

2.. Operation (contd)...

2.6 Factory Default.

To clear the memory of the RICO 24S and reset it to factory default values press Enter and Escape simultaneously for 3 seconds while the Start Up screen is displayed. The following screen will be displayed.

Warning!!! You are about
to clear the memory ENT to
clear ESC to cancel

Press Enter to clear the memory or Escape to abort. **Note: If you press Enter all the Program settings will be lost and all the values will be reset to factory defaults.**

Default Values:

Start times : - : - : - : -
Duration : 000
Odd / Even : All
Water Days : SMTWTFS all ON
Rain Sensor : Cleared (Not Fitted)
Pump : Cleared (Not Fitted)

WARRANTY

This warranty is issued by Remconix cc, manufacturers of the RICO 24S, hereinafter referred to as the Company. The Company warrants to the original purchaser that for a period of ONE YEAR from the date of purchase, the equipment is free from defect under normal use, both in workmanship and material, subject to the following conditions.

1. Repair or replacement of any part of this equipment, found by the Company to be defective, shall be at the election of the Company. The costs of such repair shall be borne by the Company in full, provided that the equipment is returned via an authorised distribution agent.
2. This warranty shall become void and cease to operate if any repairs to the equipment are effected by any persons not duly authorised by the Company, or if any substitute parts not approved by the Company are used in the equipment, or if the serial number of the equipment is removed.
3. The Company shall not be responsible for damages resulting from fire, flood, civil disturbances or any Act of God. The Company shall not, in terms of this warranty be responsible nor held liable for any consequential loss or damage of any kind caused by or due to the failure or malfunction of the equipment.
4. The Company shall not be responsible for transportation or other costs than those incurred within the provisions of Point 1 of this warranty.
5. This warranty shall not apply to the equipment if it is purchased or used beyond the borders of the Republic of South Africa, Lesotho, Swaziland, Namibia, Botswana, Mozambique, Angola and Zimbabwe.
6. Where service is requested under warranty and no fault or defect can be found by the Company, all costs incurred will be for the purchaser's account.
7. This document, as well as your invoice will serve as proof of purchase. For the purpose of warranty, it will be essential to produce this document and invoice. Failure to do so will render the purchaser liable for the service costs.

RICO-S24 Wireless Irrigation Controller Installation & User Guide

The **RICO-S24** is a stand alone wireless irrigation controller. With the RICO-24 you can control up to 24 zones and a pump. The RICO-S24 works in conjunction with a Pump Control Unit (PCU) and a Field Sensor Transmitter (FST) and Valve Control Unit's (VCU)



1. INSTALLATION GUIDE

1.1 Contents

- 1 X RICO-S24 Wireless Irrigation Controller
- 1 X 12 V DC Transformer
- 1 X Antenna
- 1 X User instructions
- 4 x 7mm Wall Plugs

1.2 Installation

Place the RICO-S24 in a central position of the area that must be irrigated, if possible, where mains electricity is available. Once a suitable position has been found, mount the RICO-S24 using the wall plugs and screws provided securely. Firstly connect the rubber-duck antenna supplied to the BNC antenna connector and connect the 12V DC supply. Now the RICO-S24 is ready to be programmed

1.3 Menu Structure

This is the menu structure of the RICO-S24.

1.3.1 Start Up

```
RICO-S V 1.00
BY
REMCONIX
```

This start up menu will be displayed for 30 seconds. While this menu is displayed the contrast of the display can be adjusted. Press the up/down arrow keys to adjust the contrast, if no key is pressed for 30 seconds the unit will change to the next menu. Once this is done the RICO-S24 will remember this setting even after a power failure. To re-adjust the contrast switch OFF the unit and reapply power, while the start up menu is displayed adjust contrast.

1.3.2 Main Menu

```
▶ SETUP
  AUTO
  MANUAL
  SYSTEM OFF
```

"System OFF" will flash indicating that the system is currently off and that all irrigation is stopped. Press the Enter key to go into the SETUP Menu.

2.. Operation (contd)...

