# TBOS-II™ FIELD TRANSMITTER

**Field transmitter (Radio/IR compatible)**

***868 (EU, South Africa)***
***915 (US, Canada, Mexico, Australia)***



## STATEMENT

### RF EXPOSURE

This device complies with FCC RF and Industry Canada radiation exposure limits set forth for general population.
This device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

### FCC STATEMENT

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

*NOTE: 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 instruction, 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 interference by one or more of the following measures:*
*- Reorient or relocate the receiving antenna.*
*- Increase the separation between the equipment and receiver.*
*- Connect the equipment into an outlet on circuit different from that to which the receiver is connected.*
*- Consult the dealer or an experienced radio/TV technician for help.*

### IC STATEMENT

**RSS Gen / Transmitter Antenna.**

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.
To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

***Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut*** *fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada.*
*Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*

**RSS Gen / User Manual Notice for Licence-Exempt Radio Apparatus.**

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

*Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :*
*(1) l'appareil ne doit pas produire de brouillage, et*
*(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

### Normes CEM (radio)

**CANADA**
- RSS-210 Issue 7- Jun 2007
- RSS-Gen Issue 2- Jun 2007

**FCC**
- FCC Part 15, Subpart C 15.247
- ANSI C63.4 (2009)"

## Table of Contents

## INTRODUCTION

RAIN BIRD thanks you for having purchased a **TBOS-II™** series field transmitter.

This new transmitter is universal and is compatible with the entire TBOS™ range (old and new generation).

Adding a radio interface unit enhances the programming of the old generation TBOS™ modules.
Once the program data has been entered into the field transmitter, it could be sent in one of two ways:

- **Via an infrared connection**, using the cord supplied with the transmitter.

- **Via a radio connection**, using the TBOS-II™ radio adaptor that attaches to the control module.

This dual radio/Infrared communication option allows continued transmission in the event of disruption to the radio system (bad weather, low batteries in the radio module, etc...)

The new programming module also includes new features that will provide additional benefits for the management of your TBOS™ and/or TBOS-II™ modules.

** except VRM1 and FS1*
*The information contained in this document is purely indicative. It may be changed without notice and does not represent a commitment on the part of RAIN BIRD.*

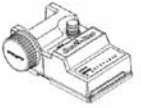
## A – PRESENTATION OF THE TBOS-II™ RADIO SYSTEM

### 1. The TBOS-II™ system

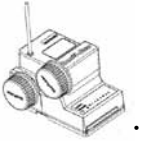
The new generation system works with products using the 868MHz (EU, South Africa) or 915 MHz (US, Canada, Mexico, Australia) frequency band.

System composition:

• A universal FIELD TRANSMITTER (FT) that serves to configure your irrigation programs and transfer them via infrared or radio connection to the TBOS™ and/or TBOS-II™ control modules.



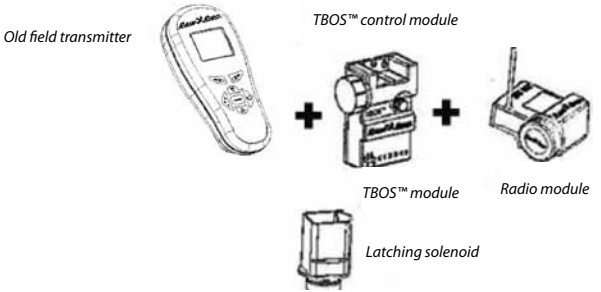
• One (or more) TBOS™/ TBOS-II™ CONTROL MODULE(S) installed underground, in valve box.



• a TBOS-II™ RADIO INTERFACE UNIT for radio reception of data, installed underground, in valve box.

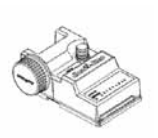
## 2. Description of the system

### Old TBOS system




### New TBOS-II system

*New field transmitter*
***TBOS-II™ (FT)***



***TBOS™ / TBOS-II™ Control Module***
*1 to 6 stations*

***Radio Adaptor TBOS-II™***

*When fitted with a TBOS-II™ radio adaptor, an old TBOS™ module will have additional functions.*

## 3. New features of the TBOS-II™ system

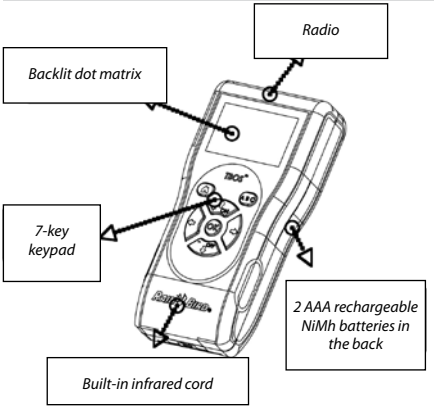
### The TBOS-II™ field transmitter (FT)

