MaterMacc

USE AND MAINTENANCE MANUAL

IRRIGAMATIC EVO

Codice 58330281
Rev.00

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INTRODUCTION

This manual guide contains a description of the work and the necessary instructions for performing basic operations and regular maintenance of the device.

This guide is for convenience divided into easily-defined chapters.

These instructions are intended for professional users only, who are to possess specific knowledge about how to use the device, special admittance and training.

It is recommended to use original spare parts and accessories. Non-original parts in addition to forfeiture of the guarantee can be dangerous and may affect the durability and specifications of the machine.

It is possible that some devices, described in the manual, will not be present in your device, depending on the selected equipment and the intended market .

UPDATING THE MANUAL

Information, descriptions and illustrations contained herein shall reflect the state of the equipment at the time of its sale. The manufacturer reserves the right to perform from time to time possible changes in the equipment for technical or commercial reasons. Such changes do not require the Producer to intervene in sold up devices and do not render this publication inappropriate.
Possible additions the manufacturer finds necessary to provide in the future should be kept together with this manual guide and shall be an integral part thereof.

COPYRIGHT

WARRANTY

- Verify on delivery that the equipment has not been damaged during the transport and that the accessories are integral and complete.
- Any claims must be made in writing within 8 days from reception.
- The warranty against any defect of the materials is valid one year from the delivery date of the equipment.
- The warranty does not include shipment expenses (the material travels at risk and danger of the addressee).
- Any damage caused to people or things are excluded from the warranty.
- The warranty is limited to the repair or free replacement of the faulty piece.
- The retailers and the users are not entitled to any indemnification from the manufacturer for any damages (costs for work, transport, defective job, direct or indirect incidents, no profit on harvests, etc).

WARRANTY DECLINE

Besides what is reported in the supply
contract the warranty declines:

- In case the limits referred to in the technical data table or in other tables in the handbook are exceeded.
- In case the instructions described in this handbook have not been followed carefully.
- In case of wrong use, faulty maintenance or mistakes made by the client.
- In case of non original spare parts.
- The contractual guarantee is not applied if the cited conditions are not respected even only partially.
- The use of spare parts not approved by the Manufacturer invalidates every guarantee and releases the Manufacturer of Retailer from every liability due to malfunctioning or incidents.
- The removal or modification of the shelters and protections releases the Manufacturer from every liability due to damages to things and/or people.
- However, the Manufacturing Company is available to assure an immediate and accurate technical attendance and all that can be necessary for the better functioning maximum production of the equipment.

NOTES ON SAFETY
For the safe operation of the device first read carefully these notes.

POWER SUPPLY
The device is designed for the specified type of current.

MAINTENANCE
Maintenance procedures performed by the operator are described in the documentation supplied to the customer with the product.
Do not perform maintenance operations, which are not specified in the client documentation.

CLEANING
Before proceeding to cleaning, disconnect the power cord from the device.
Use specific multifunctional cleaning spray, since the use of other cleansers may result in breakage and possible incidents.

ELECTRICAL SAFETY
Use only the power cord supplied with the equipment.
Do not place the unit where there is a chance of stepping on the power cord.
Do not put any objects on the device.
In the case of one of the below mentioned situations, immediately turn off the device and disconnect the power cord.

- The device produces noise or an unusual smell.
- Power cable is damaged or worn.
- Some liquid spilled into device.
- Any part of the device is damaged.

To resolve this issue, contact an authorized service center.

OPERATIONAL SAFETY

Do not perform maintenance procedures, if they are not described in the documentation, or no training was provided to the operator by the authorized regional dealer.

Always follow all warnings and instructions marked on the device or supplied with it.

Always pay utmost care when moving or transferring the device.

Always install the device in a spacious room, so you can perform the maintenance.

Do not place the device near a source of heat.

RECYCLING AND PROCESSING

In accordance with European standards electrical and electronic devices should not be recycled together with domestic waste.

In the member states of the European Union you are to take electrical appliances to special places free of charge.

For further information please contact the local agency responsible for recycling.

For further information, contact the local agency responsible for recycling, or ask for special instructions.

1. GENERAL FEATURES

FUNCTIONS:

- Current date and time.
- Measurement of wound and unwound
- Start delay 0...120 min.
- Regulation of the retrieval speed (from 4 to 850m/h) **(Irrigamatic EVO1)**.
- Regulation of the operating speed of up to 4 sectors (from 4 to 850m/h) **(Irrigamatic EVO4)**.
- Display of the actual time and irrigation end time.
- Setup of job end time and automatic updating of speed and pauses.
- Final pause 0...120 min.
- Auxiliary irrigator control
- Unwound end signalling.
- Available irrigation units:
- 1) m/h (STANDARD)
- 2) mm (mil) pluviometric (OPTIONAL)
  - 2.a) with flow meter,
  - 2.b) fixed flow rate,
  - 2.c) calculated flow rate by gun Pushure, nozzle diameter, LANE WIDTH.
- Operations once the irrigation is over.
- Automatic shut-off for energy saving.

OPTIONALS:

- Pushure switch
- Rain & wind sensor
- Digital or analog flow-meter
- Speed measurement by sensor on pinion (default) or on roller.
- Integrated GSM/GPRS 4 band module allowing:
  - SMS alerts and status notification send
  - SMS commands receive (i.e. START/STOP/ALT, speed/mm H_2O adjust,...).

2. USER INTERFACE

The user interface is made up of a panel comprising:

1. **A graphic LCDl with backlight.**

2. **Push button to switch ON/OFF the console**

3. **Incremental encoder with switch setting and command operation.**

During an irrigation cycle the display shows actual speed, end job time, remaining unwounded hose, remaining pause time

In case of anomalies appropriate messages are shown,.

During device setup the backlight of the LCD display is always on. It turns off automatically if the encoder is idle for a preset period of time.

The backlight switches on again automatically at first action on the knob.

3. INSTRUCTIONS FOR USE

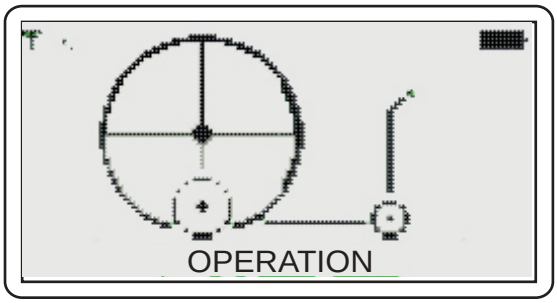
3.1. START UP AND MAIN MENU

- Connect power supply cables of electronic console to a 12V d.c. voltage source.
- When switching electronic console on the LCD will display name and version of its firmware.
- A series of messages follow:

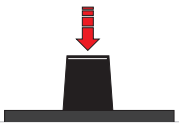
The first message informs about the execution of the initialization.

The message below shows the control unit model at the top – **EVO 1** - **EVO 4**.
At the bottom it shows that initialisation is complete.

The electronic console goes to main screen waiting for new commands from the user who can access the menus listed below:

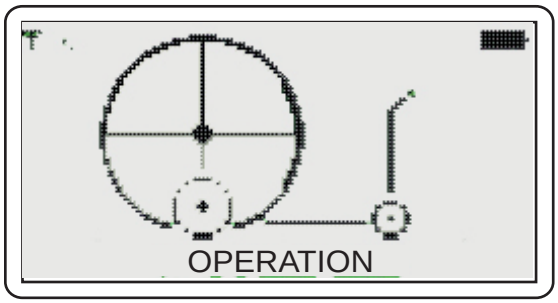


3.2. HOW TO ACCESS MENU (General Procedure)

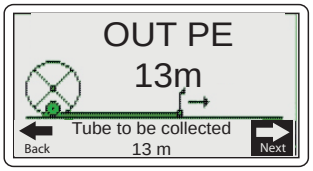
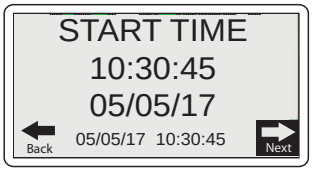
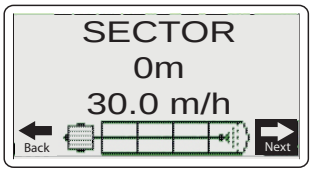
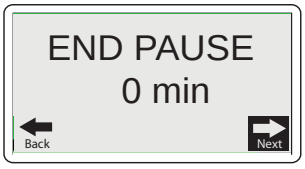
To access menu and parameters to set-up the console you ave to perform only three actions:	
• Turn clockwise (cw): to scroll-up a menu, to increase a parametr's value, to focus an editable value o a software key i.e **"NEXT", "BACK"**, etc.	
• Push the knob to confirm and access the desired menu.	
PASSWORD protected menu	
• If the menu is password-protected, the label "PASSWORD" appears, under which the characters making up the necessary password must be entered.	• Push the knob: the first character will become **"0*"**, meaning that the character is now editable. • Change the character by turning the knob cw or ccw. • Confirm the selected character by Pushing the knob. • Position the focus on the next space by turning the knob cw or ccw. • Repeat steps b) to d) until the last character has been entered, then position the focus on **NEXT** and push the knob.
• If the password is correct the console will show the first value of the menu parameter; otherwise, it will remain at the password menu.	
• To exit this menu, position the focus on **"ESC"** and push the knob or focus **"NEXT"** and hold down the knob for 5s	

