EN

MaterMacc

USE AND MAINTENANCE MANUAL

Electronic control units for self-propelled sprinklers

IRRIGAMATIC B

IRRIGAMATIC NET

CE

instruction

Translation of the original instructions

Code 58331201
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MATERMACC S.r.l. a s.u.

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Index

1. INTRODUCTION

This manual describes how the of the equipment works and provides instructions on how to execute the main operations correctly, as well as ordinary and periodic maintenance.

This manual is divided into chapters which are easy to identify and consult.

The indications contained in this manual are intended for a professional user, who must have specific knowledge of the different ways of using the equipment and must be authorised, instructed and opportunely trained.

The use of original accessories and spare parts is recommended. Besides INVALIDATING THE WARRANTY, the use of non original spare parts could be dangerous and reduce the duration and performance of the machine.

1.1. COPYRIGHT

The copyright of this manual belong to the equipment Manufacturer. This manual contains texts, drawings and technical illustrations that cannot be disclosed or transmitted to third parties, in whole or partially, without prior written authorisation from the machine's manufacturer.

1.2. INFORMATION ABOUT THE MANUAL

This manual is to be considered an integral part of the machine and must accompany it if it is resold and until it is demolished.

In case of loss or damage to this manual, request a new copy from the manufacturer (insert manufacturer's name, address and telephone number) or from the dealer (insert dealer's name, address and telephone number).

	**This symbol indicates that it is necessary to pay maximum attention to the issue in question.**

1.3. MANUAL UPDATING

The information, descriptions and illustrations in this manual reflect the state of the machine at the time it is sold.

The Manufacturer reserves the right to make changes, at any time, to the equipment for commercial or technical reasons.

These alterations do not obligate the manufacturer to intervene on equipment sold up to that moment nor to consider this manual inadequate.

Any integration that the manufacturer considers appropriate to make at a later stage must be kept together with this manual and considered an integral part of it.

1.4. REVISING THE MANUAL

REV. 01 September 2021

2. WARRANTY

2.1. CONDITIONS OF WARRANTY

- On delivery, check that the equipment has not been damaged during transportation and that all accessories are present and intact.
- Any claims must be made in writing within 8 days of receipt.
- The warranty against any defects in the materials is valid for one year from the date the machine is delivered.
- The warranty does not include shipment expenses (the material travels at the risk of the addressee).
- Any damage caused to people or objects are excluded from the warranty.
- The warranty is limited to the repair or free replacement of the faulty part.
- The retailer and the user 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.).

2.2. WARRANTY INVALIDATION

- Besides the indications provided in the supply contract, the warranty is invalidated in the following cases:
- If the limits referred to in the technical data table or in other tables in the manual are exceeded.
- If the instructions described in this manual are not followed carefully.
- In case of incorrect use, faulty maintenance or mistakes made by the customer.
- If non-original spare parts are used.
- The contractual warranty is not applied if the above conditions are not respected, even only partially.
- The use of spare parts not approved by the manufacturer invalidates all warranties and releases the manufacturer or retailer from all liability for malfunctions or accidents.
- Removing or modifying the guards and protective devices releases the manufacturer from all liability for damage to objects or people.
- However, the manufacturer is available to ensure immediate and accurate technical support and all that may be necessary to ensure maximum performance and optimal operation of the equipment.
- The seal must be removed.

3. DECLARATION OF CONFORMITY

We declare that this product, in its manufacture and in the version that we have put into service, complies with the essential health and safety requirements of Directive **2014/30/EU**.

This declaration is void if the product has been modified without our express approval.

The Irrigamatic B-NET sprinkler controller is subject to the following **EU** standards:

EN ISO 14982:2009 Agricultural and forestry machinery – Electromagnetic compatibility.