- Powered by rechargeable NiMH batteries (charger provided)
- Back-lit dot-matrix display
- Scrolling menus with reverse video
- Transmitter name customisation
- Language selection
- Miscellaneous display settings
- Storage of 3 saved programs in the in the field transmitter once connected to the TBOS™ controller

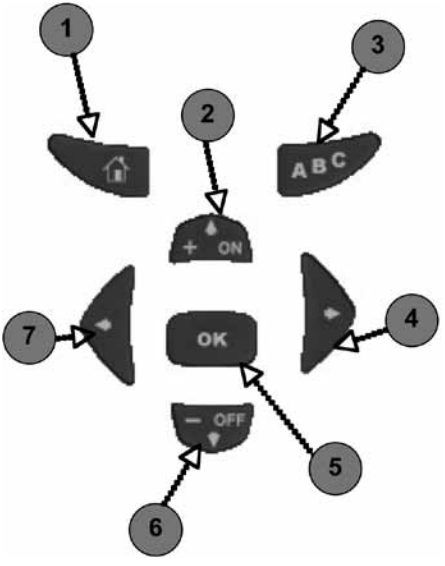
### Field transmitter (FT) <- > TBOS™/TBOS-II™ interactions

- Rain Delay (**1 to 31** for TBOS-II™ model and **1 to 6** for model TBOS™)
- Check program
- Day setting OFF
- Water budget (per program A/B/C or per month)
- 3 saved programs
- Reading of irrigation program
- Consultation and modification of the following parameters:
  - TBOS™ module name
  - Station names
  - Manual actions
  - Programming cycle
  - Start Times
  - Station run times
  - Assignment of a station to one or more programs
  - Water budget by program

## 4. Presentation of the TBOS-II™ field transmitter




- Size 160*70
- Thickness 30 mm
- Dark grey ABS housing (P430)
- Waterproof 7-key keypad
- UV-resistant plastic
- Operating temperature: between -10° and +65° C
- Allowable air humidity: 95% max (de 4°C to 49°C)
- Storage temperature: - 40°C to + 66°C
- Portable infrared cord
- Backlit monochrome LCD display (128 x 64 pixel)
- Rechargeable (NiMh 750mAh 2.2V). Battery pack + charger
- Internal radio antenna
- Sealed (Class IP44)




❶ Main menu

❷ **+/ON/↑**

Scroll upwards through the menus

Increase the numerical value (or higher value) in data input mode

Confirm watering day ON or station ON

❸ **ABC**

Navigation between programs A/B and C

Key enabled whenever ABC are flashing in reverse video

❹ →

Scroll to the right through the menus

Confirm input

❺ **OK**

Confirm input

Enables/disables input on certain screens

❻ **-/OFF/↓**

Scroll downward through menus

Confirm "OFF"

Decrease the numerical value

❼ ←

Scroll to the right through the menus

## B – FIELD TRANSMITTER START-UP / CONFIGURATION

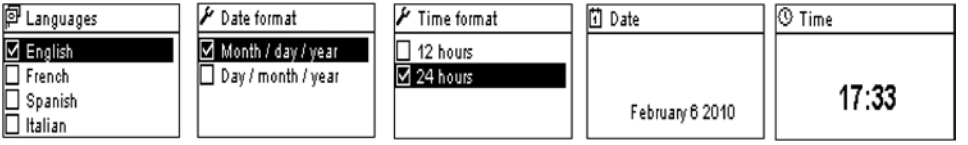
### 1. Charging the battery

**When using the field transmitter for the 1st time, or when changing the batteries, it will be necessary to set the time and the date of the transmitter** ***(see next paragraph "2/ Field transmitter configuration – Date and time settings")***

The field transmitter must be charged for at least 10 hours before it is first used.
When connected to the charger, the screen will light and display the default time of «00 : 00».
The batteries will begin charging. The battery charge symbol will appear on the screen.

The battery life depends on the daily use made of the field transmitter and the backlight on time setting.

When connecting for the first time, please set the following:




### 2. Field transmitter configuration

Once the field transmitter is charged, you can make initial setting adjustments, namely:

- Date and time settings,
- Contrast adjustment,
- Setting the name of the field transmitter,
- Language selection,
- Screen lighting time adjustment,
- Field transmitter information display.