3.3. MENU FUNCTIONS

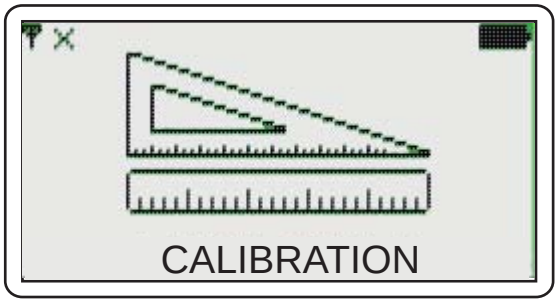
OPERATION MENU



To perform an irrigation you have to set the following parameters:

OUT PE Allows the user to set or correct the length of unwounded hose.	
START TIME Allows the user to set the irrigation cycle (time an date).	
START PAUSE Allows static irrigation of the initial header - THERE IS NO CARRIAGE RETURN	
	TYPE REG.E It allows choosing the irrigation measuring unit. **NOTE: This parameter is OPTIONAL**
SECTOR Allows the user to set the retrieval speed	
END PAUSE Allows static irrigation of the final header.	
STOP TIME Allows the user to set the irrigation end time, retrieval speed and time duration of pauses were automatically recalculated.	

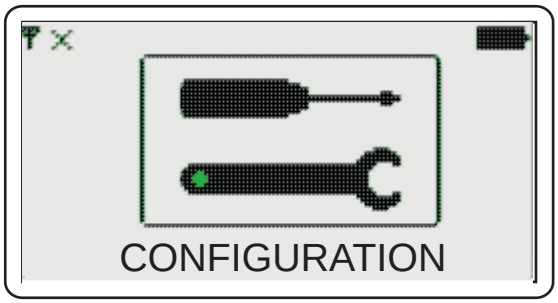
CALIBRATION



This menu allows to set the calibration parameters of the machine.

NOTE: The calibration menu is protected by a PASSWORD.
Accessible only to the hose reel's manufacturer.

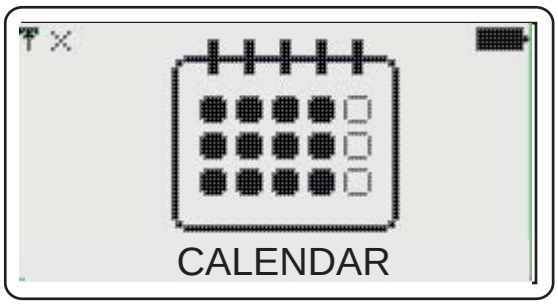
CONFIGURATION



This menu allows to set the configuration parameters of the console.

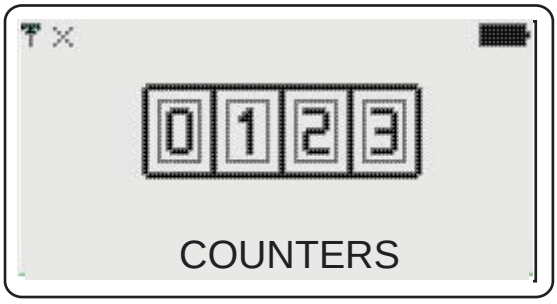
NOTE: The configuration menu is protected by a PASSWORD.
Accessible only to the hose reel's manufacturer.

CALENDAR



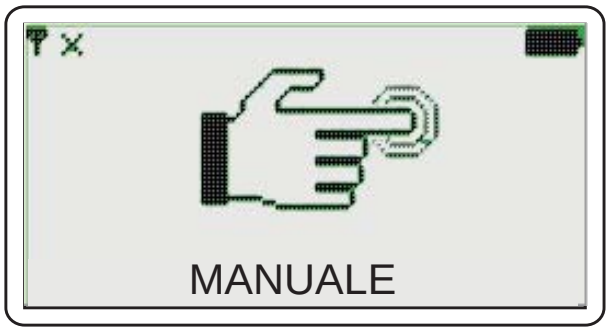
This menu allows to set the **DATE/TIME** of the console.

COUNTERS

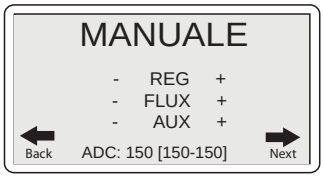
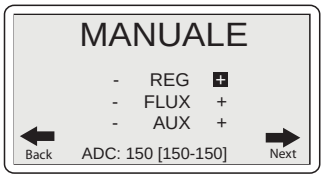
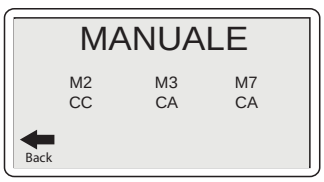


This menu allows to control the partial and total work COUNTERS.

MANUALE

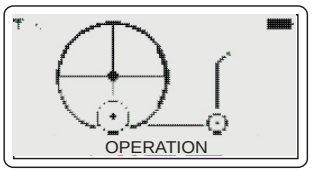


This menu lets you manage the adjustment motors manually.

• Position the **FOCUS** on the **MANUAL**menu. • Press the knob to confirm. • The display will show:	
• To increase/decrease the values, position the FOCUS on the value to be changed. • Press the knob. • Turn the knob to change the value. • By way of example, the display will show:	
• Position the FOCUS on **NEXT** to run the sensor **TEST**. • By way of example, the display will show:	
• Position the FOCUS on **BACK** to return to the previous menu.	

4. PROGRAMMING EXAMPLE OF AN IRRIGATION (STANDARD) *(without parameter (TYPE REG.))*

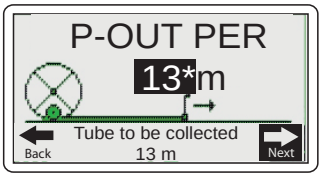
- Position the FOCUS on the **OPERATION** menu.
- Push the knob to confirm.
- The display indicates whether the previous cycle has been completed.



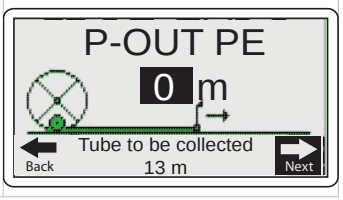
4.3.1. OUT PE PARAMETER (EVO1 - EVO4)

1. If the value is not 0, RESET the value as follows:

- Position the FOCUS on the value.
- Push the knob (or hold down for 5s).
- Turn the knob ccw reset the value.
- Push the knob to confirm.

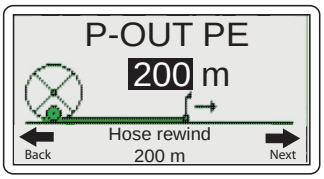


- The following is an example of that which appears on the display:

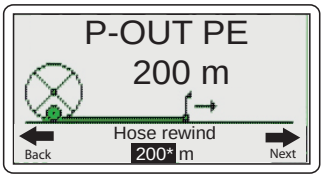


2. After having reset the value, start unwinding the hose.

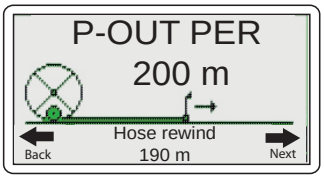
- The following is an example of that which appears on the display upon completion of the operation:



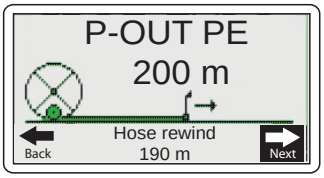
- VIf less metres than those unwound are to be wound, position the focus on the value (pipe to be wound).
- Push the knob to confirm.