4. SAFETY INFORMATION

For safe use of the equipment, please read these notes carefully beforehand:

- Carefully read all sections of the instruction manual for the equipment to be managed using the product;
- Do NOT allow minors, and persons with reduced physical, sensory or mental capabilities, to operate the equipment.
- Do NOT allow persons who lack experience, or knowledge of this product and its use, to operate it;
- Always adhere to the warnings and instructions specified on the equipment or provided with it;
- Always take maximum care when moving or transferring the equipment;
- Always place the equipment in a large enough area to allow maintenance;
- Do not install the equipment close to a heat source;
- Before cleaning, disconnect the power supply cable on the equipment;
- Use specific cleaning products such as multi-purpose sprays. Using products other than those recommended could cause damage or danger;
- Only use the power supply cable provided with the equipment;
- Do not position the equipment where the power supply cable could be trampled on;
- Do not rest any objects on the equipment.
- In the event of any of the situations listed below, immediately switch off the equipment and disconnect the power cable.
    - The equipment emits an unusual smell or noise;
    - The power supply cable is damaged or worn;
    - Liquid has been poured into the equipment;
    - Part of the of the equipment has been damaged;
    - Call the authorised support centre to resolve the issue.
- Operating the controller in any way may cause the moving parts of the machine to be actuated. Before operating the controller ***check that the machine is safe and that there are no objects, animals or persons within the operating area of the machine.***
- Commands to start and stop the machine or to change adjustment parameters remotely are only intended to be used after having checked that there are no hazards/impediments within the operating area of the machine.
- The Irrigamatic system must not be used unless all the required safety devices are present and efficient.
- Stand in a safe place while using the Irrigamatic NET - B controller.

4.1. TECHNICAL ASSISTANCE

For technical assistance or information, please contact MATERMACC S.p.A. Customer Service on +39 0434 85267 - email service@matermacc.it

5. INTENDED USE

The product was designed exclusively for use in the agricultural sector; the Manufacturer will not be held liable for installation and use of the product for purposes other than those for which it is intended.

The Manufacturer declines any responsibility for personal injury or damage to property due to non-compliance, or improper use of the product or any of its components. All risks resulting from any use other than that originally intended by the manufacturer are the responsibility of the user.

Proper use of the product also includes compliance with the conditions of use and maintenance specified by the Manufacturer.

All applicable accident prevention regulations, recognised regulations relating to safety technology, industrial matters, and health and safety at work must be observed.

The Manufacturer declines all responsibility for damage caused to property, persons or third parties resulting from modifications made to the product which have not been expressly authorised by the Manufacturer.

Irrigamatic control systems are devices designed to monitor and control self-propelled sprinklers.

The Irrigamatic NET controller is provided with Internet connectivity and allows monitoring of the work status and of any alarms, remote configuration of the work cycle, and generation and export of the work data of the self-propelled sprinkler.

6. MAINTENANCE

Keep the system in a good condition and perfect working order. For this purpose, the following guidelines must be observed:

- Do not perform maintenance procedures unless they are specifically described in the documentation or the operator has been trained by an authorised local dealer;
- Always adhere to the warnings and instructions specified on the equipment or provided with it;
- Always take maximum care when moving or transferring the equipment;
- Always place the equipment in a large enough area to allow maintenance;
- Do not make unauthorised changes to the product. Unauthorised modifications or misuse may compromise operation and safety, significantly reduce the service life of the product, and void the warranty;
- Do not remove safety devices and guards, or the adhesive nameplates from the product;
- Disconnect/isolate the control system from the power supply (battery, accumulators, etc.) before performing any welding operations on parts of the equipment;
- This product does not require maintenance. Do NOT open the housing. Opening the housing will compromise the seal and void the warranty;
- Do not wash or use high-pressure jets to clean the electromechanical and electronic components of the system;
- Only use the device if all its functions are clearly understood, it can be used without restrictions and appropriate instructions have been provided;
- Before cleaning, disconnect the power supply cable on the equipment;
- Use specific cleaning products such as multi-purpose sprays. Using products other than those recommended could cause damage or danger;
- If in doubt, please contact the technical support service.

7. POWER SUPPLY

- The product must be supplied with the current as indicated in the TECHNICAL DATA chapter.

8. RECYCLING AND DISPOSAL OF THE PRODUCT

In compliance with European legislation, electrical and electronic equipment must not be disposed of with domestic waste.

