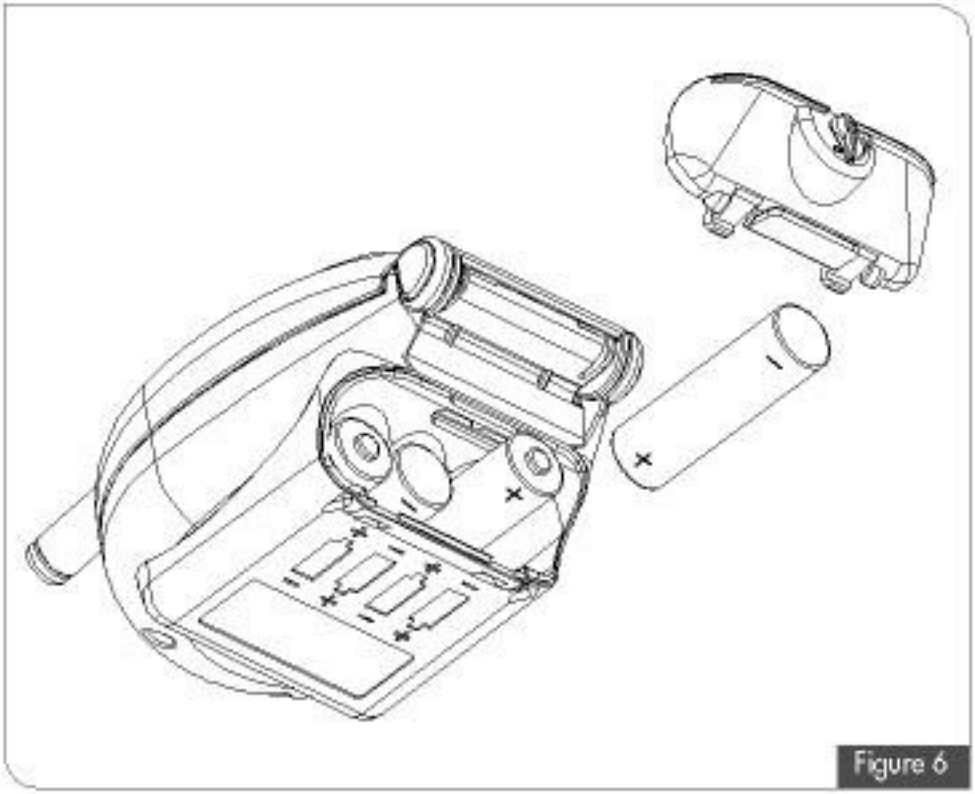
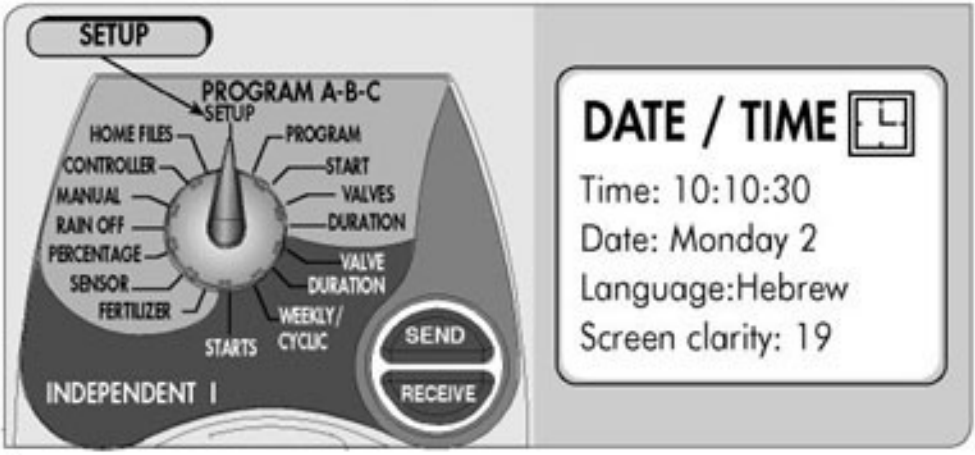


Figure 6

Language Selection, Current Date and Time Setting
When the display is turned off, press one of the programming pushbuttons, to start the display.

Turn the selector to SETUP position.



Language
Press on ⟲ until the cursor moves to the Language line. Set the required language, using the ⊕ or the ⊖ pushbutton. (You may also use the up ⇧ and down ⇩ arrows to reach the language line).

Setting Current Time
Press on ⟲ until the cursor moves below the hour digit.
The arrow on the left indicates the line you reached. Set the hour digit, using the ⊕ or the ⊖ pushbutton.

Press on ⟲. The cursor moves to the minutes. Set the minutes, using the ⊕ or the ⊖ pushbutton.

Setting the Date
Press on ⟲. The cursor moves to the days. Set the current date, using the ⊕ or the ⊖ pushbutton.

Brightness
Press on ⟲. The cursor moves to Brightness. Set the desired screen brightness, using the ⊕ or the ⊖ pushbutton.

You can use the up ⇧ and down ⇩ arrows to move quickly from one line to another. The arrow on the left indicates the line you reached.

Irrigation Program for a Group of Valves

The programmer offers two valves programming options:
1.Program A, B, C – A common program for a selected number of valves.
2.Individual program I – a separate program for each valve.

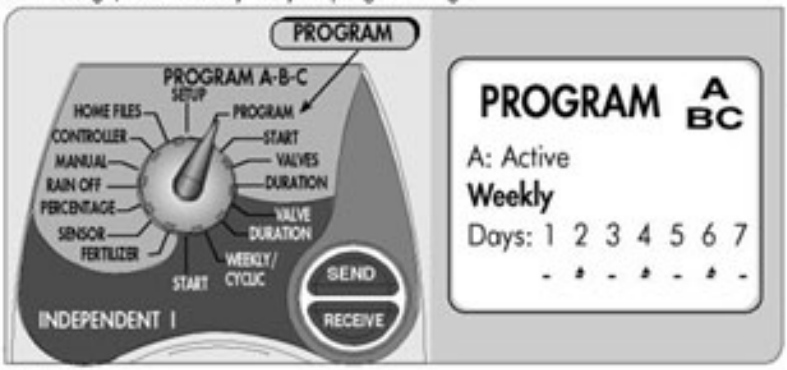
Turn the selector to Program position

Selecting a Program (weekly or cyclic)

Press on ⓒ until the cursor moves below the A B or C program icon.
Use the ⊕ or ⊖ pushbutton to select the desired program.
Press on ⓒ. The cursor moves to Active/ Inactive.
Use the ⊕ or ⊖ pushbutton to define the active or inactive program.

You can stop a certain program by turning it to an inactive position, even after you programmed the program.

At this stage, select weekly or cyclic programming.



Weekly Program

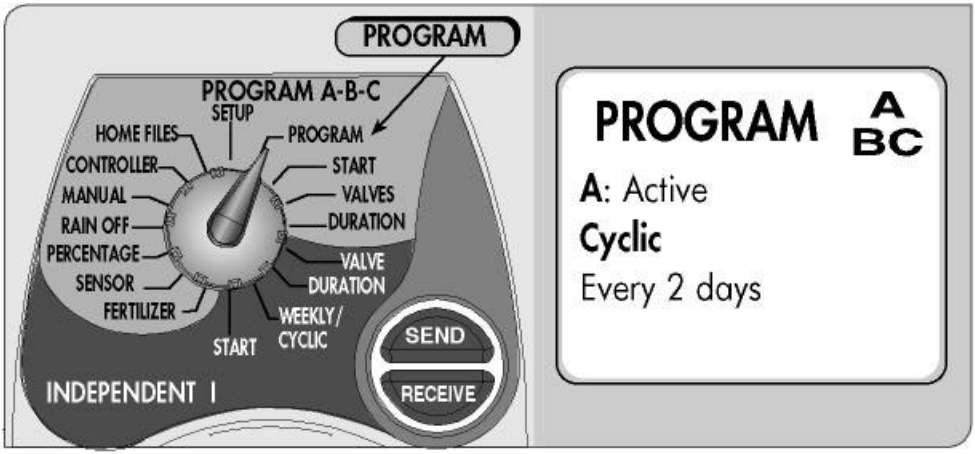
This program sets the days of the week on which the valves assigned to the program will operate.
Select the desired program (A, B, C) and then press on ⓒ.
Use the ⊕ or ⊖ pushbutton to select **Weekly**.

You have to select **Irrigation Days** for the weekly program.

Press on ⓒ. The cursor appears under day 1.
Press on ⊕. A small triangle appears under the digit 1, Sunday is selected as an irrigation day.
Upon pressing on ⓒ the cursor moves to 2 – Monday. Continue marking the desired days in the same way.
To delete selected days, press on ⊖.