All of these settings are made via the **"Parameters"**, menu that can be accessed from the field terminal's welcome screen, by performing the following steps:

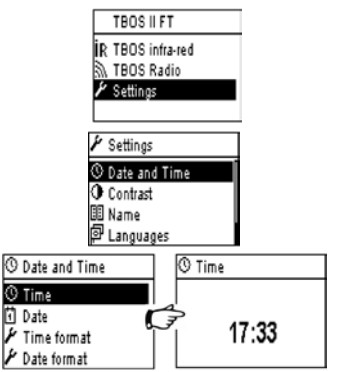
❶ Press any key to turn on the field transmitter and display the welcome menu.
❷ Press OK, or, select **"Parameters"** with the OFF key and confirm by pressing OK.
❸ The different parameters will then be displayed on the screen. Simply select the parameter your choice.

**Setting Time/Date**

❶ Select **"Date and Time"** from the **"Parameters"** menu and confirm by pressing OK.

**Changing the time:**

- Select **"Time"** + press OK.
- Move from hours to minutes by pressing.



- Increase or decrease the hours or minutes using the ON & OFF keys and confirm by pressing OK.

**Changing Time Format:**

- Select **"Time Format"** + press OK.
- Select 12 or 24 hours.

**Changing the date:**

- Select **"Date"** + press OK.
- Move from Day to Month to Year by pressing arrows.
- Increase or decrease each value using the ON OFF. keys and confirm by pressing OK.

**Changing date format:**

- Select **"Date Format"** + press OK.
- Select Mont/Day/year or Day/month/year.

## Adjusting the contrast

❶ Select **"Contrast"**, from the **"Parameters"** menu and confirm by pressing OK.

❷ Set the contrast level using the ON OFF keys and confirm by pressing OK.

## Setting the console name (16 letters and numbers)

❶ Select **"Name"** from the **"Parameters"** screen and confirm by pressing OK.

- Move between the left-hand and right-hand letters using arrows.
- Scroll through the characters using the ON & OFF keys, and confirm by pressing OK.

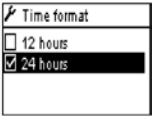
**→ The "Space" character is situated after the letter "Z".**

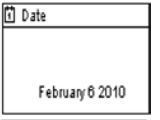
## Field transmitter language selection

❶ Select **"Languages"** in the **"Parameters"** screen and confirm by pressing OK.

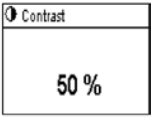
❷ Then chose the desired language using the ON & OFF keys, and confirm by pressing OK.

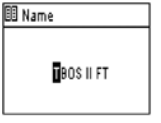
**→ Proposed languages: French, English, Spanish, Italian, Germany, Portuguese, Greek and Turkish.**





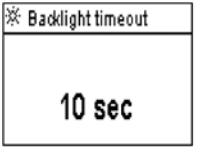



### Setting the screen lighting time

❶ Select **"Lighting time-out"** from the **"Parameters"** screen and confirm by pressing OK.

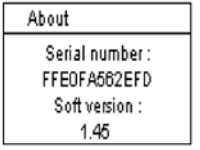
❷ Set the length of time using the ON OFF keys and confirm by pressing OK.




### Displaying field transmitter data

❶ Select **"About"** from the **"Parameters"** screen and confirm by pressing OK.

❷ The following information will then appear on the screen:
- Field transmitter ID.
- The embedded software version.




## C – USING THE FIELD TRANSMITTER via INFRARED (I.R.) CONNECTION

The field transmitter is able to communicate via infrared with all types of old or new generation TBOS™ control modules. Certain exclusive functions are only accessible when the field transmitter is connected to a TBOS-II™ IR control module, i.e.:
- Water budget,
- Assignment of a station to several programs, each with a different time,
- Station test,
- 1 to 31 day cyclical irrigation schedules (1 to 6 days for the TBOS™ model),
- Customisation of TBOS-II™ module and its stations,
- Saving of program in the control module,

The field transmitter can also add the **"Rain Delay"** function to all TBOS™ control modules.
It has 6 memory storage areas that can store 6 different programs: 3 are dedicated to old model TBOS™ modules and the 3 others to the TBOS-II™ modules. It also allows the deletion of the programs contained in any TBOS™ module (deletion of one or all programs, TBOS™ module reset).

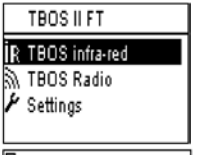
### 1. Programming the TBOS-II™ field transmitter

**Before configuring the functions, connect the infrared cord supplied with your product.**

❶ Press any key to turn on the field transmitter and display the welcome menu.

❷ Press the OK key, select **"TBOS IR infrared"** by means of the key and confirm by pressing OK in order to read the program data contained in your TBOS™ field transmitter. *The reading of program data can take between 2 and 12 seconds according to the TBOS™ module version (old or new).*

The first infrared welcome screen indicates the status of the various external items (TBOS™ module sensor or battery), ON/OFF state, of the Water budget or the watering operation in progress (TBOS-II™ only).