To STOP the Auto mode press Escape to go back to the Main Menu. As soon as you exit the Auto mode all irrigation is stopped. Even if the controller is busy with a program all zones will be closed and the irrigation is stopped.

2.3 Manual Mode

In manual mode you can control one zone at a time or start an individual program. See 1.3.5 for instructions.

If you start a individual program it will start irrigation immediately and will irrigate the zones as setup in 1.3.3.3 SET DURATION till the end of that program and then stop the irrigation.

2.4 Range test

Place the VCU's and PCU where you want to install these units and do a range test. See 1.3.3.11 on how to send a range test.

Range Test Indication —The VCU's and PCU will indicate receipt of a Range Test signal by flashing the green Range Test light. A full strength signal will be indicated by the Range Test light flashing green 8 times, with each flash spaced approximately one second apart. There is then a break in the signal for about ten seconds before a further 8 transmissions are sent. This sequence is repeated continuously by the RICO 24S while it remains in Range Test mode.

Num of Flashes	Signal Strength
8	Very Good
7	Average
5	Below Average
2	Poor
1	Very weak
0	No Communication

2.5 Rain Sensor

You can use any make of rain sensor that is available on the market and connect that to a Field Sensor Transmitter (FST). Refer to the Installation manual of FST for more instruction on how to connect the rain sensor.

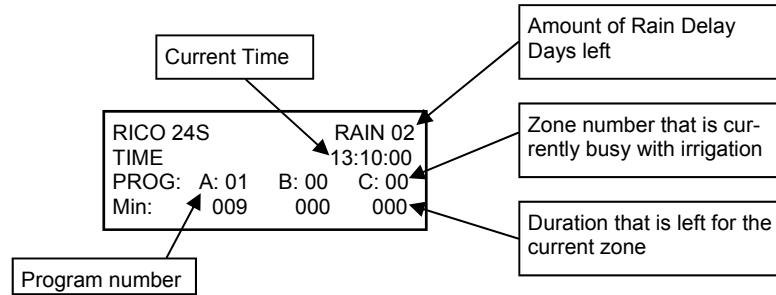
The rain sensor will send a signal to the RICO 24S once it has detected the amount of rain it was set to. The Rain LED will go ON and stay on until stops to rain. "RAIN" is also displayed on the screen while in Auto Mode. If the rain stops the rain sensor will send a signal to the RICO 24S and the Rain LED will go off.

If a rain delay was set, this delay will start as soon as the rain stops. **Note: Some rain sensors take some time to dry out before it will send a signal that the rain has stopped. This could result in a delay that is longer then the Rain Delay that was setup on the RICO 24S.**

2.. Operation (contd)...

2.2 Auto Mode

Once you have set the controller to Auto mode the irrigation scheduling will commence automatically at the first start time that is setup in your schedule.



In Auto mode you can see which program is running, which zone is open and what duration is left for that particular zone. E.G. in the above example Program A is running and Program B and C is off. Zone 1 is on with 9 minutes remaining to irrigate. **Note: The remaining time is for zone 1 and not the remaining time for Program A.**

If two or more programs are running at the same time each program will indicate which zone is currently ON and what duration is left for that particular zone. **E.G.**

```

PROG: A: 01 B: 12 C: 20
Min: 009 003 001
    
```

Program A, B and C is running. In program A, zone 1 is ON and has 9 min left to irrigate and in program B, zone 12 is ON and has 3 min left to irrigate while in program C, zone 20 is ON and has 1 minute left to irrigate.

If two programs have been programmed with zones that is common to both programs and one program has to start while the other on is busy. The second program will abort. **E.G** Program A has zones 1-5 with a duration of 5 min per zone and must start at 10:00AM while program B has Zones 5 -10 with a duration of 10 min per zone and must start at 10:15: AM. Because program A is still busy Program B will abort. This is indicated with a X under the B

```

PROG: A: 04 B: 12 C: 20
Min: 005 X003 001
    
```

Indicate that Program B has aborted

If a rain sensor is fitted and a rain delay was set the remaining days of the rain the delay is displayed. **Note: The delay only start when the rain has stopped and the RAIN LED has gone off.**

If there is no rain sensor fitted or there is no current delay because of rain, the rain indication will be blank.