Cyclic Program

Use this mode to program the computer to operate the selected program at a fixed cyclic time. The cycle time can be from one day and up to 30 days. The cycle time is identical for all the valves assigned to this program.



Select the desired program (A, B, C) and then press on ⟲.

Use the ⊕ or ⊖ pushbutton to select **Cyclic**.

Press on ⟲. The cursor appears under days digit.

Use the ⊕ or ⊖ pushbutton to set the desired cycle time (in days).

You can use the up ⇧ and down ⇩ arrows to move quickly from one line to another. The arrow on the left indicates the line you reached.

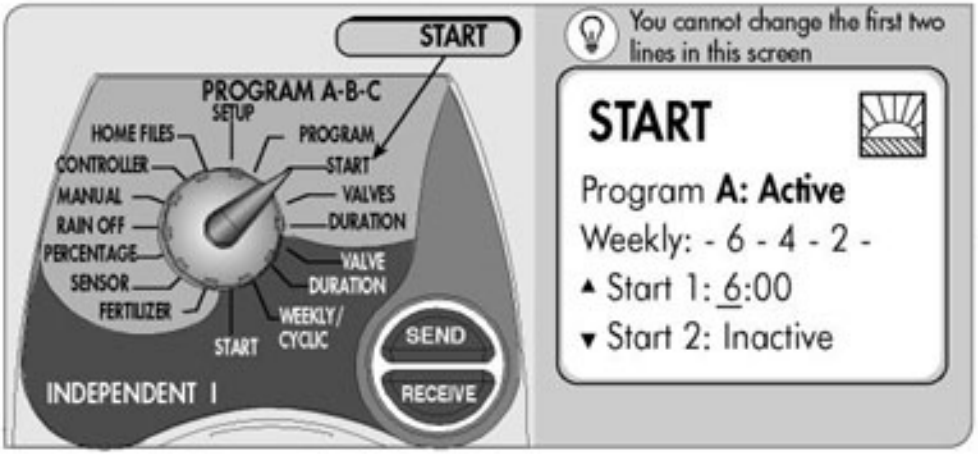
STARTS

Use this screen to set the start time of the selected program. You have two options:
Start times for a weekly program – up to 8 starts.
Start time for a cyclic program – one valve opening.

Turn the selector to STARTS position

Start Time for a Weekly Program

You can set 8 start times for a weekly program. The first valve is operated at the desired time and the other valves open after the first one in a rising order sequence from 1 up to the last valve in the program.



Press on ⓒ. The cursor appears below the word **Inactive** or under the hour digit in the **Start 1** line.

Use the ⊕ or ⊖ pushbutton to set the desired start time.

Press on ⓒ. The cursor appears below the minutes digit. Use the ⊕ or ⊖ pushbutton to set the desired minute.

When you press again on ⓒ the cursor moves down to the hour digit in **Start 2**.

Use the ⊕ or ⊖ pushbutton to set the desired start time.

Press on ⓒ. The cursor appears below the minutes digit. Use the ⊕ or ⊖ pushbutton to set the desired minute.

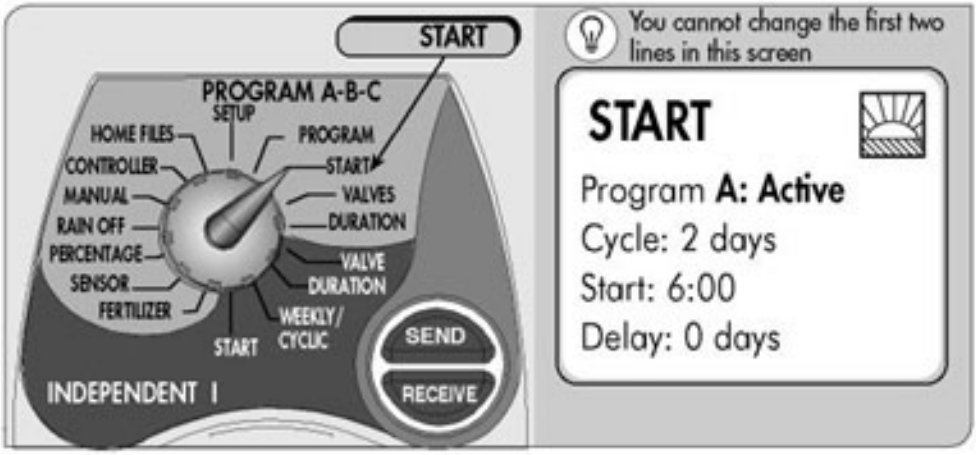
You can set 8 starts for each program in the same way.

To cancel a start: Select the start you wish to cancel, set the cursor on the hour digit and use the ⊕ or ⊖ pushbutton to bring it to the **Inactive** status.

Start Time for a Cyclic Program

If you selected a cyclic program, set the start time and the number of days up to the cycle start of the first valve (a cyclic program has only one start time). All other valves open after the first valve in sequence.

Turn the selector to STARTS position



Press on ⓒ. The cursor appears below the word Inactive or under the hour digit in the **Start** line.

Use the ⊕ or ⊖ pushbutton to set the desired start time.

Press on ⓒ. The cursor appears below the minutes digit.

Use the ⊕ or ⊖ pushbutton to set the desired minute.

Delay - You can start the irrigation cycle after a delay of up to 30 days.

Press on ⓒ the cursor appears under the number of days in the delay line.

Use the ⊕ or ⊖ pushbutton to set the number of days up to the beginning of the first cycle.

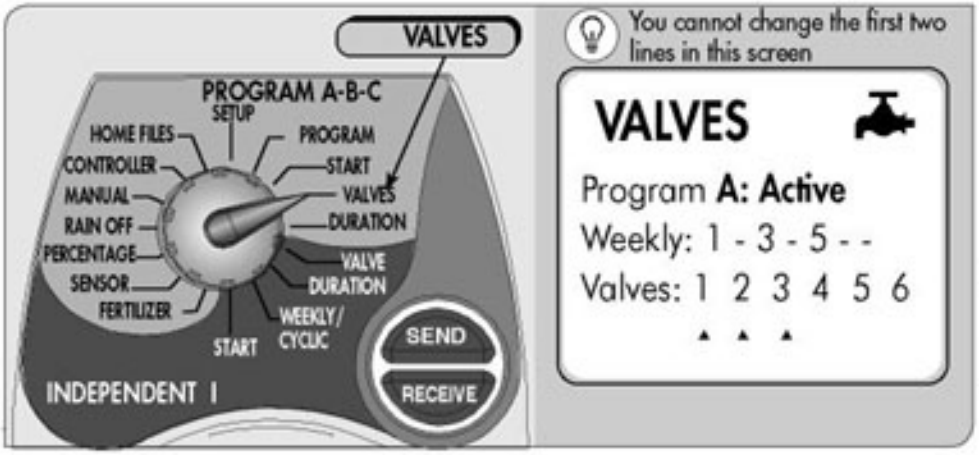
0 - open on the current day; 1 - open in one day's time; 2 - open in 2 days time, and so on, up to 30 days.

You can use the up ⓤ and down ⓓ arrows to move quickly from one line to another. The arrow on the left indicates the line you reached.

Selecting Valves

Use this screen to assign valves to the selected program. You can assign up to 6 valves to each program. You can assign each valve to one program only.

Turn the selector to VALVES position

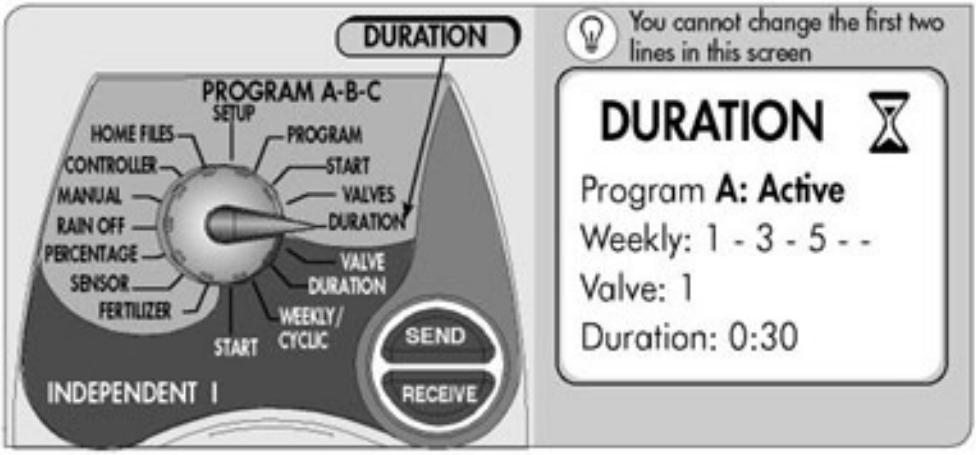


Press on ⓒ. The cursor appears below the first selected valve.
Use the ⊕ to set the valve you wish to assign to the selected program.
A small triangle appears below the valve thereby marking the valve as assigned to the program.
Use ⊖ to remove a valve from the program (the triangle disappears).
In the event that this screen does not display valve numbers, it indicates that these valves were selected for another program.