- Turn the knob to set the metres that are to be wound.
- Push the knob to confirm.
- The following is an example of that which appears on the display:



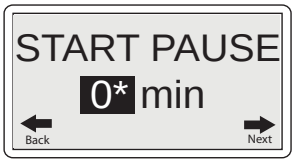
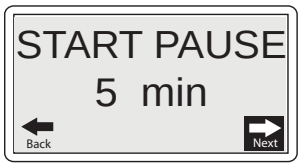
- Position the focus on NEXT to move on to the next parameter: **START TIME**.
- Push the knob to confirm.



4.3.2. START TIME PARAMETER (EVO1 - EVO4)

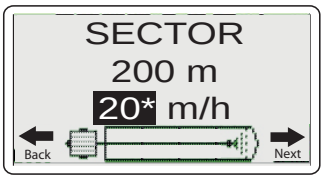
• Position the focus on the minutes and/or hour value to modify the start time. • Push the knob to confirm	
• Turn the knob to modify the value • Push the knob to confirm.	
• The following is an example of that which appears on the display:	
• Position the focus on **NEXT** to move on to the next parameter: **START PAUSE**. • Push the knob to confirm.	

4.3.3. START DELAY PARAMETER (EVO1 - EVO4)

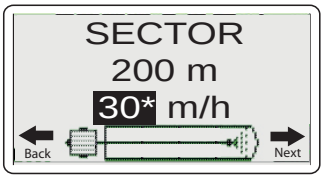
• Position the focus on the parameter to modify the value. • Push the knob to confirm. • Turn the knob to modify the value.	
	
• The following is an example of that which appears on the display once the value is modified: • Push the knob to confirm.	
• Position the focus on **NEXT** to move on to the next parameter: **SECTOR**. • Push the knob to confirm.	

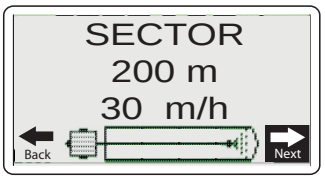
4.3.4. SECTOR PARAMETER (EVO1)

- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.



- The following is an example of that which appears on the display once the value is modified:
- Push the knob to confirm.

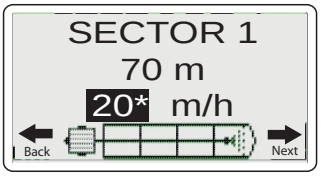




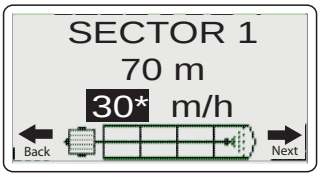
NOTE: the cycle end time is automatically set when the retrieval speed is set.

4.3.5. SECTOR PARAMETER (EVO 4)

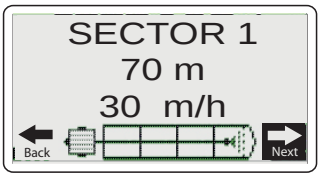
- To change the value of the length of the sector and/or retrieval speed place the focus on the parameter of interest.
- Push the knob.
- Rotate the knob to change the value of the parameter.



- When the value has been changed, the display shows, for instance:
- Push the knob to confirm.
- **NOTE: by setting the** retrieval **speed, the end time of the cycle is set automatically.**

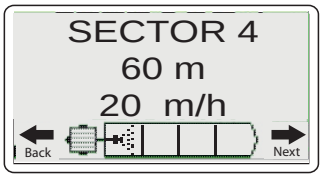


- Position the focus on NEXT to go to **SECTORS 2 - 3**.
- Push the knob to continue.

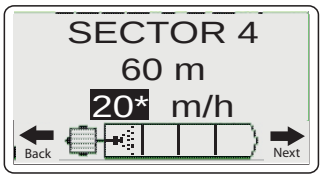


Once arrived at **SECTOR 4**, the console automatically sets the last metres of pipe to rewind.

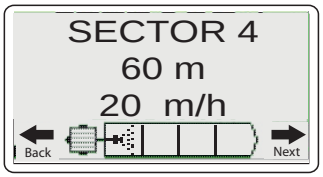
- Example:
- Pipe to rewind 200 m
- SECTOR 1 = 70 m
- SECTOR 2 = 30 m
- SECTOR 3 = 40 m
- **SECTOR 4 = 60 m**



- To change the value of the speed place the focus on the parameter.
- Push the knob.
- Rotate the knob to change the value of the parameter.



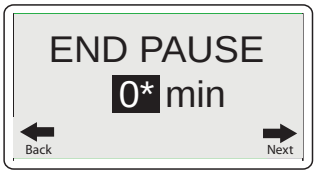
- Position the focus on **NEXT** to go to the next parameter **PAUSE END**.
- Push the knob to confirm.



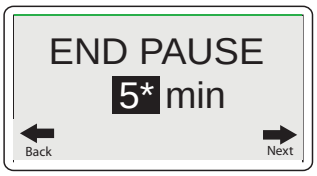
NOTE: To rewind the pipe as a single SECTOR, reset the values of the first 3 SECTORS using SECTOR 4 as the only SECTOR.

4.3.6. END PAUSE PARAMETER (EVO1 - EVO4)

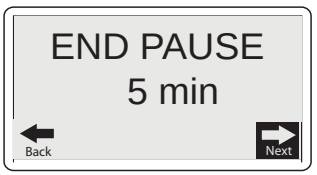
- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.



- The following is an example of that which appears on the display once the value is modified:
- Push the knob to confirm.



- Position the focus on **NEXT** to move on to the next parameter: **STOP TIME**.
- Push the knob to confirm.



4.3.7. STOP TIME PARAMETER (EVO1 - EVO4)

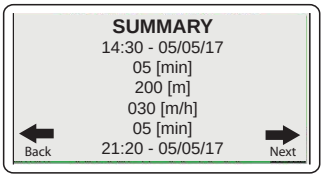
- **<u>NOTE:</u> The time suggested by the console is automatically calculated according to the previously set parameters.**

- Position the focus on the minutes and/or hour value to modify the end time.
- Push the knob to confirm.
- Turn the knob to modify the value.
- Push the knob to confirm.

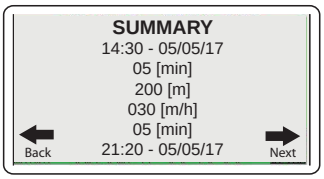
- Position the focus on **NEXT** to move on to the **SUMMARY** screen.
- Push the knob to confirm.
- **<u>NOTE:</u> Setting the irrigation end time will automatically vary the retrieval speed, start pause and end pause parameters.**

4.3.8. PERFORMING THE IRRIGATION (EVO1)

- Once all the work cycle parameters are set, a **SUMMARY** of the parameters appears on the display and the following is an example:

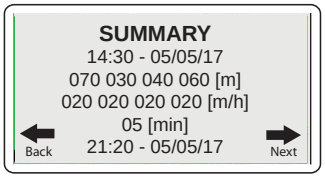


- If the values of the parameters are correct, position the focus on **NEXT**.
- Push the knob for 5 seconds to start the irrigation cycle.

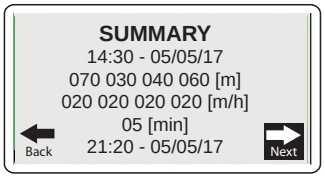


4.3.9. PERFORMING THE IRRIGATION (EVO4)

- Once all the work cycle parameters are set, a **SUMMARY** of the parameters appears on the display and the following is an example:

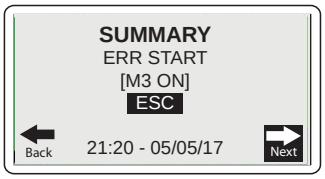


- If the values of the parameters are correct, position the focus on **NEXT**.
- Push the knob for 5 seconds to start the irrigation cycle.



!!! ATTENTION !!!

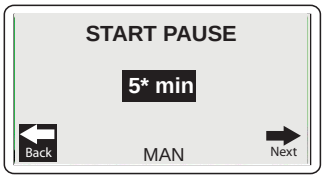
- If the console signals an **ERROR**, it means that the end of operation sensor is active.
- Deactivate the end of operation sensor to start the irrigation cycle.



4.3.10. DURING THE IRRIGATION

- Once the irrigation cycle begins, the console mode is set to START PAUSE (if configured), and the following is an example of that which appears on the display:
- Position the focus on the value if the parameter is to be modified.
- Push the knob for 5 seconds to confirm.
- The following is an example of that which appears on the display:
- Turn the knob to modify the value.
- Push the knob to confirm.