In the EU member states, private individuals must dispose of electrical equipment free of charge in relevant places. For further information, contact the local authority responsible for disposal.

For further information, contact the local authority responsible for disposal or ask for specific instructions.

9. GENERAL FEATURES

9.1. FUNCTIONS

- Current date and time.
- Measurement of the unwound and rewound pipe.
- Pipe to be rewound.
- Initial pause from 0 to 120 min.
- Working speed adjustment from 1 to 4 sectors (4 to 850 m/h).
- Display of the work duration and work end time.
- Setup of work end time and calculation of rewind speed.
- Final pause from 0 to 120 min.
- Auxiliary sprinkler management.
- Programmed activation of end-of-unwinding indicator.
- Operations at end of irrigation.
- Available irrigation criteria:
    - m/h (STANDARD);
    - pluviometric mm (OPTIONAL);
    - 2.a) with flow meter;
    - 2.b) with set flow rate;
    - 2.c) with calculated flow rate;
    - end time.
- **INTEGRATED MANAGEMENT OF THE RETURN MOTOR (MTR)**
    - Up to 5 motor restart attempts
    - Start RPM threshold settable
    - Check start-up by RPM and/or oil pressure
    - Manual start
    - Outputs for starter and solenoid valve
    - Check RPMs, oil pressure coolant temperature and fuel level.
- Communication with motor-pump unit equipped with motormatic controller.

9.2. OPTIONS

- Connection to pressure switch.
- Speed measurement with touch roller sensor.
- Connection to wind-rain sensors.
- Connection to a flow meter.
- **Connectivity to the Matermacc Cloud (internet) for remote use via the app and technical assistance from the Matermacc portal (Irrigamatic NET only).**