Irrigation Duration per Valve

Use this screen to set the irrigation duration for valves assigned to the selected program. You can set an irrigation duration from 1 minute and up to 9 hours (8:59) for each valve.

Turn the selector to DURATION position



Press on ⟲. The cursor appears below the number of the first selected valve.
Use the ⊕ or ⊖ pushbutton to select the valve number.
Press on ⟲. The cursor appears below the hour digit.
Use the ⊕ or ⊖ pushbutton to set the desired hours duration.
Press on ⟲. The cursor appears below the minutes digit.
Use the ⊕ or ⊖ pushbutton to set the desired minutes duration.
Move to the next selected valve and set the desired irrigation duration.

You have now completed programming the first program, containing:

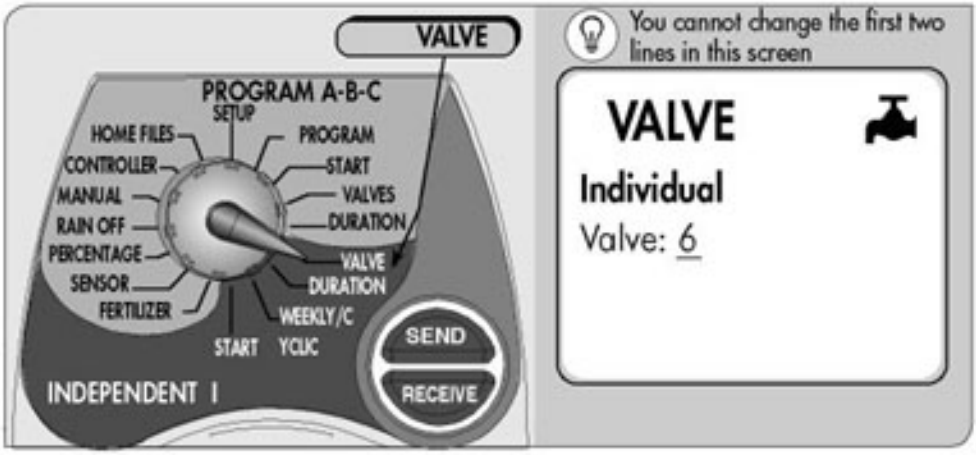
- selecting a program
- starting irrigation (weekly / cyclic)
- selecting valves;
- Irrigation duration per valve.

To proceed to program additional options (fertilizing, probe, Percent %) go to page 25.
To select an additional program repeat the programming steps in pages 13-17.

Irrigation Program for an Individual Valve

First select the desired valve and then program all the programming steps continuously: rrigation Duration, Weekly/ Cyclic, Start Time.

Turn the selector to the Valve position in the INDEPENDENT VALVE section

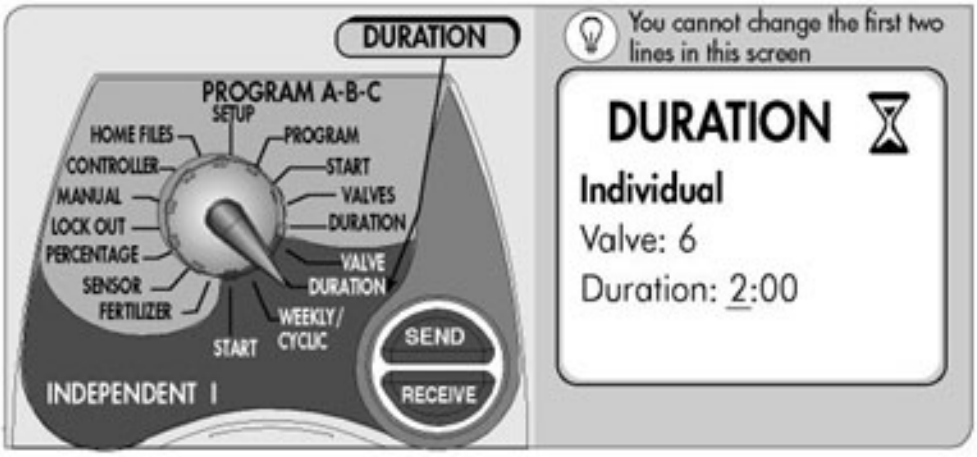


Selecting a Valve

Press on ⟳. The cursor appears below the number of the valve.
Use the ⊕ or ⊖ pushbutton to select the desired valve.
In the event that this screen does not display valve numbers, it indicates that these valves were selected for a previous program.

Irrigation Duration per Valve

Turn the selector to the **DURATION** position

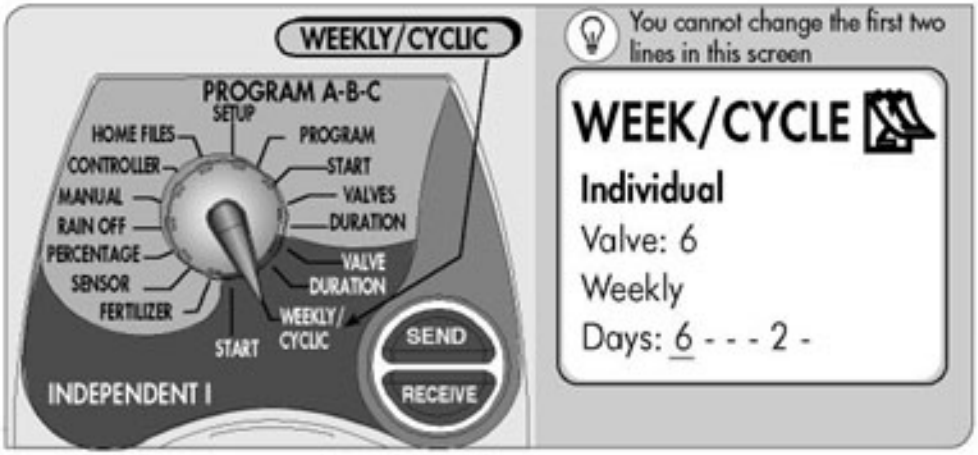


Press on ⓒ. The cursor appears below the hour digit.
Use the ⊕ or ⊖ pushbutton to set the desired number of hours.
Press on ⓒ . The cursor appears below the minutes digit.
Use the ⊕ or ⊖ pushbutton to set the desired number of minutes.

Note! A valve with an irrigation duration of 0:00 never opens up!

Weekly – Cyclic
Selecting Irrigation Days in a Weekly Program

Turn the selector to WEEKLY/ CYCLIC position



Press on ⟲ and use the ⊕ or ⊖ pushbutton to select **weekly**.

Press on ⟲. The cursor appears below the mark on the left. Press ≈ to turn the mark to 1.

Sunday is set as the selected day.

Press on ⟲. The cursor appears below the next day.

Use the ⊕ or ⊖ pushbutton to select additional days.

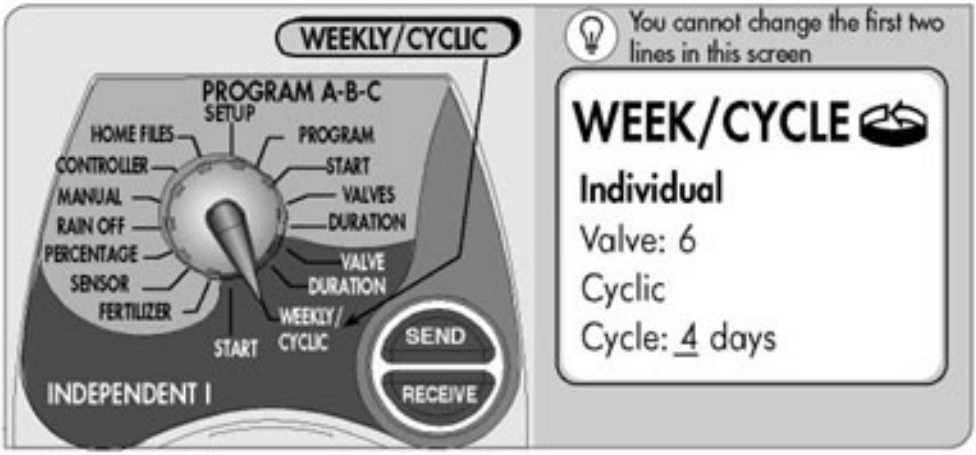
The numbers of the days displayed are the selected days.

To cancel a certain day, press on ⟲ until you reach the desired day.

Use ⊖ to cancel the day: the number disappears from the display - the irrigation day is canceled.