1.3.. Menu Structure (contd)...

1.3.3 SETUP Menu

```

▶ SET TIME & DATE
  SET START TIME
  SET DURATION
  SET ODD/EVEN
  SET WATERING DAYS
  LINK ZONES
  SET RAIN DELAY
  LEARN VCU
  LEARN PCU
  LEARN RAIN SENSOR
  SEND RANGE TEST
    
```

Note: Only four lines of this menu will be displayed at a time.

Use the up/down ↑↓ arrow keys to scroll up and down the menu. The arrow ▶ will move up or down to indicate which menu is selected. Press the Enter key to enter in to a menu. If you press Escape the menu will go back to the previous menu.

1.3.3.1 SET TIME & DATE

```

▶ SET TIME 00:30
  SET DATE 05/11/2009
  SET DAY THURSDAY
  Cur Time 00:44:43
    
```

Note: The time and date in this manual is only for demonstration purposes and will not be the same as on the unit when it's powered for the first time.

- **SET TIME**
Press Enter to adjust the TIME. The Cursor will move to the hour. Use the up/down ↑↓ arrow keys to adjust the hour. If hours is set correctly press the right arrow to move the cursor to the minutes. Adjust the minutes using the up/down ↑↓ arrows.
Once the hours and minutes have been adjusted press the Enter key. Note: The "Cur Time" will change to the time that has been set and the time is now saved. Press the escape key.
- **SET DATE**
Move ▶ to "SET DATE" using the up/down ↑↓ arrows. Press Enter to set date.
Set DAY, MONTH and YEAR using the up/down ↑↓ arrows to adjust and the left/right ←→ arrows to change between different fields.
Once done Press Enter and the new date will be stored.
Press Escape
- **SET DAY**
Move ▶ to "SET DAY" using the up/down ↑↓ arrows. Press Enter to set day.

1.3.. Menu Structure (contd)...

Use up/down ↑↓ arrows to adjust the day. Press Enter when done.
Press Escape to exit "SET DAY"

Press Escape again to go back to "SETUP Menu"

1.3.3.2 SET START TIME

```
▶ PROGRAM A TIMES  
PROGRAM B TIMES  
PROGRAM C TIMES
```

Select which program start times must be edited by using the up/down ↑↓ arrow keys. Press enter to edit that program.

```
PROGRAM A START TIME  
▶ 1 -:- -    2 -:- -  
3 -:- -    4 -:- -
```

The initial start times is all set to -:- -. This means that the start times are all disabled. If you want to disable any start time set it to -:- -. Use the up/down ↑↓ arrow keys to select which start time must be edited 1, 2, 3 or 4 .Press enter to edit that start time. Use up/down ↑↓ arrows to adjust the hours and minutes and the left/right arrows to select between hours and minutes. Once done press the Enter key to save the data. Note: The cursor will blink twice to indicate that the data was saved. Repeat the above steps to set all the start times for program A if required. Press Escape to go back to the "SET START TIME" menu. Repeat the above steps to set the start times for programs B and C. Press Escape again to go back the "SETUP" menu.

1.3.3.3 SET DURATION

The duration of each zone can be adjusted in 1 Min steps from 1 Min to 999 Min per zone. Each program has it's own set of durations for each zone.

```
▶ PROGRAM A DURATIONS  
PROGRAM A DURATIONS  
PROGRAM A DURATIONS
```

Use the up/down ↑↓ arrows to select which program must be edited. Press Enter to edit that program.

2.0 Operation

Use the up/down ↑↓ arrow keys to select program A, B or C Press Enter.
The selected program will start and complete the duration of the selected program. If you wish to stop during the execution of the program press Escape.
The RICO 24S will then exit from the program and close the zones and switch of the pump, if a pump was learned.

2.0 Operation

The RICO 24S is a stand alone wireless irrigation controller that can control up to 24 zones (which is controlled by 6 VCU 4z's or 12 VCU 2z's) and a pump. The controller can also listen to a wireless rain sensor. Any make of rain sensor can be connected to a Field Sensor Transmitter (FST) to be a wireless rain sensor.