- Once the **START PAUSE** cycle ends, the console displays the following in alternating mode:
  - Final Pause
  - Retrieval speed
  - End Time
  - Sector
  - **Position the focus on the values to stop the alternating mode.**



4.3.11. INTERRUPTING / RESTARING THE IRRIGATION

INTERRUPTING:

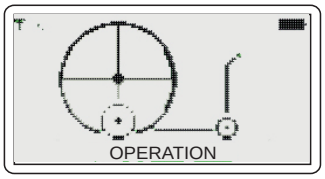
- Position the focus on **STOP.**
- Push the knob for **5** seconds to confirm.
- The console controls the valves that interrupt the cycle.
- **A)** closes/opens the **FLUX** valve (if inlet7discharge).
- **B)** opens the **BYP** valve in nil speed conditions.

RESTARTING:

- Position the focus on **STOP.**
- Push the knob for 5 seconds to confirm.
- The console controls the valves that interrupt the cycle.
- **A)** closes/opens the **FLUX** valve (if inlet7discharge).
- **B)** opens the **BYP** valve in nil speed conditions.

4.1. PROGRAMMING AN IRRIGATION (STANDARD) (with parameter (TIPO REG.))

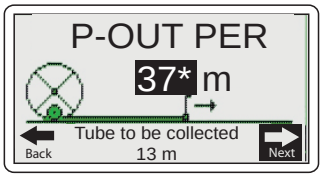
- Position the FOCUS on the **OPERATION** menu.
- Push the knob to confirm.
- The display indicates whether the previous cycle has been completed.



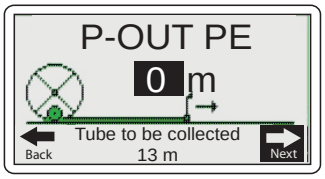
4.1.1. P.OUT PE PARAMETER (EVO1 - EVO4)

1. If the value is not 0, RESET the value as follows:

- Position the FOCUS on the value.
- Push the knob.
- Turn the knob to reset the value.
-
- Push the knob to confirm.

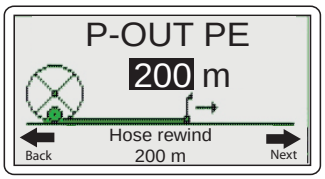


- The following is an example of that which appears on the display:

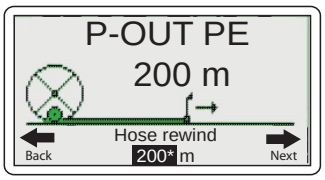


2. After having reset the value, start unwinding the hose.

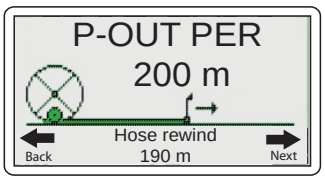
- The following is an example of that which appears on the display upon completion of the operation:



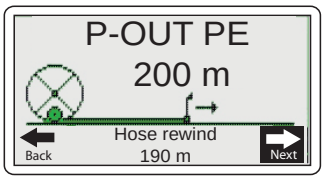
- VIf less metres than those unwound are to be wound, position the focus on the value (pipe to be wound).
- Push the knob to confirm.



- Turn the knob to set the metres that are to be wound.
- Push the knob to confirm.
- The following is an example of that which appears on the display:



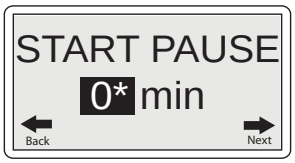
- Position the focus on **NEXT** to move on to the next parameter: **START TIME**.
- Push the knob to confirm.



4.1.2. START TIME PARAMETER (EVO1 - EVO4)

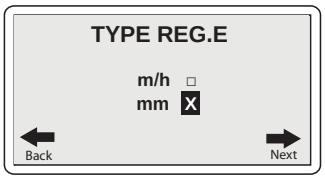
• Position the focus on the minutes and/or hour value to modify the start time. • Push the knob to confirm	
• Turn the knob to modify the value • Push the knob to confirm.	
• The following is an example of that which appears on the display:	
• Position the focus on **NEXT** to move on to the next parameter: **START PAUSE**. • Push the knob to confirm.	

4.1.3. START PAUSE PARAGRAPH (EVO1 - EVO4)

• Position the focus on the parameter to modify the value. • Push the knob to confirm. • Turn the knob to modify the value.	
	
• The following is an example of that which appears on the display once the value is modified: • Push the knob to confirm.	
• Position the focus on **NEXT** to move on to the next parameter: **SECTOR**. • Push the knob to confirm.	

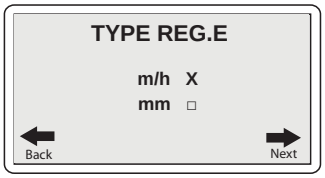
4.1.4. TYPE REG.E (EVO1 - EVO4)

- The symbols shown on the side of the measuring unit indicate which measuring unit is active.
- Simbol **X** = **Active**
- Simbol □ = **Deactive**
- Position the focus on the unit measuring type to set up.
- Push the knob to confirm.
- Position the focus on **NEXT** to move on to the next parameter:



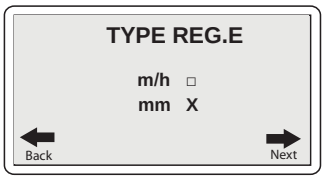
Measuring unit m/h (tf/h) (speed of the cart).

- Refer to **SECTOR PARAMETER PAG.10** starting from point 5 when choosing measuring unit m/h (ft/h)
- Position the focus on **NEXT** to move on to the next parameter.:



MEASURING UNIT mm (mil)

- When choosing measuring unit **mm (mil)**, proceed as follows.
- Position the focus on **NEXT** to move on to the next parameter:



4.1.5. NOZZLE PRESSURE PARAMETER

- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.

- The following is an example of that which appears on the display once the value is modified:
- Push the knob to confirm.

- Position the focus on **NEXT** to move on to the next parameter: **NOZZLE**.
- Push the knob to confirm.

4.1.6. NOZZLE (GUN) PARAMETER

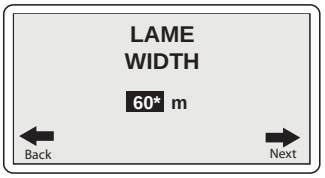
- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.

- The following is an example of that which appears on the display once the value is modified:
- Push the knob to confirm

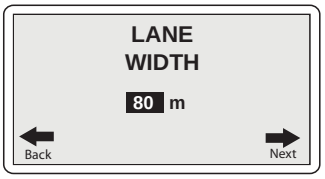
- Position the focus on **NEXT** to move on to the next parameter: **LANE WIDTH**.
- Push the knob to confirm.

4.1.7. LANE WIDTH PARAMETER

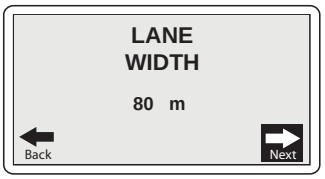
- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.



- The following is an example of that which appears on the display once the value is modified:
- Push the knob to confirm

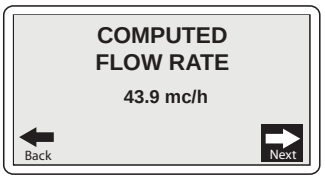


- Position the focus on **NEXT** to move on to the next parameter: **LANE WIDTH**.
- Push the knob to confirm.



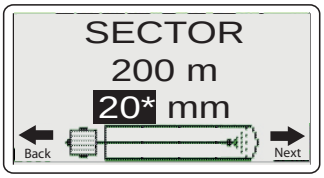
4.1.8. COMPUTED FLOW RATE PARAMETER

- The menu calculates the capacity in **mc/h (gal/min)**.
- Position the focus on **NEXT** to move on to the next parameter: **SECTOR**.

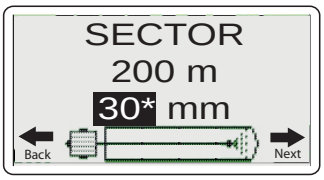


4.1.9. SETCTOR PARAMETER (EVO1)

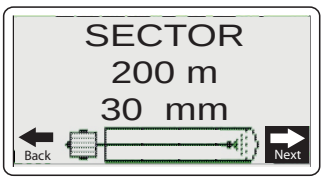
- Position the focus on the parameter to modify the value.
- Push the knob to confirm.
- Turn the knob to modify the value.