Selecting an Irrigation Cycle

Turn the selector to WEEKLY/ CYCLIC position

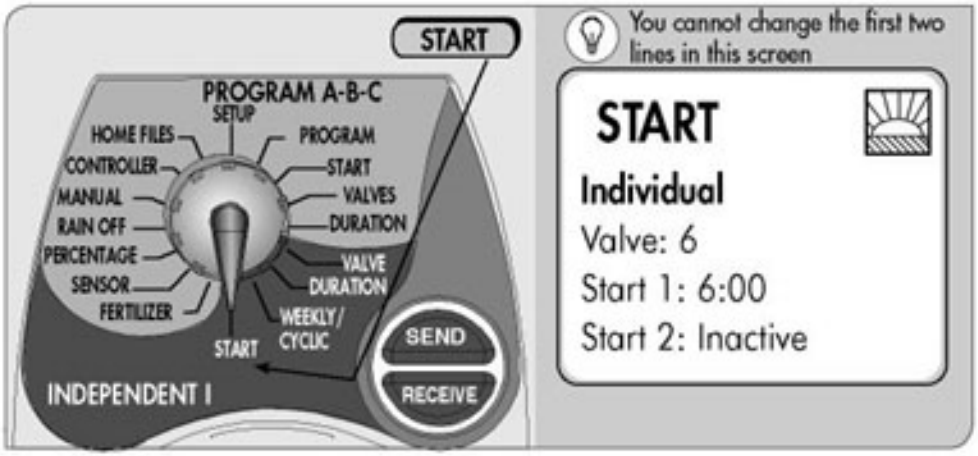


Press on ⟲ and use the ⊕ or ⊖ pushbutton to select **Cyclic**.
Press on ⟲ . The cursor appears below the number of cycle days.
Use the ⊕ or ⊖ pushbutton to select the number of cycle days.
The numbers of the days displayed are the selected days (1 – 30).

Programming a Start Time – Weekly Program

You can program up to 8 different starts per 24 hours.
The selected valve opens up at each of the start times and operates for the set duration.

Turn the selector to STARTS position in the Individual valve section



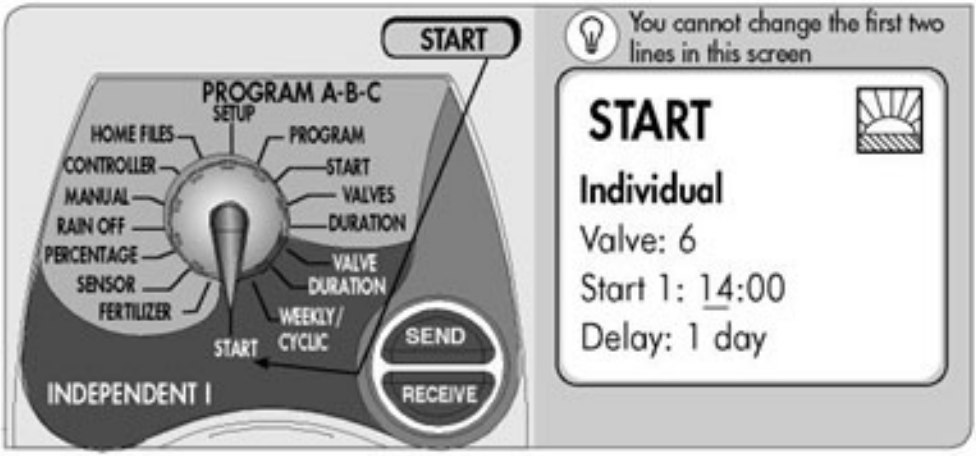
Press on ⊂. The cursor appears below the word **Inactive** or under a certain start time.
Press on ⊕ . The cursor appears below the hour digit in **Start 1** line.
Use the ⊕ or ⊖ pushbutton to set the desired start hour.
Press on ⊂. The cursor appears below the minutes digit.
Use the ⊕ or ⊖ pushbutton to set the desired minute.
When you press again on ⊂ the cursor moves down to **Start 2** and sets the start time for the second opening of the valve.
To set additional start hours, use the down ⇩ arrow.
To cancel a certain start: Select the appropriate line,
set the cursor on the hour digit and use the ⊕ or ⊖ pushbutton to bring it to the Inactive status.

Note! The time 0:00 is midnight.

You can use the up ⇧ and down ⇩ arrows to move quickly from one line to another. The arrow on the left indicates the line you reached.

Programming the start of an irrigation cycle (time and day) for a cyclic program

Turn the selector to STARTS position in the Individual valve section



Press on ⟲. The cursor appears below the word Inactive or under a certain start time.

Press on ⊕ . The cursor appears below the hour digit.

Use the ⊕ or ⊖ pushbutton to set the desired hour digit.

Press on ⟲. The cursor appears below the minutes digit.

Use the ⊕ or ⊖ pushbutton to set the desired minute.

Delay - You can start the irrigation cycle after a delay of up to 30 days.

Press on ⟲ the cursor appears under the number of days.

Use the ⊕ or ⊖ pushbutton to set the number of days up to the beginning of the first cycle.

0 - open on the current day; 1 - open in one day's time; 2 - open in 2 days time, and so on.

You have now completed programming the first individual valve, including:

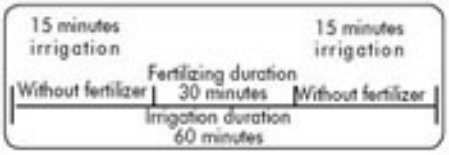
Selecting a valve, irrigation duration, selecting irrigation days in the weekly program or an irrigation cycle in a cyclic program and a start time.

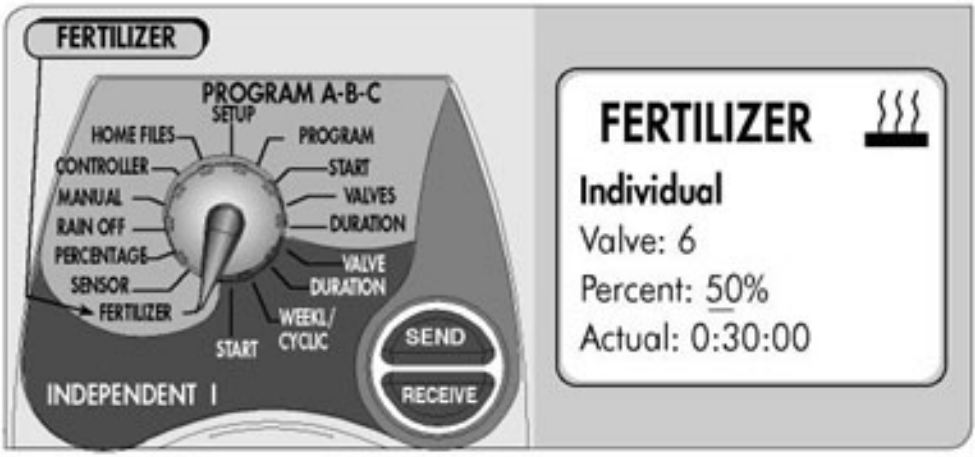
To proceed to programm additional options (fertilizing, probe, Percent %) go to page 25. To program an additional individual valve, repeat the programming steps in pages 19-24.

Fertilizing

In fertilizing mode, set the fertilizing duration for each valve separately.
Define the fertilizing according to a % of the irrigation duration (from 10% up to 90% of the irrigation duration of the valve).
The fertilizer is always discharged in the middle of the irrigation.
Example: A certain valve is programmed to irrigate for 1 hour. The fertilizing time is 50%. In practice, the irrigation is performed as follows: The first 15 minutes, regular irrigation without a fertilizer. Then 30 minutes of irrigation with fertilizer (50% of the time) followed by 15 minutes of regular irrigation without fertilizer

Turn the selector to FERTILIZER position





Press on ⊜. The cursor appears below the number of the valve.

Use the ⊕ or ⊖ pushbutton to set the desired valve number.
You cannot change the second line (irrigation duration for the valve is set at a previous stage).

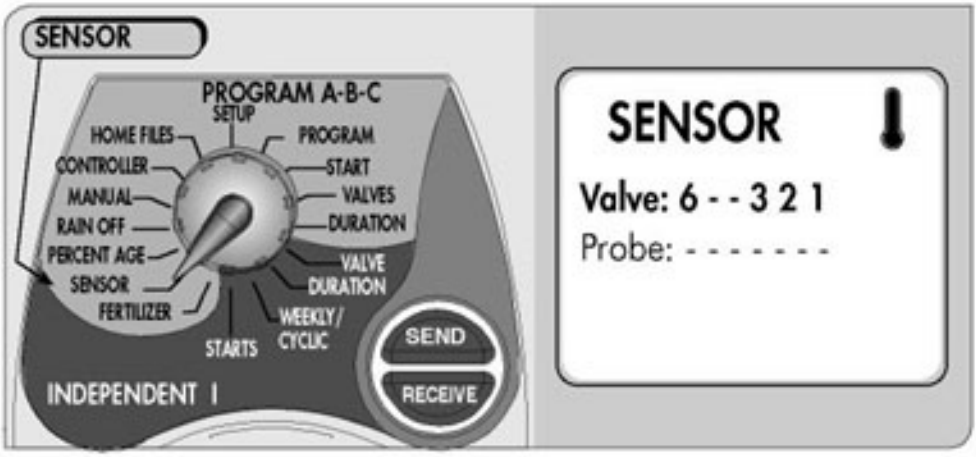
Press on ⊜. The cursor appears below the percent number.