The RICO-24S has 3 different programs, Program A,B,C, each with four different start times. The irrigation period for each zone can be set differently for each program. Each zone can have a duration of 1 Min to 999 Min.

Each program has it's own individual setting for ODD, EVEN or ALL.

2.1 Programming

Plan your irrigation system by identifying the zones and the duration that each zone has to irrigate for and what the start times should be. Program your RICO 24S by following the instructions in pages 2– 9 in this manual.

You can have as little as 1 zone per program or all 24 zones. A program can control some of the zones and another program the other zones. **E.G.** Program A can have zones 1 –5 and program B zones 6-10 and program C zones 11 to 24. All 3 programs can also control all 24 zones but with different durations. **E.G** Program A can control Zone 1-24 and irrigate for 5 min per zone and Program B can also control zones 1-24 but will irrigate 10 min per zone Note: Program A and B can NOT operate at the same time if they control the same zones.

Program A and B can however operate at the same time if the zones that is allocated to that program is different. **E.G** Program A can have zones 1 –5 with a duration of 5 min per zone and program B zones 6—10 with a duration of 10 min per zone and both programs can start at say 08:00.

You can let Program A operate on ODD days while Program B operate on EVEN days and program C to operate every day or only certain days of the week.

1.3.. Menu Structure (contd)...

1.3.3.11 Range Test

```
RANGE TEST
PRESS ENT TO START
PRESS ESC TO ABORT
SENDING RANGE TEST
```

This line is only displayed while in range test

Press the Enter key to start the range test. The display will indicate that it is sending a range test signal and the TX LED will flash. To stop the range test press Escape. The RICO-24S will automatically stop sending a range test signal after 60 minutes.

1.3.4 AUTO

In the MAIN Menu select AUTO by using the up/down ↑↓ arrows and press Enter. The controller is now in Auto mode and the irrigation program will start automatically .

```
RICO 24S
TIME           13:10:00
PROG:  A: 00  B: 00  C: 00
Min:    000   000   000
```

To stop the Auto Mode press Escape to go Back to the MAIN menu. While in the MAIN menu all irrigation is stopped. If a program was busy with a irrigation cycle it will stop and close all valves if you exit the Auto Mode.

1.3.5 MANUAL

```
► ZONE 01
  OPEN
  CLOSE
  SELECT PROGRAM
```

To Open or Close a zone manually, select "ZONE 01" by using the up/down ↑↓ arrow keys. Press enter. Now use the up/down ↑↓ arrow keys to adjust the zone number to the required zone that must be open or closed. Press Enter.

Now select either OPEN or CLOSE and press Enter. The TX LED will flash indicating that a open or close command was send to the VCU. If you send a open command to the next zone the RICO 24S will close the previous zone and then open the next zone.

To start a program manually move the cursor ► to "SELECT PROGRAM" using the up/down ↑↓ arrow keys and press Enter.

```
SELECT PROGRAM
► PROGRAM  A: 00
  DURATION  000
```

1.3.. Menu Structure (contd)...

```
01:000  05:000  09:000
02:000  06:000  10:000
03:000  07:000  11:000
04:000  08:000  12:000
```

```
13:000  17:000  21:000
14:000  18:000  22:000
15:000  19:000  23:000
16:000  20:000  24:000
```

Select zone to be edited by using the up/down ↑↓ arrow keys. Press Enter. The cursor will highlight the last digit of the minutes. Press the up/down ↑↓arrow to adjust the duration as required.

Once done, press enter. The cursor will blink twice and return to the zone number again and the duration for that zone will be saved and displayed

The display will automatically change to the second screen with zones 13 - 24 if the cursor is on zone 12 and you press the down ↓ arrow key.

Continue setting up all the zones as required following the above steps

Press Escape to go back to "SET DURATION" Menu

Repeat the above steps to set the durations for programs B and C.

Press Escape to go back to the "SETUP" menu.