- The following is an example of that which appears on the display once the value is modified:



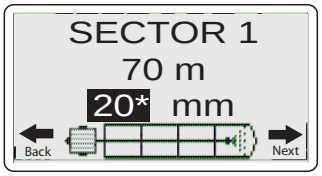
- Push the knob to confirm.



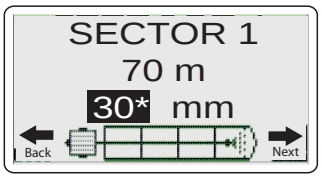
- **<u>NOTE: the cycle end time is automatically set when the retrieval speed is set.</u>**

4.1.10. SECTOR 1 - 2 - 3 PARAMETER (EVO 4)

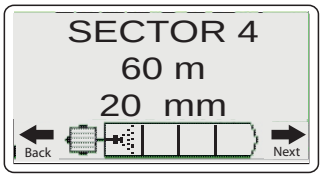
- To change the value of the length of the sector and/or speed place the focus on the parameter in which you are interested in.
- Push the knob.
- Rotate cw or ccw the knob to adjust the value of the parameter.



- When the value has been changed, the display shows, for instance:
- Push the knob to confirm.
- **<u>NOTE: by setting the retrieval speed, the end time of the cycle is set automatically.</u>**



- Position the focus on **NEXT** to go to **SECTORS 2 - 3 - 4**.
- Push the knob to continue.

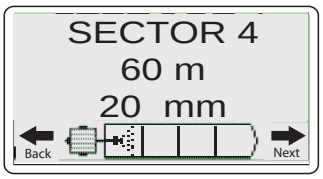


Once arrived at **SECTOR 4**, the console automatically sets the remaining length to be rewind.

- Example:

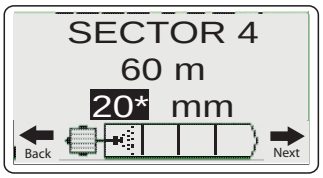
Total lenght to rewind **200 m**

SECTOR 1 = 70 m
SECTOR 2 = 30 m
SECTOR 3 = 40 m
SECTOR 4 = 60 m

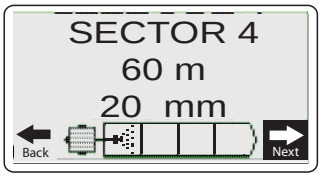


To change the value of the speed place the focus on the parameter.

- Push the knob.
- Rotate cw or ccw the knob to adjust the value of the parameter.

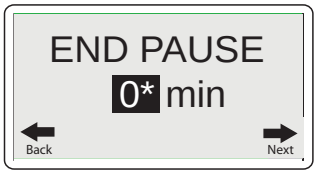
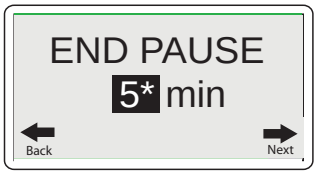
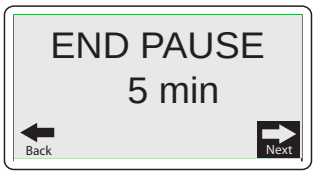


- Position the focus on NEXT to switch to **PAUSE END**.
- Push the knob to confirm.



NOTE: To rewind the pipe as a single SECTOR, reset the values of the first 3 SECTORS using SECTOR 4 as the only SECTOR.

4.1.11. END PAUSE PARAMETER (EVO1 - EVO4)

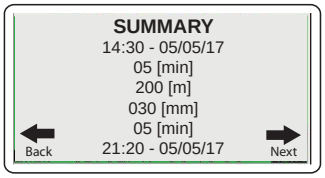
• Position the focus on the parameter to modify the value. • Push the knob to confirm. • Turn the knob to modify the value.	
• The following is an example of that which appears on the display once the value is modified: • Push the knob to confirm.	
• Position the focus on **NEXT** to move on to the next parameter: **END TIME**. • Push the knob to confirm.	

4.1.12. PARAMETRO ORA FINE (EVO1 - EVO4)

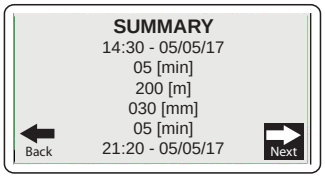
• **<u>NOTE:</u> The time suggested by the console is automatically calculated according to the previously set parameters.**	
• Position the focus on the minutes and/or hour value to modify the end time. • Push the knob to confirm. • Turn the knob to modify the value. • Push the knob to confirm.	
• Position the focus on **NEXT** to move on to the **SUMMARY** screen. • Push the knob to confirm. • **<u>NOTE:</u> by setting the retrieval speed of the hose, the end time of the cycle is set automatically.**	

4.1.13. PERFORMING THE IRRIGATION (EVO1)

- Once all the work cycle parameters are set, a **SUMMARY** of the parameters appears on the display and the following is an example:



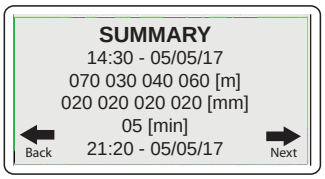
- If the values of the parameters are correct, position the focus on **NEXT**.
- Push the knob for 5 seconds to start the irrigation cycle.



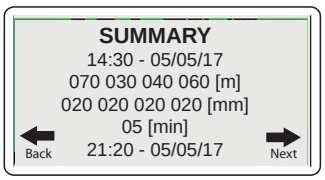
- The console mode is ready for all the operations of the previously set cycle to be performed.
- The following is an example of that which appears on the display

4.1.14. ESECUZIONE DEL CICLO DI IRRIGAZIONE (EVO4)

- Once all the work cycle parameters are set, a **SUMMARY** of the parameters appears on the display and the following is an example:



- If the values of the parameters are correct, position the focus on **NEXT**.
- Push the knob for 5 seconds to start the irrigation cycle.

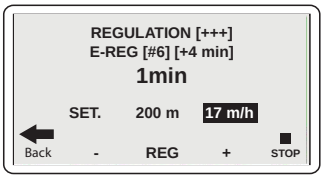


- The console mode is ready for all the operations of the previously set cycle to be performed.
- The following is an example of that which appears on the display

4.1.15. RETRIEVAL SPEED ADJUST

- Once irrigation cycle has started check to the actual retrieving speed.
- Position the focus on the **mm (mil)** value.
- Push the knob for 5 seconds.

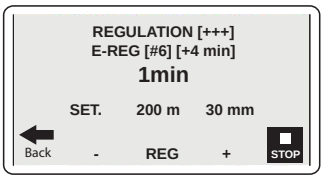
- The display shows how many **m/h (ft/h)** retrieval speed should be.
- **The function can be useful to the operator to select the correct change ratio.**
- To return to the mm (mil) value push the knob for 5 seconds.



4.1.16. INTERRUPTING / RESTARTING THE IRRIGATION

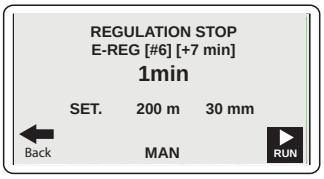
INTERRUPTING:

- Position the focus on **STOP**.
- Push the knob for 5 seconds.
- The console activates the valves to stop the irrigation cycle.
- **A)** closes/opens the **FLUX** valve (if inbound/ if discarge).
- **B)** opens the **BYP** valve in nil speed conditions.



RESTARTING:

- Position the focus on **RUN.**
- Push the knob for 5 seconds to confirm.
- The console activates the valves to restart the irrigation cycle.
- **A)** opens/closes the **FLUX** valve (if inbound/ if outbound).
- **B)** activates the **BYP** valve to adjust the return speed.



4.2. CALIBRATING THE MACHINE

!!! WARNING !!!

The calibration menu is password-protected.

It is only accessible to the manufacturer.

4.3. CONFIGURING THE MACHINE

!!! WARNING !!!

The configuration menu is password-protected.

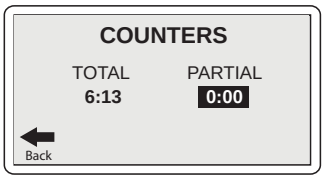
It is only accessible to the manufacturer.

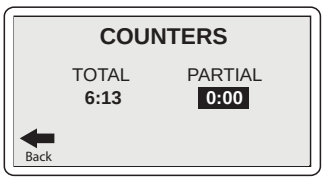
4.4. CALENDAR SETTING

- Position the FOCUS on **CALENDAR** in the main menu.
- Push the knob to confirm.
- Position the focus on the value that is to be modified.
- Push the knob to confirm.
- Turn the knob to the left or right to modify.
- Push the knob to confirm.
- Position the FOCUS on **BACK** to exit the menu.
- Push the knob to confirm.