Use the ⊕ or ⊖ pushbutton to set the fertilizing duration in percents, from 10 to 90, in intervals of 10.
The bottom line displays the actual fertilizing time.
You can set fertilizing only for valves with preset irrigation duration programmed at a previous step.

Assigning a Valve to a Probe

The probe operates by shutting the valve to which it is assigned, according to the conditions (rain, humidity, temperature). When the probe is activated, it prevents the valve to which it is assigned from opening. You can assign each valve to the probe according to your requirements.

Turn the selector to SENSOR position



The valve numbers programmed to a certain controller are displayed on the screen.

Press on ⟲. The cursor appears below the first selected valve.

Use the ⊕ to assign the valve to the probe. A triangle is displayed below the valve assigned to the probe.

Repeat the same steps for the other valves.

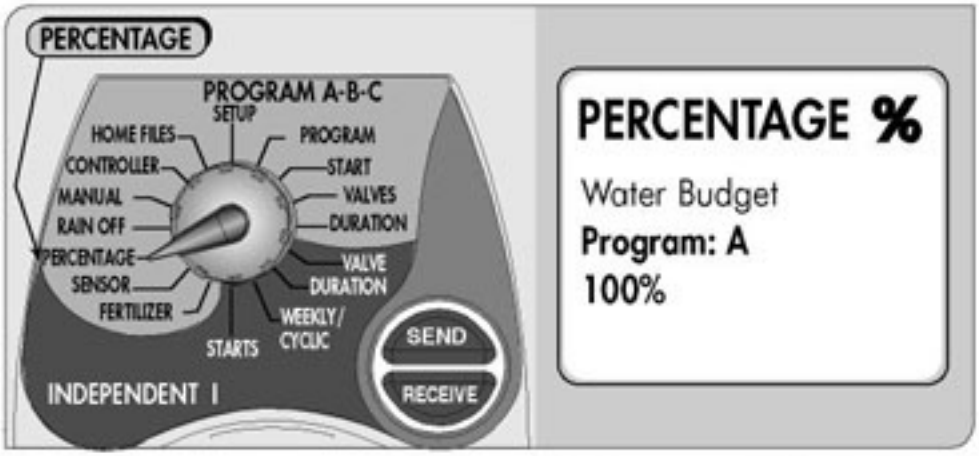
To cancel assignment of the probe to a valve:

Press on ⟲. The cursor appears below the assigned valve.

Press on ⊖ to cancel the assignment of the valve to the probe.

Irrigation % - Increasing and Decreasing the Irrigation Duration in %.
You have an option to increase or decrease the duration of the irrigation in %, in all the valves.
You have 2 options:
1.An identical increase in % for **all** valve groups.
2.A different Percent for each group according to each A, B, C and Individual valve I program.
100% the original irrigation duration.
10% up to 90% - a decrease at the rate of %.
110% up to 190% - an increase at the rate of %.
Note:
When a % change rate was set for one of the programs (A, B, C, I) you cannot access all the groups.
When a % change rate was set for **all** the valves (**all**) you cannot access A, B, C, I.

Turn the selector to PERCENTAGE position

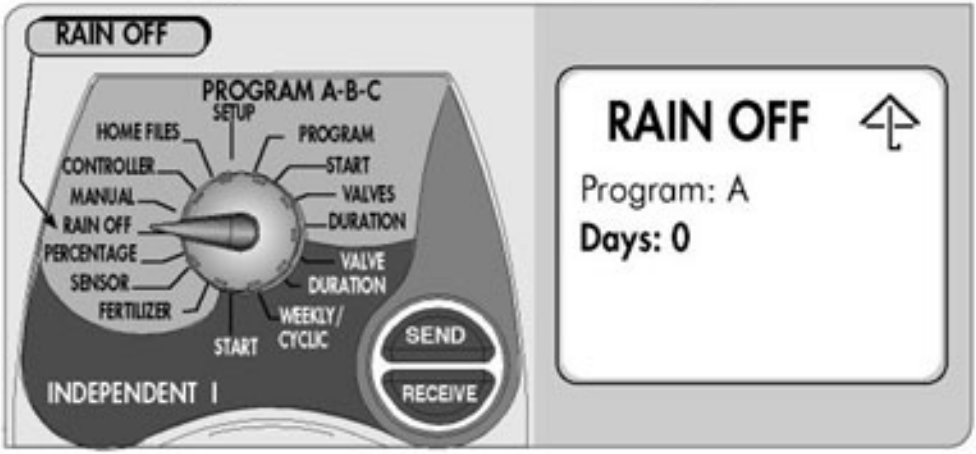


Press on ⟲ until the cursor appears below the desired program, A, B, C, I or All.
Use the ⊕ or ⊖ pushbutton to select the program.
Press on ⟲ until the cursor appears below the desired % digit. Use the ⊕ to set increase %.
Use the ⊖ to set the decrease %.

Lockout

Use this option to cancel the control of the computer over some valves or all the valves, temporarily (e.g., when it rains).
The irrigation program is saved but the irrigation is not performed.
You can lock out all the valves together in All position and also lockout one valve or several valves according to valves assignment to program A, B, C, or I. The lockout is for one day and up to 99 days. When the lockout duration ends, the controller resumes the original program.
Note: If you locked out valves in one of the programs, you cannot lockout all the valves through All.
If all the programs and valves were locked out through All, you cannot lockout single programs.

Turn the selector to RAIN OFF position



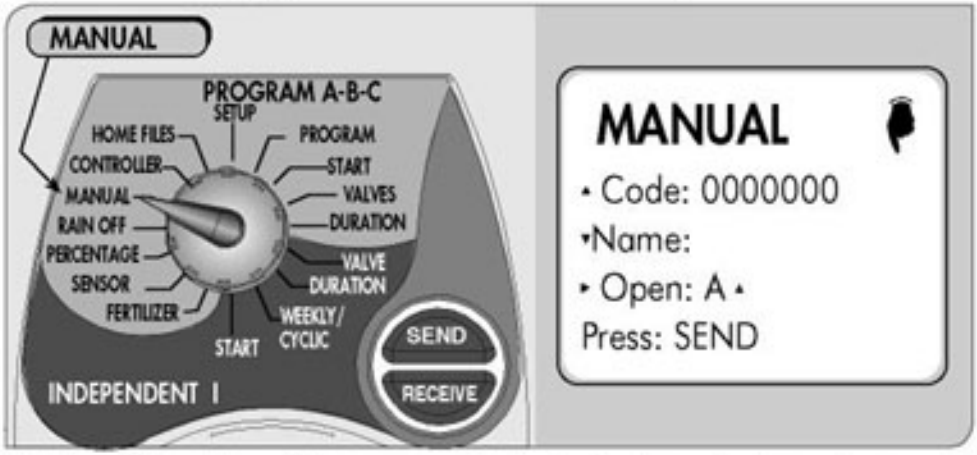
FPress on ⓒ until the cursor appears below the desired program.
Use the ⊕ or ⊖ pushbutton to select the program.
Press on ⓒ until the cursor appears below the days digit. Use the ⊕ or ⊖ pushbutton to set the desired number of lockout days (1-99 days).
Select another program and additional lockout days in the same way.

Manual

This mode enables you to:

- Open a program/ valve manually from the computer.
- Shut a currently open valve.
- Close the program.
- Shut all the currently operational valves/ programs, or those in line to start.
- Send current time, increase % of the irrigation, lockout days, from the programmer to the controller.
- Serial test of all the valves.

Turn the selector to MANUAL position



Use the up ⇧ and down ⇩ arrows to select the desired controller (according to code number).

Use the ⊕ or ⊖ pushbutton to select the desired operation (see all the options in the next page). After you select the option, send the command to the controller – press on SEND, the programmer displays SENDING in the bottom line. If the message is transmitted, **Successfully Sent** is displayed. If the communication fails **Out of Range** is displayed.

- A valve with no defined irrigation duration cannot be opened manually.
- The fertilizing valve opens with the valves to which it is assigned and according to the fertilizing %.
- You may use the ⊕ or ⊖ pushbuttons to move among the programs and the individual valves continuously. You cannot open individually valves which are assigned to a program.
- Manual operation stops the operation of valves which are open at that time.

In a cyclic program, the irrigation starts again.
Sending current time, irrigation %, lockout days does not stop the operation of the valves.