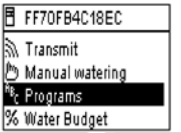



**The time displayed on this screen is that of the field transmitter an not that of the TBOS™ controller. It is therefore necessary to synchronise the 2 devices *(see "Transmitting program date and time").***

## Creating Irrigation Schedules

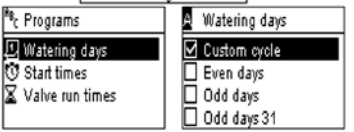
The field transmitter contains 3 independent programs (A/B and C). Separate watering days, start times and watering run times can be set for each program. Note: a station can be **assigned to only one program, either A, B or C** in the case of an old generation TBOS™ field transmitter, **but to one or more programs** in the case of the TBOS-II™ field transmitter.

Then, select **"Programs"** in the Infraredwelcome screen, and confirm by pressing OK.




• **Watering days**

❶ Select **"Watering days"** and confirm by pressing OK.



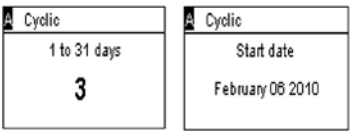

You can then choose a specific watering cycle:
- **Week** *(custom cycle)*
- **Even-numbered days**
- **Odd-numbered days**
  *(if the last day of the month is an odd-numbered day, watering will not be performed)*
- **Odd numbered days 31** *(watering performed on last day of the month, i.e. over 2 consecutive days with the 1st day of the following month)*
- **Cyclical *(every "X" days)***

❷ If you select **"Custom cycle"** (all days set to ON by default).


Select the desired program **A, B or C** in the flashing box in the top left-hand corner of the screen using the ABC key.

Using the ON & OFF keys, select the watering days in the calendar per program and confirm by pressing OK.

❸ If you choose **"Cyclical".**




Select the watering cycle *(1 to 6 days for the TBOS™ / 1 to 31 days for the TBOS-II™ controller only)* using the ON OFF keys, and confirm by pressing OK.

Then, enter your watering cycle start date "dd/m/year" using the ON OFF keys.

• **Start times**

❶ Select **"Start times"** and confirm by pressing OK.

❷ Select your program **A, B or C** in The box in the top left-hand corner of the screen using the ABC key.

❸ Set the hours and minutes for each start time (up to 8 start times per program) using the ON OFF keys, and confirm by pressing OK.

When you exit this screen, the watering starts will automatically be sorted in chronological order.

• **Watering run time**

Each station can be assigned to the 3 programs A, B and C, with different times for each program (TBOS-II™ controllers only).
Then select **"Programs"** from the Infrared welcome menu and confirm by pressing OK.

❶ Select **"Valve run time"** and confirm by pressing OK.

❷ Select the program A/B or C to be assigned to each valve (1 to 6) using the ON OFF keys, then go to hours and minutes by pressing arrows. Enable the input with OK. Confirm by pressing OK.

## Transmitting the time, date and program.

Press the centre key of the field transmitter to return to the Infrared welcome screen.

❶ Select **"Transmit"** and confirm by pressing.

**If you wish to synchronise the time and the date of the TBOS controller with that of the field transmitter, simply read the contents of the TBOS module and make a transmission without altering the program.**

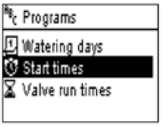
## Water budget programming

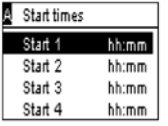
You have the option of changing the watering time for each one of the 3 programs A, B and C and for each station.

• **Seasonal adjustment per program**

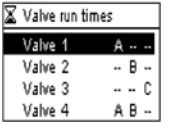
❶ Press the centre key of the field transmitter to return to the Infrared welcome screen.

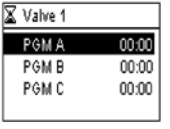
❷ Select **"Water budget"** and confirm by pressing OK.

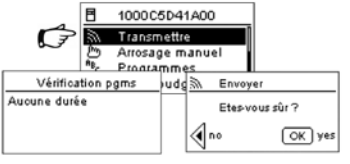


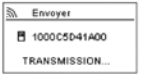



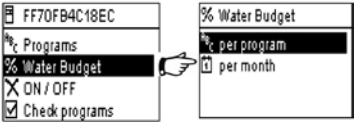




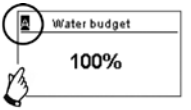



❸ Then select **"per program**" and confirm by pressing OK.

❹ Then choose to which of the programs A, B or C to assign the water budget. Modify the permitted watering run times in 1% increments (from 0 to 300%) and confirm by pressing OK.