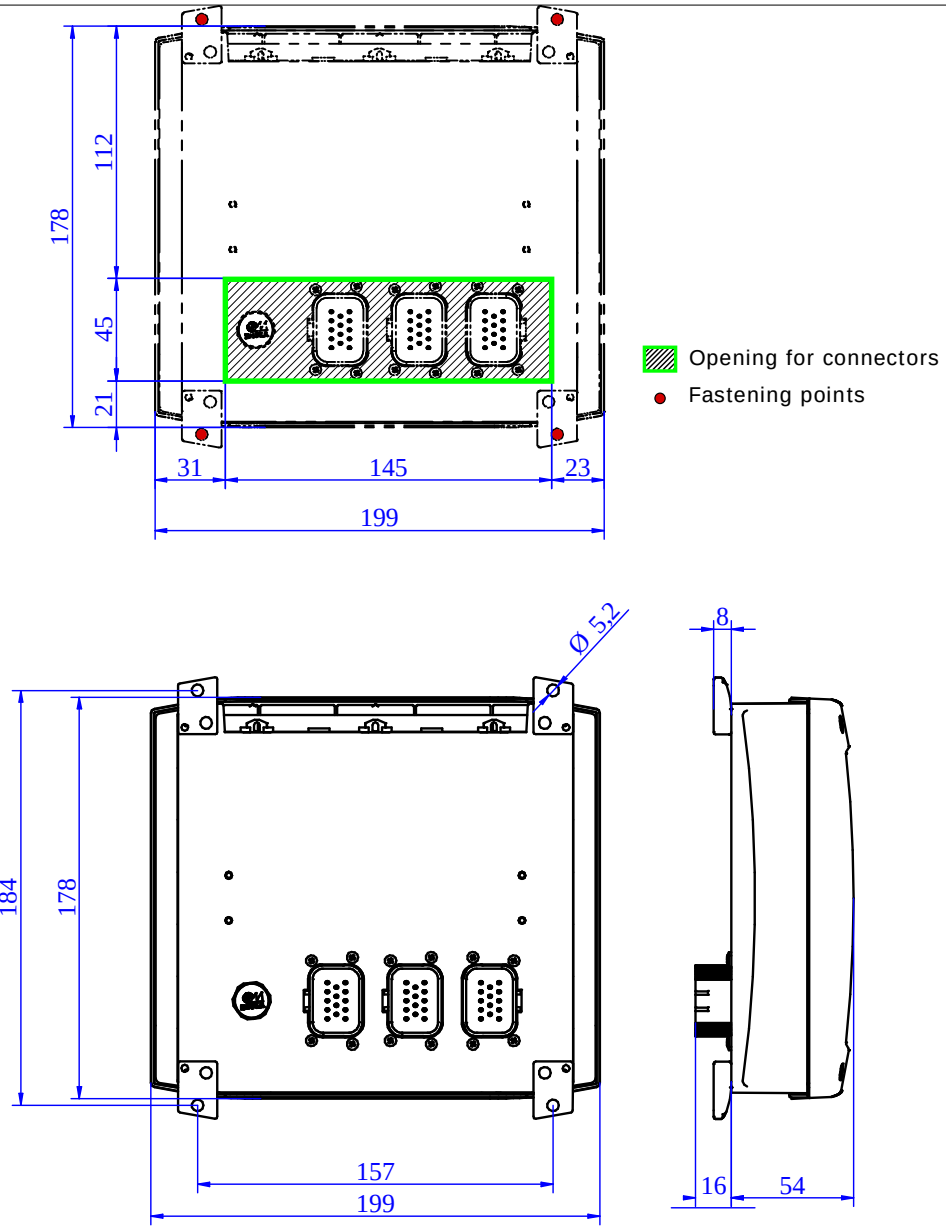
9.3. TECHNICAL SPECIFICATIONS

- Operating voltage 11-16V.
- Maximum current draw 6A.
- Maximum draw/single motor 1.5A.
- Mobile network (optional): 3G / 4G / 4G+ / LTE GLOBAL.
- B/N backlit display.

10. ASSEMBLY INSTRUCTIONS

The controller must be mounted in a position protected from direct sunlight and protected from water jets, and it must be fixed on a support that is not subject to vibrations.

The physical dimensions of the controller for assembly are shown below.



Leave 30mm of space between the top of the controller and any metal parts of a container.