Available Commands in Manual Mode

Open/ Close All	Open/ set in line all the valves/ programs which have continued irrigation.
Open A	Open/ set in line program A (if it includes valves with continued irrigation).
Open B	Open/ set in line program B (if it includes valves with continued irrigation).
Open C	Open/ set in line program C (if it includes valves with continued irrigation).
Open I	Open/ set in line all the individual valves with continued irrigation.
Open 1	Open/ set in line valve No. 1 (if it has continued irrigation).
Open 2	Open/ set in line valve No. 2 (if it has continued irrigation).
Open 3	Open/ set in line valve No. 3 (if it has continued irrigation).
Open 4	Open/ set in line valve No. 4 (if it has continued irrigation).
Open 5	Open/ set in line valve No. 5 (if it has continued irrigation).
Open 6	Open/ set in line valve No. 6 (if it has continued irrigation).
Open All	Shut all the valves and cancel all the valves in line.
Close A	Close program A or remove from the line.
Close B	Close program B or remove from the line.
Close C	Close program C or remove from the line.
Close I	Shut all the individual valves/ cancel valves in line.
Shut irrigating valve	Shut the currently irrigating valve and open the next (if any).
Current time	Send current time to the controller.
Serial test	Close all irrigation activities, perform a serial test – open shut all the valves, one after the other, each for 10 seconds.

The communication line is displayed after pressing <Send> pushbutton.

When communication is successful: Success indicates successful transmission.

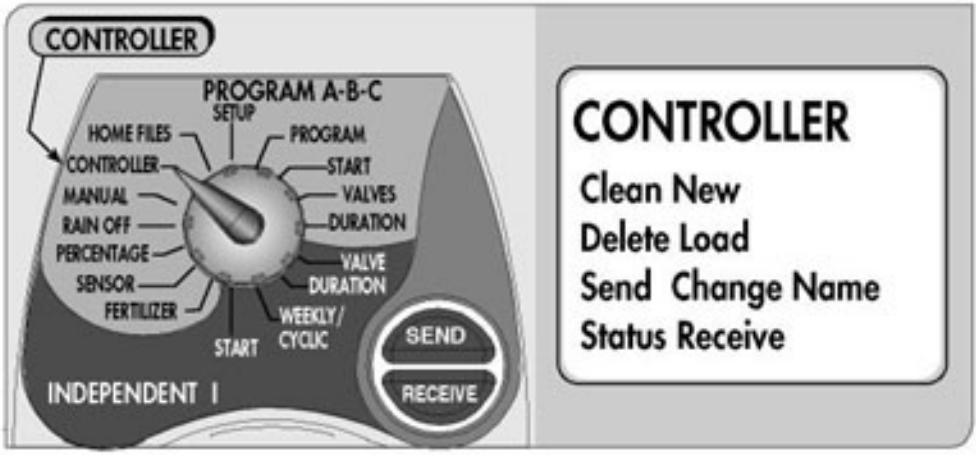
When communication fails: Fail indicated that you are out of range and must go nearer to the controller.

Controllers Operation

Communication between the programmer and the controller is established in this mode.

Turn the selector to CONTROLLER position

The opening screen displays the available options:



New – enter a new controller into the system, set an ID No. and a name.

Clean – Delete the program you are editing.

Load – Load a program from the memory.

Change Name – Change the name of the controller.

Delete – delete the controller from the system.

Receive – Read a program from a certain controller.

Send – Send a program to a certain controller.

Status – Read the status of a certain controller.

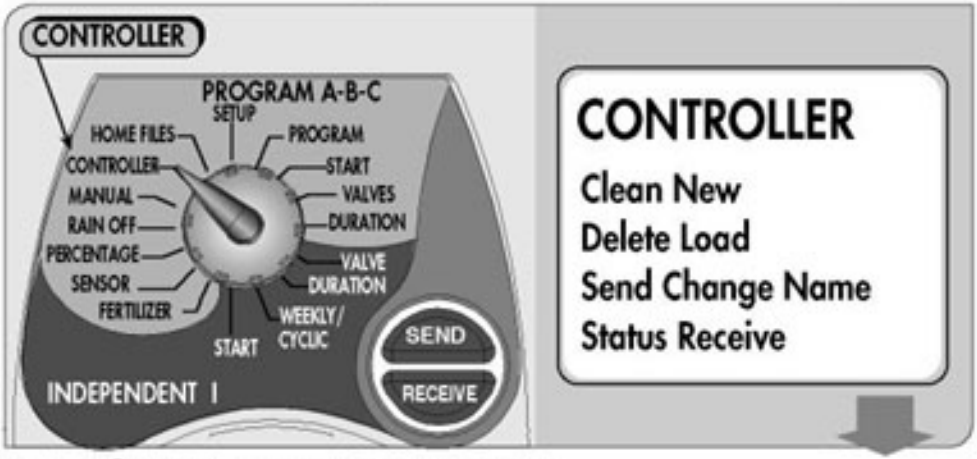
Press on ⟲ to bring the cursor to the desired operation.

Use the ⊕ to select the operation. The screen changes accordingly.

New

When you add a new controller to the system or during the initial stage, when the system is still empty, give names to the different controllers, according to the ID numbers of the controllers.

Turn the selector to CONTROLLER position



Press on ⟲ until the cursor appears below the word **New**.

Press on ⊕ , the screen changes.

Press on ⟲ . The cursor appears below the left digit of the Code line.

Use ⊕ ⊖ and ⟲ to copy the ID No. displayed on the body of the controller.
This number is set in the production process, imprinted on the controller and cannot be changed.

Press on ⟲. The cursor appears to the left of **Name**.

Use ⊕ ⊖ and ⟲ to give a name to the controller, for your convenience.

Press on ⟲ until the cursor is below the required mode,**Save Cancel** or **Clean**.

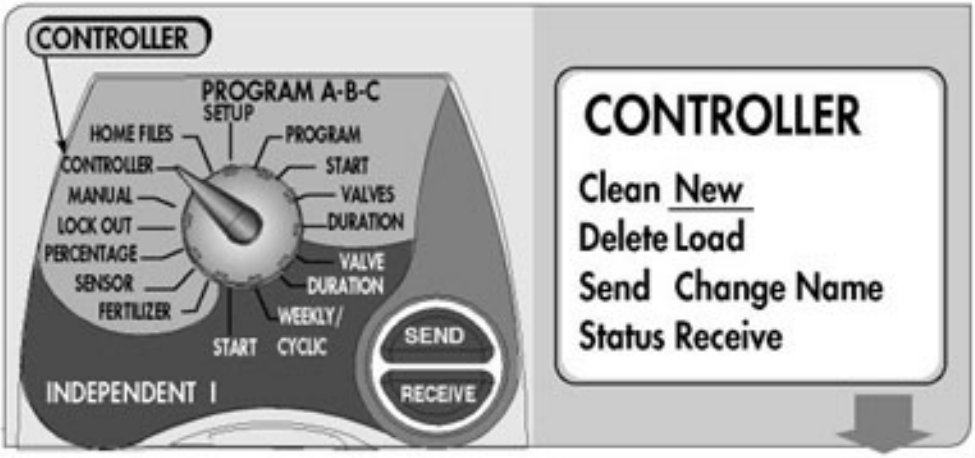
Press on ⊕ to select the required mode and wait for confirmation:

Save – Saves the name.
Cancel – does not save.
Clean – deletes the current name.

At this stage, you can send a program to the controller, if the programmer contains a program.

Clean
Used to delete the program you are editing.

Turn the selector to Clock CONTROLLER position



Press on ⟲ until the cursor appears below the word **Clean**.

Press on ⊕ , the screen changes.

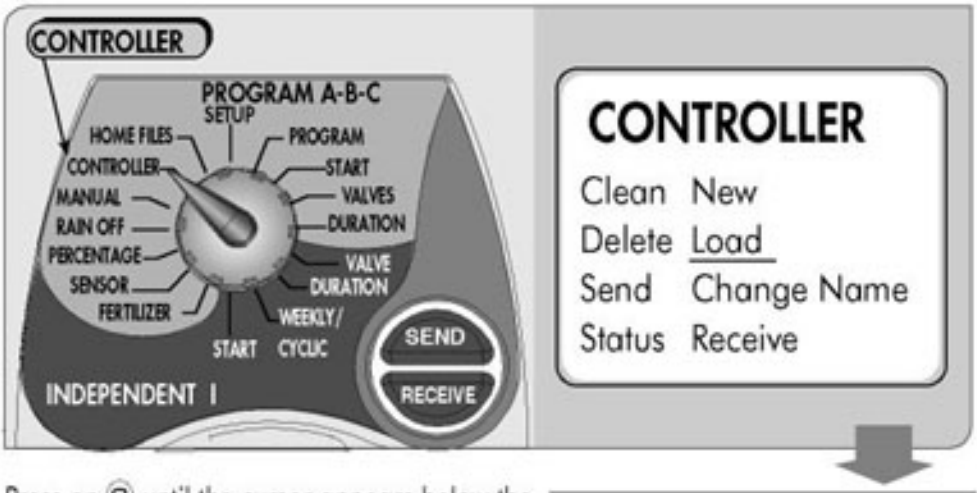
Use ⟲ to indicate if you wish to delete or not.