*By default:*
*100% = no change to watering run times*
*> 100% = increase of watering run times*
*< 100% = decrease of watering run times*



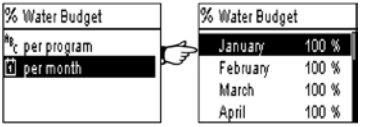

• **Seasonal adjustment per month**

❶ Select **"per month"** and confirm by pressing OK.

❷ Change the watering run times for each of the months by fractions and confirm by pressing OK. Programs A, B and C will be affected. Water budgets per program and per month are cumulative.

*Example of water budget:*
*- A valve programmed with a time of 10 minutes on program A and 20 minutes on program B.*
*- A water budget set at 50% on program. A and 200% on program B.*
*- Un water budget set at 300% for the current month.*

***=> The effective watering run time will be 15 min (10 x 50% x 300% = 15) on program A and 120 min (20 x 200% x 300% = 120) on program B.***



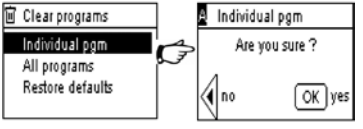

**The water budget does not apply to manual actions.**
**The maximum watering run time is 24 hours.**

## Deleting irrigation schedules

❶ Select **"Delete programs"** from the TBOS IR welcome menu and confirm by pressing OK.

❷ Then select the type of program to delete:
- **Individual program** to delete only one of the programs (A, B or C)
- **All programs** (A, B and C)
- **Reset factory parameters** (TBOS name = ID, station names, Rain Delay, programs A B C empty, etc.)

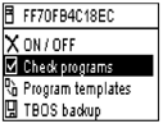
❸ Confirm your choice by pressing OK.
A deletion confirmation message will be displayed once again. Answer yes or no by pressing OK.

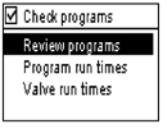




## Reading irrigation schedules

❶ Select **"Check programs"** from the Welcome screen and confirm by pressing OK.

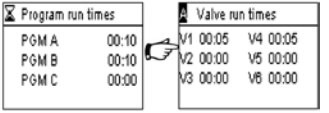
❷ Then select the desired display and confirm by pressing OK:
- **Review programs** that displays details of each of the programs A, B and C + Rain Delay + Water budget per month.

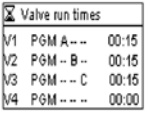


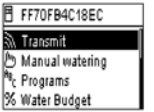



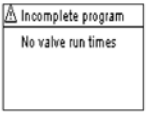
- **Program run times** (programs A, B and C)

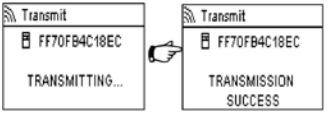
- **Station run times** (1 to 6)




## Transmitting a watering program to the control module

Once programs A, B and C have been set, they can be sent via infrared to the connected TBOS control module.

❶ Select **"Transmit"** from the Welcome menu and confirm by pressing OK.

❷ The program to be downloaded will be displayed on the screen. Confirm the transmission by pressing OK.

## 2 . Manual actions

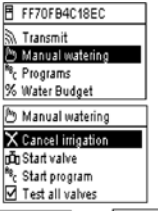
**Manual actions override other actions. Any program that is running will therefore be deactivated to take account of the manual function.**

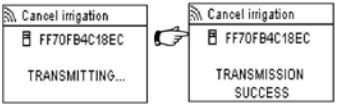
## Stop watering

❶ Select **"Manual watering"** in the TBOS IR welcome screen and confirm by pressing OK.

❷ Then, select the type of manual action to be performed:
- **Stop watering**
- **Start a station**
- **Start a program A, B or C**
- Perform **a test on all stations.**

❸ Select the **"Stop watering"** menu and confirm by pressing OK to manually stop the watering operating in progress.



## Starting a channel manually

❶ Select **"Start station"** and choose the station to be started by means of ON OFF and confirm by pressing OK. Then, set the manual watering run time and confirm by pressing OK to send the data to the TBOS control module.

→ **Watering will start after a manual time delay of 2 seconds.**

## Running a program manually

❶ Select **"Run program"** and choose one of the 3 programs A, B or C to be started using the ON OFF keys and confirm by pressing OK.

→ **Remember, a program consists of all stations operating in sequence.**

The program data is then transmitted to the TBOS™ control module.

## Testing watering on all channels

❶ Select **"Test all stations"** and confirm by pressing.