4.5. COUNTERS CHECK AND RESET

- Position the FOCUS on **COUNTERS** in the main menu.
- Push the knob to confirm.
- Position the FOCUS on the **PARTIAL** value.
- Push the knob for about 10 seconds to reset the partial value.
- Position the FOCUS on **BACK** to exit the menu.
- Push the knob to confirm.
- **NOTE:** The **TOTAL** counter cannot be reset.





5. WORK PARAMETERS

The characteristic parameters of the console can be set by the user at the beginning and/or during an irrigation cycle and are summarized in the table below.

IRRIGAMATIC EVO1					
NR	**PARAMETER**	**DESCRIPTION**	**UM**	**RANGE**	**DEFAULT**
1	P. OUT PE	Total length of unwound hose	m (ft)	0...1500 (0...4919)	
2	START TIME	Time when the irrigation cycle should begin (system based on RTC, with self increasing date)	hh:mm	0...23:59	Present time
3	START PAUSE	Starting interval for irrigation on field edges (v = 0 => BYP open)	m	0...120	
4	SECTOR	Length of the unwound tube	m	0 P. OUT PE	
5	RETRIEVAL SPEED	Retrieval speed of the gun cart	m/h (ft/h)	4...850 (13..2788)	
6	FINAL PAUSE	Lasted final pause	min.	0...120	
7	END TIME	Time calculated based on 1)...5)	hh:mm		*calculated modifiable

IRRIGAMATIC EVO4					
NR	**PARAMETER**	**DESCRIPTION**	**UM**	**RANGE**	**DEFAULT**
1	P. OUT PE	Total length of unwound hose.	m (ft)	0...1500 (0..4919)	
2	START TIME	Time when the irrigation cycle should begin (system based on RTC, with self increasing date)	hh:mm	0...23:59	Present time
3	START PAUSE	Starting interval for irrigation on field edges (v = 0 => BYP open)	m	0...120	
4	SECTOR 1	Length of the unwound tube	m	P. OUT PE	
5	SPEED OF RETURN SECTOR 1	Speed for trolley return for a single sector available	m/h	4...850 (13..2788)	
6	SECTOR 2	Length of the unwound tube	m	P. OUT PE	
7	SPEED OF RETURN SECTOR 2	Speed for trolley return for a single sector available	m/h	4...850 (13..2788)	
8	SECTOR 3	Length of the unwound tube	m	P. OUT PE	
9	SPEED OF RETURN SECTOR 3	Speed for trolley return for a single sector available	m/h	4...850 (13..2788)	
10	SECTOR 4	Length of the unwound tube	m	P. OUT PE	
11	SPEED OF RETURN SECTOR 4	Speed for trolley return for a single sector available	m/h	4...850 (13..2788)	
12	FINAL PAUSE	Lasted final pause	min.	0...120	
13	END TIME	Time calculated based on 1)...11)	hh:mm	*calculated modifiable	*calculated modifiable

5.1. PASSWORD-PROTECTED USER PARAMETERS (PASSWORD 1 1 1 1)

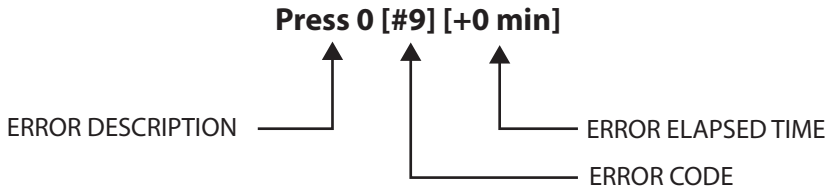
#	Description	Range	Default	UM
1	Position of the flow valve.	inlet discharge	0	
18B	Angular coefficient of the characteristic kmh/Hz of the anemometer. * The value has to be multiplied by 10 to one dot precision.	[10;100]	62	kmh/Hz
18C	Wind alarm trigger level (kmh). *	[5;50]	15	kmh
18D	Wind alarm trigger delay (both activation and deactivation). *	[5;50]	5	s
47	Measure units in use	0 = EU 1 = UK 2 = US	0	flag
48	Language	0 = italiano 1 = inglese 2 = tedesco 3 = francese 4 = spagnolo 5 = polacco 6 = sloveno 7 = giapponese	0	flag
57	Sets the automatic turn-off time at the end of work.	[0;240] (0 = disabilet)	0	min.
58	Hose length to be pulled-out (set via SMS) to trigger a GSM alert.	[0;1500]	100	m (ft)
61	Auxiliary gearmotor output operating mode	0 = return to space 1 = return to time 2 = final pause time	0	flag
62A	Hose length to be retrieved to trigger the auxiliary “forward” gearmotor (auxiliary irrigator valve opening). This parameter will visible only if #61 has been set 0 or 1.	[0;1500]	250	m
62B	Hose length to be retrieved to trigger “the auxiliary gearmotor (auxiliary irrigator valve closing). This parameter will visible only if #61 has been set to 0.	[0;1500]	250	
63	Auxiliary irrigator activation timer. When this timer has elapsed the auxiliary gear-motor closes the valve of the auxiliary irrigator. This parameter will visible only if #61 has been set 1 or 2.	[0;1440]	0	min.
64	Hose length to be pulled-out to trigger the relay output	[0;1500] (0 = disabilet)	0	m
65A	Low pressure alarm override timer (min). It allows to ignore a low pressure alarm at irrigation start. Once it has elapsed the low pressure alarm delay will be 5s.	[0;120]	0	min
65B	It allows to exclude the flux valve actiovation in case of a low pressure alarm.	0 = not included 1 = excluded	0	Flag

*** VISIBLE ONLY IF THE ACCESSORY HAS BEEN CONFIGURED BY THE OEM**

6. ERROR MESSAGES

The console contains a list of the last 6 error conditions that can arise.

The error messages appear on the first row of the display as follows.



The errors that can occur during a work cycle together with the relative messages are provided in the table below.

The list of events indicates a sequence of errors that helps the servicing personnel reconstruct the events if a fault arises.

#	Type	Description	Condition	Correction	Lo-cking	Sospension	Display
1	SC on flow valve	A short circuit has been detected on the flow valve.			YES	NO	FLUX CC
2	Timeout on flow valve opening	The limit time for flow valve opening has been exceeded (par. C#2 or par. C#4).			NO	NO	F L U X Tm-0
3	Timeout on flow valve closing	The limit time for flow valve closing has been exceeded (par. C#2 or par. C#4).			YES	NO	F L U X Tm-#
4	CC on bypass valve	A short circuit has been detected on the flow valve.			NO	NO	REG CC [#4]
5	Timeout on bypass valve opening				YES	NO	R E G Tm-0
6	Speed adjustment limit	End of stroke reached for bypass valve without reaching the required speed.			NO	NO	E - R E G [#6]
7	Gun cart retrieval speed “zero”.	No pulses for some time (par. C#8 or par. C#9).		Bypass closing trying to increase the retrieval speed	NO	YES	CARR ?? ???

#	Type	Description	Condition	Correction	Lo-cking	Sospension	Display
8	Rain or wind	The cycle is suspended for as long as the alarm persists	Valid only if the rain or wind sensor is provided (par. C#18) and if no time comPushion has been carried out.		NO	YES	ALL PV
9	Low pressure	Inadequate pipe pressure detected*. *dependent on pressure switch calibration (MaterMacc standard: 2 bar)	Valid only if the sensor is provided (par. C#13).	If the flow valve is located on the input and the pressure switch is located down from the flow valve (par. C#13), the cyclical emergency check should be performed* *Once the flow valve has been closed, wait for the programmed time (par. C#12), then open the valve. This process runs cyclically until the pressure returns or the user intervenes manually. In all other cases, suspend the cycle.	NO	Yes (waiting for Pushure to return)	PRESS 0
						SI	PRESS 0
10	Limit time exceeded	Triggered when the time for end of work has come and , the cycle is not over yet.	Only if a time comPushion has been carried out.		NO	YES	E-Tm
11	No pulses on safety input (terminal M12)	No monitoring pulses for time set during configuration (para.C#67).			NO	YES	MOV
12	Error of end of winding up.	The alarm is triggered by the signal of end of winding up with a length of the tube different from 0.	The alarm is released only if the sensor of end of winding up is provided (par. C#17).		NO	NO	???