Press on ⊕ to receive confirmation of the delete. Controller

Load

Used to read or review a program of a certain controller, when you are not at the field. You can read the program out of the memory of the programmer.

Turn the selector to CONTROLLER position



Press on ⓒ until the cursor appears below the word **Load**.

Press on ⊕ , the screen changes.

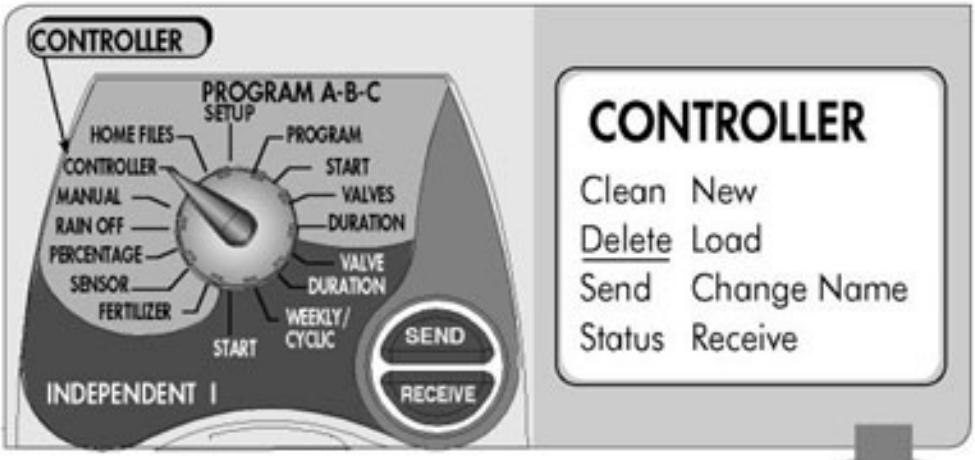
Use the up ⓤ and down ⓓ arrows to select the code and name of the controller you wish to read.

Press on ⊕. Upon receiving confirmation:

The program was transferred to the editor and you can review and read it.

Delete
Used to delete a certain controller from the system.

Turn the selector to CONTROLLER position



Press on ⇆ until the cursor appears below the word **Delete**.

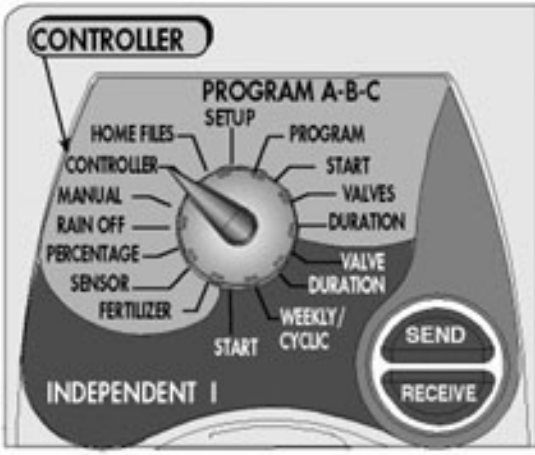
Press on ⊕ , the screen changes.

Use the up ⇧ and down ⇩ arrows to select the code and name of the controller you wish to delete.

Press on ⊕. Upon receiving confirmation, the controller is deleted. ***The controller does not exist in the system nor the memory of the programmer.***

Change Name
Used to change the name of a controller.

Turn the selector to CONTROLLER position



Press on ⟲ until the cursor appears below the word **Change Name**.

Press on ⊕, the screen changes.

The command: **Change Name**

Use the up ⇧ and down ⇩ arrows to select the code and name of the controller you wish to change.

Press on ⊕, the screen changes.

Select a controller

Press on ⟲. The cursor appears below the first letter of the controller's name.

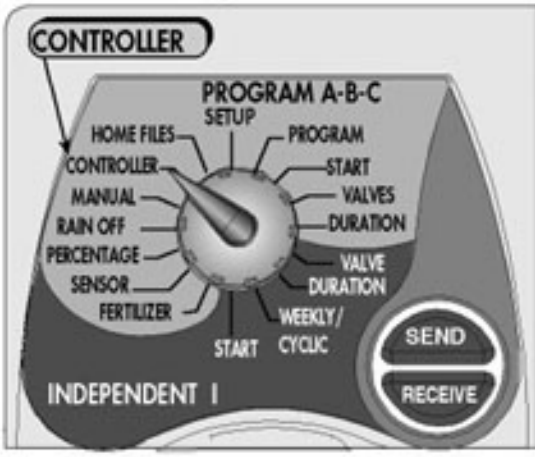
Use ⊕ ⊖ and ⟲ to give a new name to the controller. Once you enter the new name, move the cursor below **Save** and press on ⊕.

The name change was performed.

Send

Used to send the program from the programmer to the controller.

Turn the selector to CONTROLLER position



Press on ⟲ until the cursor appears below the word **Send**.

Press on ⊕, the screen changes.

Use the up ⇧ and down ⇩ arrows to select the controller to which you wish to send the program (code and name).

Press on ⊕ , the screen changes. The controller's code and name are displayed. Press on **SEND** and wait for the confirmation that the loading succeeded.

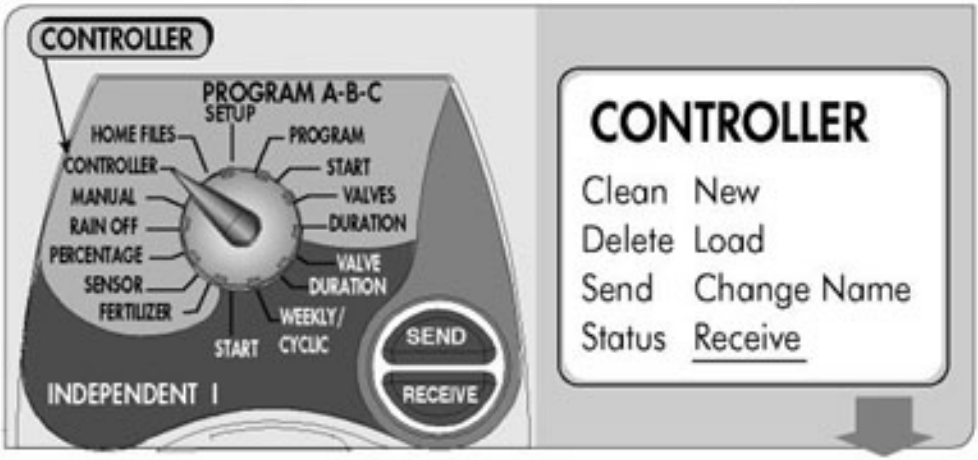
Note the progress of the command input by the progress of the transmission line at the bottom of the screen. If the communication fails, improve your position in relation to the controller and repeat the command.

The program received by the controller is also saved in the programmer's memory (up to 50 controllers).

Receive

Used read the existing program from the controller in the field, for review or changes purposes.

Turn the selector to CONTROLLER position



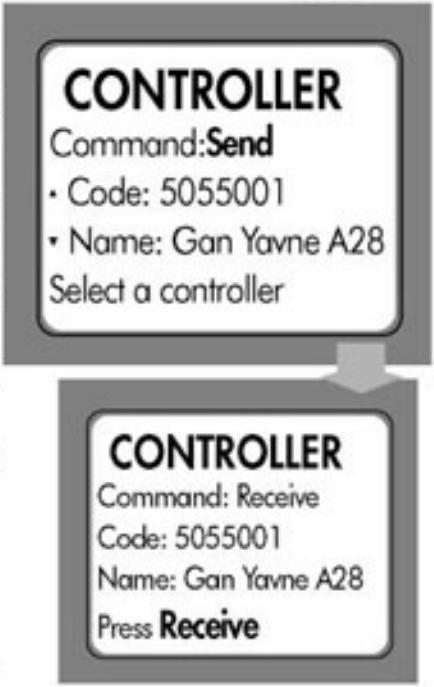
Press on ⟳ until the cursor appears below the word **Receive**.

Press on ⊕ , the screen changes. The command is Receive.

Use the up ⇧ and down ⇩ arrows to select the controller's code and name. Press on ⊕ , the screen changes. Press on RECEIVE and wait for the confirmation that the reading succeeded.

Note the progress of the command input by the progress of the transmission line at the bottom of the screen. If the communication fails, improve your position in relation to the controller and repeat the command. Maintain the correct distance from the controller.