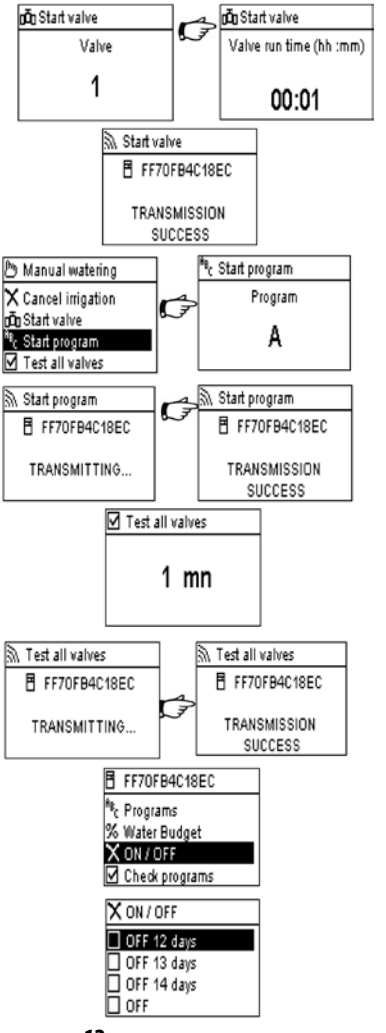
❷ Then, set the watering test run time (1 to 10 min) using the ON OFF keys, and confirm by pressing OK to transmit the program data to the control module.

## Rain Delay ON/OFF position

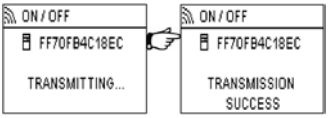
The TBOS-II universal filed transmitter has an **"OFF"** function that allows you to disable watering (e.g. when it rains) regardless of programming. To re-enable watering, the default position is **"ON".**

❶ Select **"ON/OFF"** from the Welcome menu and confirm by pressing OK.

❷ Then, select the time during which you wish to stop the program (1 to 14 days or complete shut-down) and confirm by pressing OK.



The data will then be immediately transmitted to the TBOS™ and is totally independent of the programming.




→ **If you select the "OFF" option, watering will be automatically stopped until switched back on. To restart, perform the same steps as above and select the "ON" option.**

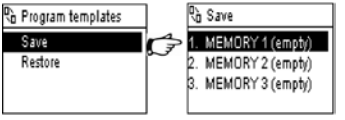
## Saving the general program in the TBOS-II™ field transmitter

The new TBOS-II™ universal field transmitter contains an internal memory that can store up to 3 different programs (irrigation + names).

You can, for example, create 3 different programs covering specific seasons (Spring/ Summer/ Autumn) and save them in the field transmitter. This action allows you to save time, as they can be transmitted by a simple click at the time of your choosing. The program of the control module must be read beforehand.

❶ Select **"Program memories"** from the TBOS™ IR welcome screen and confirm by pressing OK.

❷ Then, choose between two options: **"Save"** the data in the field transmitter or **"Restore"** the data.




**The "Restore" function allows you to delete all data contained in the field transmitter except for the time and the date. "Restoration" replaces the program displayed on the field transmitter. A transmission must then be made to the control module.**

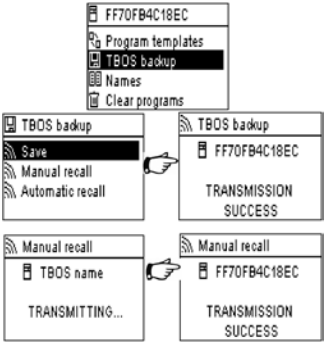
## Saving program data on the TBOS-II™ control module

The TBOS-II™ has memory for storing another program in addition to its current program.

❶ Select **"Backup TBOS"** from the TBOS™ IR welcome menu and confirm by pressing OK. The console can send a save instruction to the TBOS™, which will then make a copy of its current program in its backup memory.

❷ Then choose **"Save"** if you wish to save your program in the internal memory of the control module. Confirm by pressing OK.

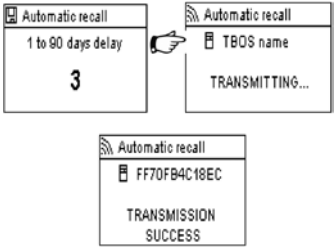
❸ Choose **"Manual recall"**. Upon receiving this instruction, the TBOS™ immediately replaces its current program with the backup program.



❹ Choose **"Automatic recall"** if you wish to program the overwriting programs already saved in the control module and replace them with new ones (between 1 and 90 days).

Select your time period using the ON OFF keys and confirm by pressing OK.

After the specified time period, the new program will be automatically transmitted by the TBOS™ to the control module.