7. USING THE GSM/GPRS MODULE (OPTIONAL)

The following applies only if the IRRIGAMATIC EVO console used supports the GSM/GPRS module.
The user is reminded that consoles in the EVO series are pre-configured to support the GSM/GPRS module.
However, the option to enable the module is reserved to the console manufacturer.
The following applies only to consoles with an ENABLED GSM module.

7.1. SIM CARD ASSEMBLY INSTRUCTIONS

- Disconnect the console from the power source
- Insert the SIM card into the SIM-holder, plug the GSM/GPRS module to its 50 pin connector.
- Connect the console to the power source.
- Switch on the console.
- Check whether the GSM/GPRS module is active (cf. parameter # of the user menu).
- Wait for the GSM/GPRS module to initialise.
- Check for network coverage.

7.2. MANAGING THE PHONEBOOK

Telephone numbers and respective details are stored in the device's internal memory. As a result, it is not necessary to reprogram the phonebook if the SIM card is replaced.
The phonebook is managed via SMS commands, and can contain up to 5 phone numbers.
Each user is assigned a name, number and status.

Position in Contact list	Name	Number	Status
1	Antonio	+393491234567	ON
2	Paolo	+393471234567	OFF
3	-	-	-
4	Leonardo	+3933987654321	ON
5	-	-	-

7.3. ADDING A NUMBER TO THE PHONEBOOK

SMS di scrittura WPBn(name, number, status)

Position in Contact list	Name	Number	Status

Example:

To add the user "Antonio", with phone number "+393491234567" in the first position, send the following SMS message:

WPB1(Antonio,+393491234567,ON)

!! WARNING !!

The user phone number should always be preceded by the country dialling code (e.g.+39 for Italy)
SMS messages should always be written in UPPER CASE

7.4. DELETING A NUMBER FROM THE PHONEBOOK

To delete a user from the list, simply send a write message with no content between the brackets.

Example: to delete the user in the second position of the list.

SMS to be sent WPB2( )

7.4.1. ENABLING/DISABLING OF A USER

Each user in the list can be enabled or disabled independently.

Status SMS WPBSn(status)

Position of the user in the list **(1 ÷ 5)**

User status **- ON** = enabled
- OFF = disabled

Example: disabling messages to the user in first position on the list.

SMS to be sent WPBS1(OFF)

To re-enable messages.

SMS to be sent WPBS1(ON)

7.4.2. READING THE PHONEBOOK

To view the contents of the phonebook and the status of each user, simply send the following read command to the device.

SMS to be sent RPB

On receiving this command, the device returns an SMS in the following format:

SMS received #1_name1_number1_status,#2 name2_ number2_status2 etc.

Example of SMS received

#1_Antonio_+393491234567_ON
#2_Paolo_+393471234567_OFF
#3_ _ _OFF
#4_Leonardo_+393481234567_ON
#5_ _ _OFF

7.4.3. QUERYING THE MACHINE STATUS

Write an SMS on your mobile phone containing the text "INF".

- Send the SMS to the control unit which will reply with the relevant SMS.

Irrigamatic <evo>
ST=<state>
S=<speed>*
L=<tube length>*
EP=<end pause duration>*
END=<end time>*

Example: request for INF,

- Write an SMS containing the text "INF"
- Send the SMS to the control unit

Irrigamatic EVO1

ST=WORKING

S=36.0 m/h

L=0 m

EP=1 min

END=10/02/17 09:06:40

7.4.4. QUERYING THE RETRIEVAL SPEED

- Compose the message **RSC** on a mobile phone
- Send the SMS to the console, which replies with a corresponding SMS.

Example RSC query

- Compose the message **RSC**.
- Send the SMS to the console
- The console replies with, for example: S1_30m/h.

Interpreting the message

S1 = current sector 1
30m/h = return speed set by Sector1

7.4.5. CHANGING THE CURRENT RETRIEVAL SPEED

Commands affecting the regulation parameters of the machine are to be used exclusively when in view of the machine (10...15m).

The machine regulation MUST NOT be changed if the machine is not in view

Compose the message **WSC** on a mobile phone.
Send the SMS to the console, which replies with a corresponding SMS.

Example of a **WSC** message.

- Compose the message **WSC1(35)**.
- Send the SMS to the console.

7.4.6. STARTING AND STOPPING THE MACHINE REMOTELY

The commands to start and stop the machine are to be used exclusively when in view of the machine (10...15m).

THE MACHINE MUST NOT BE STARTED WHEN NOT IN VIEW!

An operation cycle may be started by sending an SMS to the console.

To start an irrigation cycle

- Compose the SMS **START**.
- Send the SMS to the console.
- The console replies with an SMS indicatingsuccessful receipt of the command and time at which the SMS was sent:

START_OK_23-03-08_08:50:20

TO STOP IRRIGATION TEMPORARILY (standby/suspend)

- Compose the SMS **STOP.**
- Send the SMS to the console.
- The console replies with an SMS indicating successful receipt of the command and time at which the SMS was sent

STOP_OK_23-03-08_08:55:10

TO RESTART THE SUSPENDED CYCLE, USE THE START CONTROL

TO STOP IRRIGATION PERMANENTLY

- Compose the SMS **ALT**.
- Send the SMS to the console..
- The console replies with an SMS indicating successful receipt of the command and time at which the SMS was sent

ALT_OK_23-03-08_08:55:10

7.5. SMS COMMANDS

COMMANDE	REPLY	REMARKS
RGO	#<n>_<state>_<name>_<code> <n> operator's index up to max 10 <state> operator's state indicate the operator's state according to the following diagram: 0 = unknown 1 = available 2 = current 3 = prohibited <name> operator's name <Code> operator's code to be used in the WGO command to set the operator's data manually	This operation is rather long and requires at least 20 seconds.
WGO(<code>) **<Code> operator's code**	- - -	Sets the GSM operator manually. Be sure the code is written correctly.
RPB	#<index>_<name>_<numero>_<state> <Index> element index up to max 5 <name> element name <name> element number <State> element state indicates the element state: ON= active OFF=not active	
WPB<index>(<name>,<state>)<indice> element index up to max 5 <name> element name <name> element number <state> element state indicates the element state: **ON= active** **OFF=not active**		
WPB<index>(<name>,<state >) <index> element index up to max 5 <name> element name <name> element number <state> element state indicates the element state: **ON= active** **OFF = not active**		
WPBALLN<index>(< length >) <index> element index up to max 5 < length > length of the unwound hose indicates the length of unwound hose that determines the alarm condition.		If <index> refers to a nonpresent or non active user, the command is ignored. If this function is activated for a member of the list the same function will be deactivated for the previous active member of the same list.
RPBALLN	**RPBALLN_#<index>_<name>_<number>_<state>_<lenght>** <Index> element index up to max 5 <name> element name <name> element number <state> element state indicates the element state: **ON= active** **OFF=not active**	

COMMANDE	REPLY	REMARKS
INF	**<evo> board model** **the possible values are:** EVO1 = Evo1 model EVO4 = Evo4 model <state> system status the possible values are: OTHER = other STOP = machine stopped STARTING = start-adjustment operations TIME TO START = waiting for the start time TIME FOR MOTORMATIC = waiting for MM to start START PAUSE = initial pause in progress WORKING = machine being adjusted ENDING = end-adjustment operations END PAUSE = end pause in progress SUSPENDED = adjustment suspended EMERGENCY CYCLE = emergency cycle in progress ERROR = error **<speed> tube return speed** **<length> unwound tube length** **<end pause duration> duration of end pause** **<end time> expected work cycle end time**	
RSC	S<number_ >_<speed_o_height> <number_sector> sector in process <Speed_o_height> value of the set parameter	If the process is not active the reply is "S0".
WSC	- - -	You should expect a value exPushed in meters/feet or mm. This command does not update the time of end of the process.
START	**START_<result>_<date_time>** <result> result of the request The possible values are: OK = positive result KO = negative result **<Date_time> date and time of the system**	
STOP	**STOP_<result>_<data_time >** **<result> result of the request** **The possible values are:** OK = positive result KO = negative result **<Date_time> date and time of the system**	
ALT	ALT_<result>_<data_time > **<result> result of the request** **The possible values are:** OK = positive result KO = negative result **<Date_time> date and time of the system**	