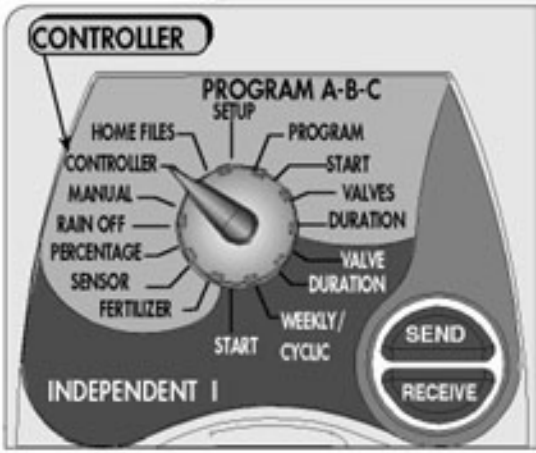
You can now read the program that resides in the controller on the screen of the programmer.



Status

Used to check the status of the controller in the field from the programmer. You can receive data of: Number of valves in the programmer; current day and time; battery condition; open valve; lockout activated; probe status.

Turn the selector to CONTROLLER position



Press on ⓒ until the cursor appears below the word **Status**.
Press on ⊕, the screen changes.
Use the up ⇧ and down ⇩ arrows to select the desired controller. Press on ⊕ , the screen changes.
Verify that this is the controller you wish to check.
Press on **RECEIVE** and wait until you receive data from the controller.

The First Screen displays:
a. Controller type (No. of valves).
b. Updated time and day.
c. Condition of the battery.
Use the up ⇧ and down ⇩ arrows to move to another screen.

The Second Screen displays:
a. Open program or valve
b. remaining time for valves.
Use the up ⇧ and down ⇩ arrows to move to another screen.

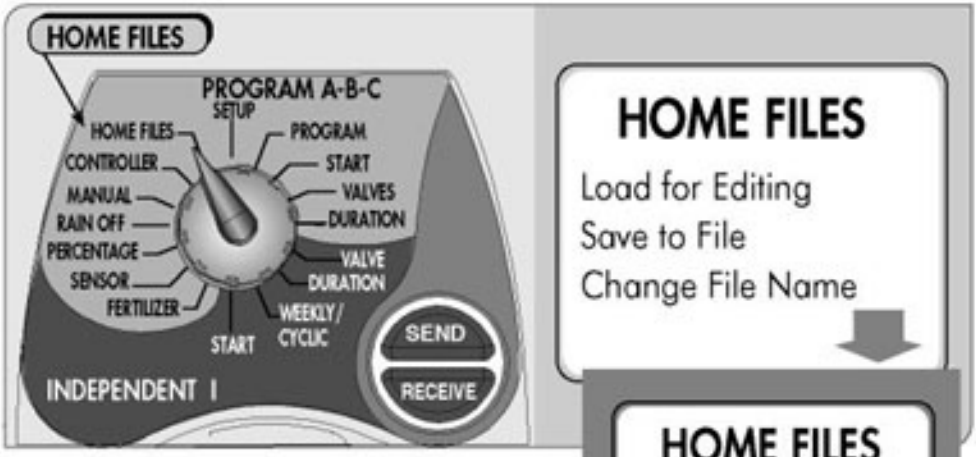
The Third Screen displays:
a. Is the probe connected.
b. Is there any lockout.
Press on ⓒ to return to the previous screen up to the main screen.

Use the up ⇧ and down ⇩ arrows to move among screens

Home Files
In this mode you can save up to 4 files (programs) in the memory of the programmer. You can retrieve these files (Home Files) from the memory and send them to the controllers at any time you wish.
Save to File – Transfers a file from the editor to Home Files.
Load to Edit – Transfers one of the Home Files to the editor.
Change File Name – Changes the name of a file, for your convenience.

Turn the selector to HOME FILES position

Change File Name – Sets and changes the name of a certain file of the Home Files.

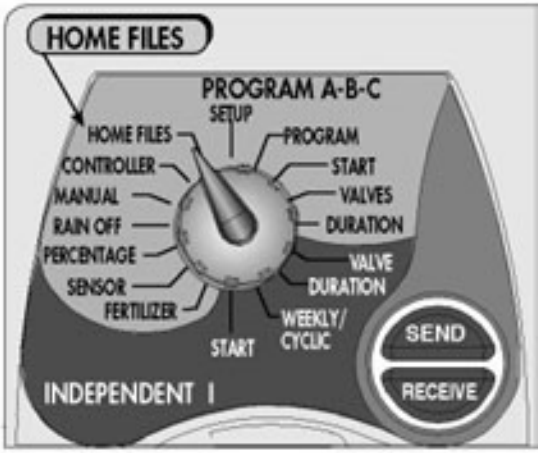


Press on ⊙ to select a file. Use ⊖ ⊕ and ⊙ to enter a name for the file, for your convenience.
Use the down ⑦ arrows to move to **Save**.
Press on ⊕ and wait for: **Successful**.
The name was set.

You can change the name of the file at your convenience by following the prompts in this page.

Save to File

Turn the selector to HOME FILES position



Use this mode to save a certain file, residing in the editor, in one of the Home Files, under a certain Name.

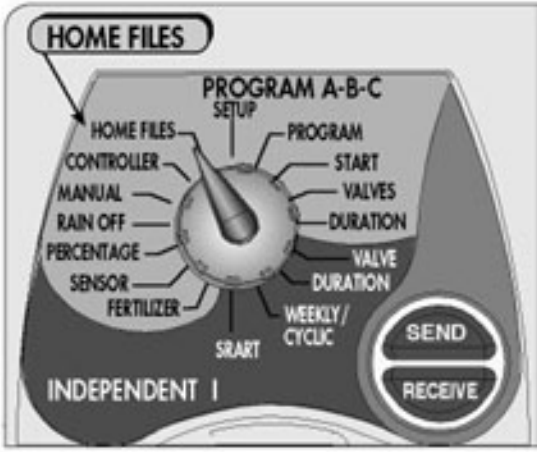
Press on ⟲ until the cursor appears under the words **Save to File**.

Press on ⟲ until you reach the place where you wish to save the file.

Press on ⊕ and wait for: **Saving Successful**.
The file is saved.
The screen returns to the main menu.

Load to Edit

Turn the selector to HOME FILES position



Load to Edit Retrieves a program out of a home file to the programmer for entering changes or review. A program saved in a home file is a program you programmed in advance for a certain use, which does not reside in any of the controllers or the memory.

Press on ⟲ until the cursor appears under the words **Load to Edit**.
changes. 4 file names are displayed.
Press on ⟲ to select the desired file.
Press on ⊕. Approval of successful loading is displayed in the bottom line.
The screen returns to the main menu. The program is residing in the editor for review/ change or for sending to a certain controller.

Summary of Operations
1. Initial programming and sending a program to the controller in the field.
2. Read a program from the controller in the field for testing and changes.
3. Read a program from memory for testing.
4. Read controller status in the field.
5. Manual Operation.
6. Program at home or the office for a certain need and save in Home File.
7. Read a program from Home File and send to a certain controller.

1. Initial programming and send program to a controller in the field
a. Program the controller in the Programmer (editor).
b. Access **controller** mode using the selector.
c. Select **Send** mode.
d. Execute **Send** command to a certain controller
e. Receive confirmation. Program sent to the controller and saved in the memory of the Programmer.

2. Read a program from the controller in the field for test and change.
a. Access **Controller** mode using the selector.
b. Select **Receive** mode.
c. Execute **Receive** command.
d. Receive confirmation. Program transferred from the controller to the programmer for test or change.

3. Read program from memory for testing
a. Access **Controller** mode using the selector.
b. Access **Load** mode.
c. Execute **Load** command. The program resides in the Editor.

4. Reading the Controller Status
a. Use the selector to access **Controller** mode.
b. Access **Status**.
c. Reach status command
d. Receive confirmation. If the request fails, repeat the request.
e. Read status.

5. Manual Operation
a. Access **Manual** mode using the selector.
b. Select controller, name and code.
c. Select desired type of operation.
d. Press SEND to implement the command and receive confirmation.

6. Save in Home File
a. Full programming of a controller according to a defined program.
b. Access **Home File** mode using the selector.
c. Access **Save to File** mode.
d. Access files table and select a file.
e. Save the program in the file.

7. Load a program from Home File to the Editor
a. Access **Home Files** using the selector.
b. Access **Load to Edit**.
c. Access files table and select a file.
d. Receive confirmation. The program resides in the Editor.

The Fcc Wants You to Knows

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

a. Reorient or relocate the receiving antenna.

b. Increase the separation between the equipment and receiver.

c. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

d. Consult the dealer or an experienced radio/TV technician.

This device complies with part 15 of the fcc rules. OPeration is subject to the following two conditions: (1) this device may Not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

FCC WARNING

Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.