→ **The control module will thus contain the "saved" program and the "active" program. Both are stored in the memory in case of a power failure.**

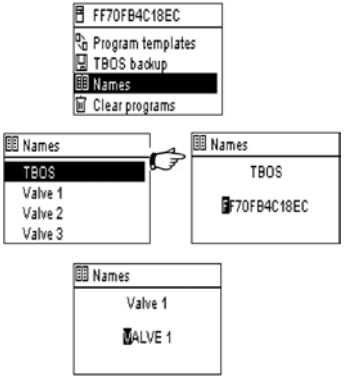
## Changing the names of the TBOS-II™ control modules and stations

The different control modules and watering stations can be individually named for ease of identification, and thus simpler programming system operation.

❶ Select **"Names"** from the TBOS™ IR welcome menu and confirm by pressing OK.

❷ To name your control module, select **"TBOS"** then enter the characters using the ON OFF and arrows keys.

❸ To name your various stations, select the station from the list and enter the characters in the same way. (Ex: NORTH RAB for the North round-a-bout.) Then confirm by pressing OK and move to the next character.

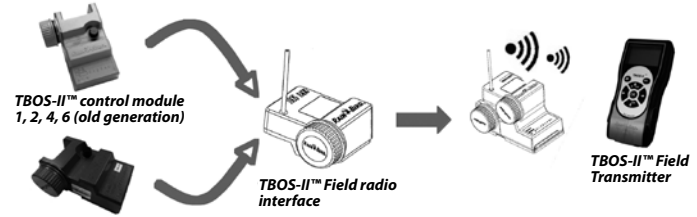


## D – USING THE TBOS-II™ FIELD TRANSMITTER via RADIO

As indicated in the foreword, the addition of a radio interface unit enhances the programming of old generation TBOS™ control modules and allows the transfer of programs by radio to the new TBOS-II™ control modules.

This simply requires the radio interface unit to be mounted on the old or new generation TBOS™ control module.

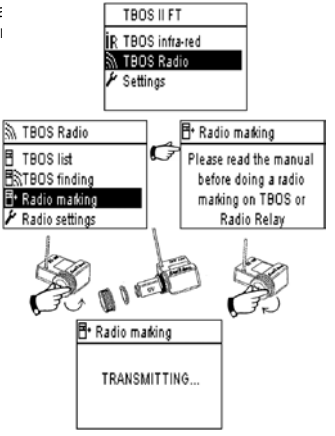
**For information, the radio interface unit is compatible with the following old model TBOS™ control modules:**
- K80 120, K80 220, K80 420, K80 620 (Europe)
- K80 110, K80 210, K80 310, K80 410 (U.S)




### 1. Radio tagging of TBOS-II™ products

Radio tagging consists in sending the network number of the TBOS-II™ field transmitter to the radio interface unit. The two radio products (TBOS-II™ field transmitter and ra face unit) must have the same network number in order to communicate with o

Radio tagging is performed only once in the lifetime of the product (the first used after leaving the factory) or if the user moves a radio interface unit from one site to another (E.g. site 1 with network number 0001, site 2: 0002, etc.).




❶ Press any key to turn on the field transmitter and display the welcome menu.

❷ Press OK, select **"TBOS Radio"** using the OFF key and confirm by pressing OK.

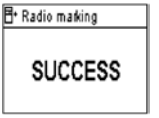
❸ The select **"Radio tagging"** from the TBOS™ Radio menu. A message will then appear on the screen.

❹ Remove and reinsert the radio interface unit battery.

❺ Confirm the radio tag on the TBOS-II™ field transmitter within 20 seconds of reinserting the battery.

❻ If tagging has failed, the message **"FAILURE CODE 1"** will be displayed after a few seconds *(1 indicating a radio error)*.

If tagging has been performed correctly, the message **"SUCCESS"** will be displayed on the screen, followed by the unique identification code of the radio interface unit just tagged *(12 digits)*.




## 2. Special radio tagging procedure for old TBOS™ products

If the radio interface unit is attached to an old TBOS™ controller and the user performs radio tagging, the irrigation program held in the old TBOS™ is automatically transferred to the radio interface unit that then becomes the controller.

An empty program is then sent to the old TBOS™ control module that when only serves to control the solenoids.

**If network tagging is subsequently performed again, it is an empty program that will be transferred, causing the loss of the interface unit's program. To prevent this happening, you must remove the radio interface unit from the old control module if you which to perform network tagging of a module that has already been operated.**

## 3. Changing the network number of TBOS-II™ products

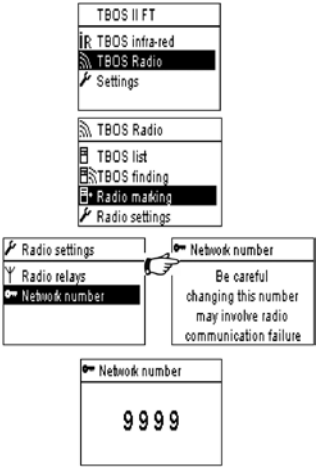
Each TBOS-II™ field transmitter and each radio interface unit is assigned a network number of **"9999"** in the factory. This user-modifiable number is stored in the memory of the TBOS-II™ field transmitter and the radio interface unit even when switched off.