COMMANDE	REPLY	REMARKS
WTS(<date>,<time>) < d a t a > d a t e i n f o rm a t DD/MM/YY <ora> time in format HH:MM:SS	**WTS_<Result>_<date_time>** **<Result> result of the request** **The possible values are:** **OK = positive result** **KO = negative result**	
WTS(<date>,<time>) < d a t a > d a t e i n f o rm a t DD/MM/YY <ora> time in format HH:MM:SS	**WET_< >_<date_time>** **<Result> result of the request** **The possible values are:** **OK = positive result** **KO = negative result**	

8. TEST

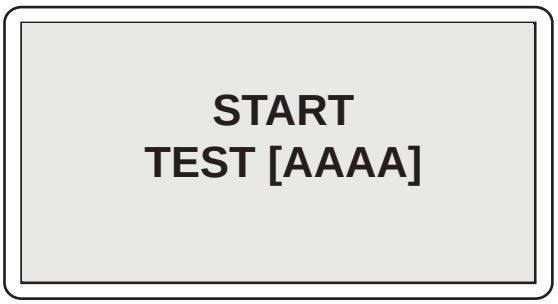
The Irrigamatic EVO allows the user to verify the functionality and status of all the inputs and outputs as well as the main devices (listed below) via a simple on site **TEST** procedure:

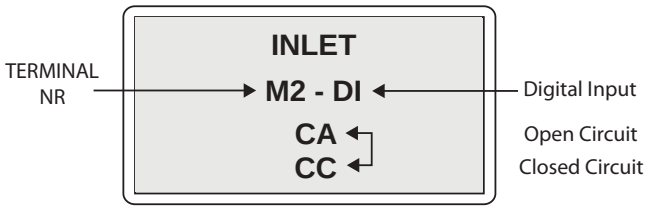
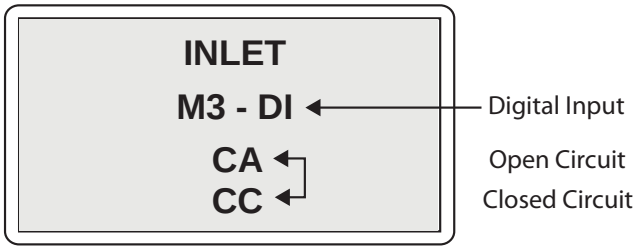
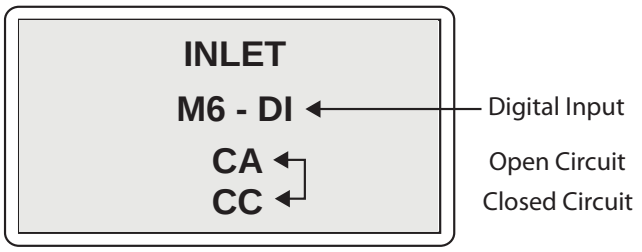
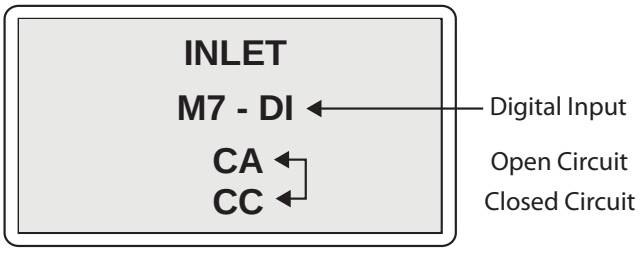
RTC, EEPROM, GSM (if installed).

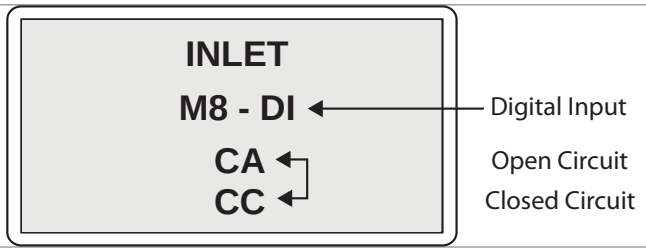
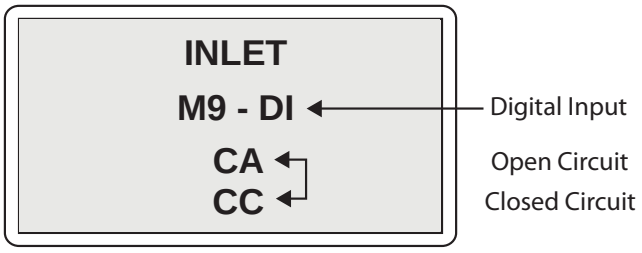
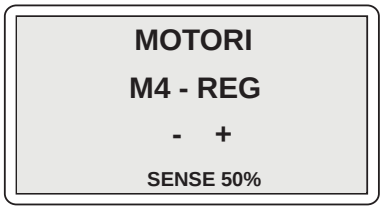
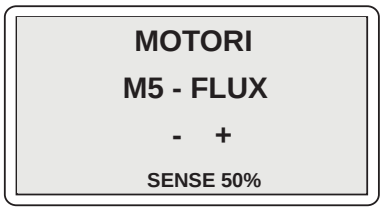
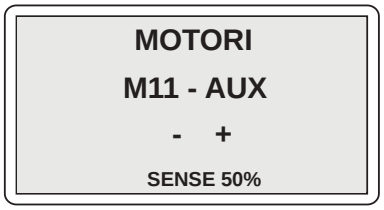
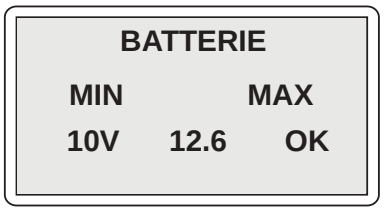
To perform the **TEST**, follow the instructions below:

Switch the console off.

Switch the console on via the ON/OFF key while keeping the main knob Pushed and wait for the following to appear on the display:



TEST	ACTION	DISPLAY
SPEED SENSOR (TERMINAL NO. 2)	If the TEST is NOT to be performed on this device, Push the knob when **ESC** appears on the display. Align the speed sensor with the pinion. If aligned, **CC** appears on the display. If NOT aligned, **CA** appears on the display. Once the device **TEST** is complete, Push the knob to proceed.	
WORK END SENSOR (TERMINAL NO. 3)	If the TEST is NOT to be performed on this device, Push the knob when **ESC** appears on the display. Align the sensor with the magnet or close the switch. If aligned, **CC** appears on the display. If NOT aligned, **CA** appears on the display. Once the device TEST is complete, Push the knob to proceed.	
UWIN END SENSOR (TERMINAL NO. 6)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Align the sensor with the magnet or close the switch. If aligned, **CC** appears on the display. If NOT aligned, **CA** appears on the display. Once the device TEST is complete, Push the knob to proceed.	
PushURE SWITCH (TERMINAL NO. 7)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. If the circuit is Pushurised, CC appears on the display. If the circuit is NOT Pushurised, CA appears on the display. Once the device TEST is complete, Push the knob to proceed.	

FLOW METER (TERMINAL NO. 8)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Displays a value to be compared with the technical specifications. Once the device TEST is complete, Push the knob to proceed.	
WIND - RAIN SENSOR (TERMINAL NO. 9)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. In the event of strong RAIN or WIND, CC appears on the display. Otherwise, CA appears on the display. Once the device TEST is complete, Push the knob to proceed.	
REG MOTOR (TERMINAL NO. 4)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Position the focus on + or - and Push the knob. Displays the value as ADC points of the absorbed current. Once the device TEST is complete, Push the knob to proceed.	
FLUX MOTOR (TERMINAL NO. 5)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Position the focus on + or - and Push the knob. Displays the value as a % of the absorbed current. Once the device TEST is complete, Push the knob to proceed.	
AUX MOTOR (TERMINAL NO. 11)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Position the focus on + or - and Push the knob. Displays the value asADC points of the absorbed current. Once the device TEST is complete, Push the knob to proceed.	
AUX OUTPUT (TERMINAL NO. 10)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Position the FOCUS on T. Push to activate the relay. Once the device TEST is complete, Push the knob to proceed.	
BATTERY (TERMINAL NO. 1)	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Displays the Min and Max and curren value of the battery voltage. Once the device TEST is complete, Push the knob to proceed.	

RTC	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Performs a communication test with the clock. Once the device TEST is complete, Push the knob to proceed.	
EEPROM	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Performs a memory reading and communication test. Once the device TEST is complete, Push the knob to proceed.	
GSM	If the TEST is NOT to be performed on this device, Push the knob when ESC appears on the display. Displays the GSM field as a %. Once the device TEST is complete, Push the knob to proceed.	
FINE TEST	Switch the console off and on again.	

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