Note: If you set the duration for a zone to 000 that particular zone is disabled.

1.3.3.4 SET ODD/EVEN

```
► PROGRAM A ODD
  PROGRAM B EVEN
  PROGRAM C ALL
```

NOTE: The setting for ODD/EVEN/ALL in this manual is only for demonstration purposes and may not be the same on the unit when it's powered for the first time

Select which program to edit by using the up/down ↑↓ arrow keys. Once the program is selected press Enter to edit that program.

Select ODD/EVEN/ALL by using the up/down ↑↓ arrow keys. Press Enter to save your selection.

Press Escape to go back to the SETUP Menu

1.3.. Menu Structure (contd)...

1.3.3.5 SET WATERING DAYS

```
▶ PROGRAM A S M T W T F S
PROGRAM B S M T W T F S
PROGRAM C ODD
```

NOTE: If a program was set to ODD/EVEN in the “SET ODD/EVEN” menu ODD/EVEN will be displayed next to that particular program and the individual watering days for that program is disabled.

Select the program to be edited by using the up/down ↑↓ arrow keys. Press Enter.

```
PROGRAM A S M T W T F S
           1 1 1 1 1 1 1
0 - Watering Off
1 - Water On
```

The above menu will be displayed with the cursor highlighting the Sunday. Press the up ↑ arrow key to set the watering for that particular day. A “0” means that the watering is OFF and a “1” means that the watering is ON.

Use the left/right arrow key to move between the different days and adjust all the days as you would require.

Press Enter to save your settings. The day which is highlighted by the cursor will blink momentarily to indicate that the data was saved.

Press Escape to go back to the “SET WATERING DAYS” Menu. Repeat the above steps for programs B and C if necessary.

If all Programs are done press Escape to go back to the “SETUP Menu”.

1.3.3.6 LINK ZONES

This part of the menu is not implemented yet and is for future up grades.

1.3.3.7 SET RAIN DELAY

NOTE: If a rain sensor has not been learned you won't be able to adjust the rain delay and the delay will be set to zero days. See “1.3.3.10 LEARN RAIN SENSOR” for more details

```
DAYS TO DELAY: 00
```

Adjust delay by using the up/down arrow keys. Once the required delay is set press Enter and the data will be saved. The last digit will blink momentarily to indicate that the data was saved.

1.3.. Menu Structure (contd)...

1.3.3.8 LEARN VCU

```
▶ LEARN VCU A
LEARN VCU B
LEARN VCU C
LEARN VCU D
LEARN VCU E
LEARN VCU F
```

Note: Only four lines of this menu will be displayed at a time.

Use the up/down ↑↓ arrow keys to scroll up and down the menu. The arrow ▶ will move up or down to indicate which VCU is selected.

Put the Valve Control Unit (VCU) in Learn mode. Consult the VCU Installation manual for instructions on how to Learn a VCU.

Select which VCU must be Leared and press Enter. The TX LED will flash indicating that a Learn signal is sent.

Continue to Learn all the VCU's in the irrigation system.

Press Escape to go back to the “SETUP” Menu.

1.3.3.9 LEARN PCU

Put the Pump Control Unit (PCU) in Learn mode. Consult the PCU Installation manual for instructions on how to Learn a PCU.

While ▶ LEARN PCU is selected press Enter. The unit will send a learn command to the PCU and the TX LED will flash indicating that a Learn signal is sent.

1.3.3.10 LEARN RAIN SENSOR

In the “SETUP” menu while “▶ LREAN RAIN SENSOR” is selected, press Enter. The RICO 24S is now in learn mode and the RAIN LED will go on.

Put the Field Sensor Transmitter (FST) in Learn Mode. Consult the Installation manual for the FST on how to do this.

The FST will send a Learn command and the RICO 24S will learn the FST 's address. Once the RICO 24S has learned the FST's address the RAIN LED will go off.

The RICO 24S will be in Learn mode for 2 minutes and will time out if no signal is received While the RICO 24S is in learn mode the keypad is disabled, as soon as the unit has learned the FST the keypad is enabled again.