❶ Press OK, select **"TBOS Radio"** using the OFF + key and confirm by pressing OK.

❷ Then, select **"Radio tagging"** from the TBOS™ radio menu. A message will then appear on the screen.

❸ Select **"Network number".** A warning message will automatically be displayed informing you of your action.

❹ The default network number will be displayed (9999). Use the ON OFF keys to change the numbers and arrows to move from one number to another.



## 4. Automatic radio search of existing TBOS™ control modules

This is an essential step for communicating by radio with all radio interface units mounted on a TBOS™ or TBOS-II™ control module. This search will automatically detect all nearby TBOS™ control modules; up to a limit of 32 products (the first 32 control modules detected will be listed).

❶ Press any key to switch on the field transmitter and display the welcome menu.

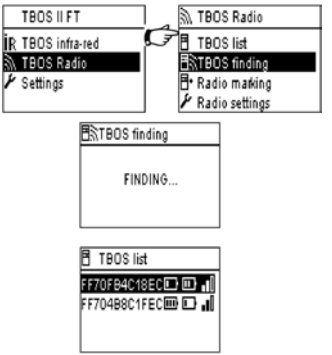
❷ Press OK, select **"TBOS Radio"** using the OFF key and confirm by pressing OK

❸ Then, in the TBOS Radio II menu, select **"TBOS finding".**

❹ The **"Finding…"** screen will be displayed for a minimum of 25 to 60 seconds according to the number of TBOS™ modules detected.

❺ Once TBOS™ module detection is completed the **"TBOS list"** screen is displayed, with the characteristics of each module:

- TBOS module name (max. 12 characters).
- The battery charge level icon of the TBOS-II™ module.
- (0 to 3 bars) or the TBOS™ module (low battery.
- or no icon if the battery charge level is OK).
- Radio interface unit battery charge level icon (0 to 3 bars).
- Level of radio signal reception between the TBOS-II™ field transmitter and the radio interface unit.



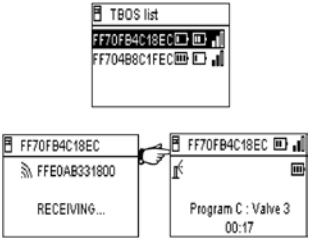

→ **This TBOS™ control module Radio search list is saved and can subsequently be accessed via the"TBOS list" menu in the "TBOS Radio" screen.**

## 5. Receiving a program via radio

❶ Select **"TBOS list"** from the TBOS™ Radio welcome menu and confirm by pressing OK.

❷ Once the list of TBOS™ modules is displayed on the screen, select the chosen module using the OFF key and confirm by pressing OK.

❸ A radio reception **"Receiving..."** message is displayed, followed by a summary of the TBOS™ module program.



❹ In the event of a radio communication problem, a reception failure message will be displayed on the screen.
Repeat the operation.


Failure codes:

- **Failure code 1: Radio communication problem** Check the radio interface battery.
- **Failure code 2: Infrared communication problem** Clean the infrared part of the apparatus or check the TBOS™ controller battery.
- **Failure code 3: TBOS™ module type reading error**

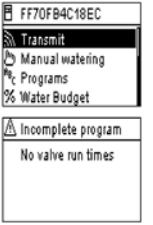
  A radio interface unit has been placed on a TBOS™ controller then moved onto a TBOS-II™ controller. This error will continue to appear until the radio interface unit's battery is changed.
- **Failure code 4: Authentication problem.**

  Communication cannot be established between the items of equipment. This authetication phase between the TBOS-II™ field transmitter and the radio interface unit/controller ensures that only RAIN BIRD products can communicate with one another.

**When the battery of a radio interface unit is changed, the program requires to be sent again by radio. This applies where the radio interface unit is fitted on an old model TBOS™ module.**

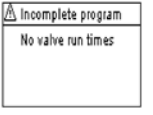
## 6 . Transmitting a program by radio

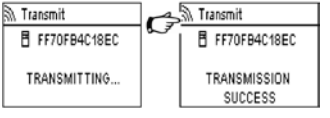
This operation is performed in the same way as for a transmission via infrared. Once the irrigation program has been changed, it can be transmitted by radio to the TBOS™ controller of your choice.




❶ Select **"Transmit"** from the Welcome menu and confirm by pressing OK.

❷ If the program is incomplete, a check screen indicates the missing fields.



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