Fig. 1

11. CONNECTION INSTRUCTIONS

11.1. MAIN WIRING

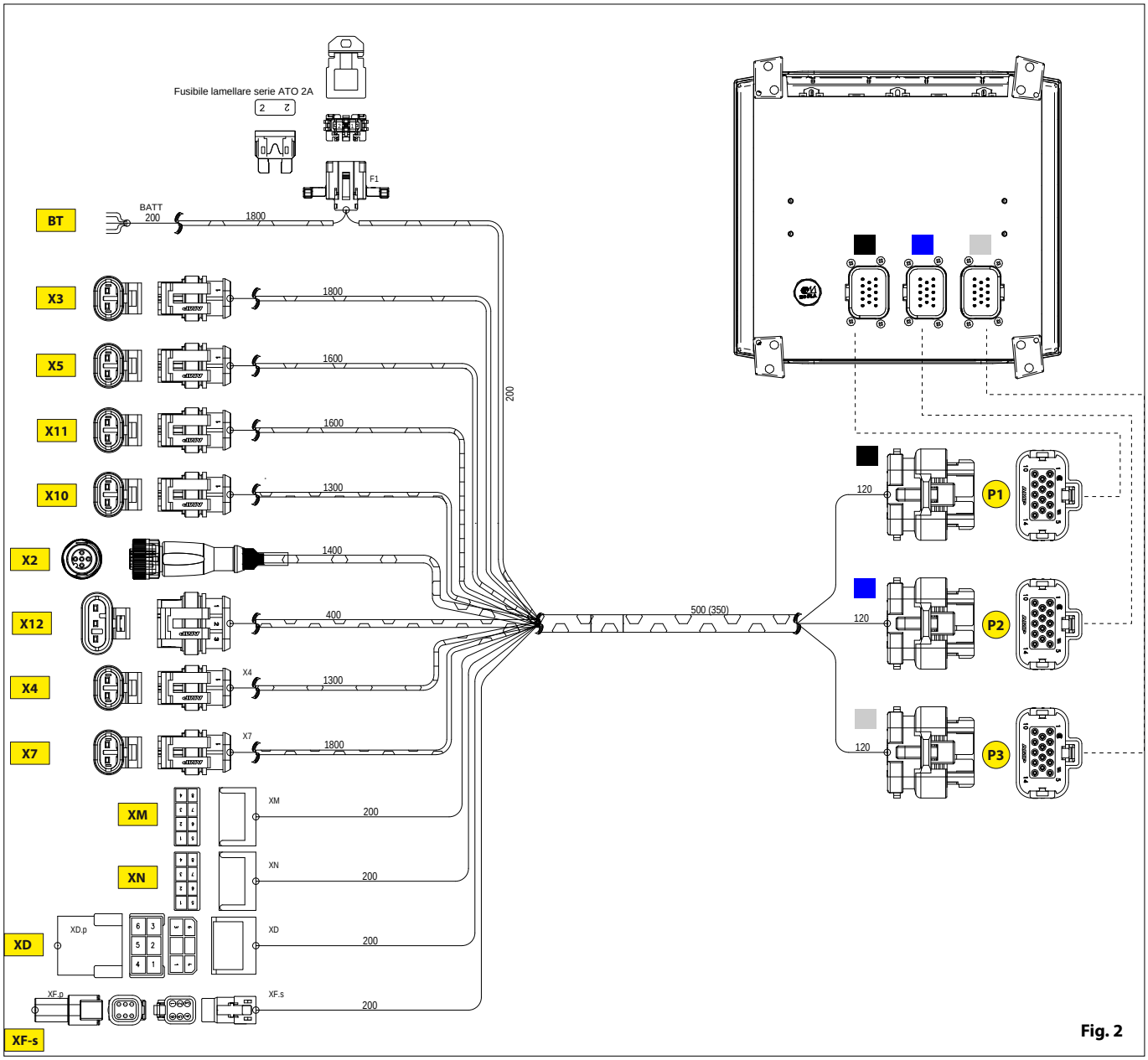


Fig. 2

BT	BATTERY			
	Pole	**ID**	**Function**	**Acronym**
	+	RED	Battery +	30
	-	BLACK	Battery -	31

X3	END REWIND SWITCH				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BLACK		GND	CMD_15
	2	WHITE	NPN digital input	M3 - Winding End	M3

X5	END WORK MOT				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BROWN	Motor output	M10 - End work Mot+	M5+
	2	BLUE	Motor output	M10 - End work Mot-	M5-

X11	SECOND SPRINKLER MOTOR				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BROWN	Motor output	M11 - Third Mot+	M11+
	2	BLUE	Motor output	M11 - Third Mot-	M11-

X10	OUT AUX				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	WHITE	LOW SIDE digital output	M10 - Aux Relay	M10
	2	RED		GND	30F

X2	PIPE SPEED 4-pin straight connector M12 IP67 L=5MT 4x0.34m2 PUR				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BROWN		+12V	30F
	2	WHITE			
	3	BLUE		GND	
	4	BLACK	NPN digital input	M2 - Speed Sensor	M2

X12	AUX SPEED Connector AMP S.Seal series 3-way P/F				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	RED		+12V	30F
	2	WHITE	NPN digital input	M12 - Sec. Sens. Speed	M12
	3	BLACK		GND	CMD_15

X4	BYPASS MOTOR Connector AMP S.Seal series 2-way P/F				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BROWN	Motor output	M4 - Mot. Bypass +	M4 +
	2	BLUE	Motor output	M4 - Mot. Bypass -	M4 -

X7	PRESS. SWITCH Connector AMP S.Seal series 2-way P/F				
	Pole	**ID**	**Type**	**Function**	**Acronym**
	1	BLACK		GND	CMD_15
	2	WHITE	NPN digital input	M7 - Water Press	M7

XM

MTR EXP.

Connector for 8-way Faston terminal P/F Connect to the XM connector of the MTR expansion wiring (if provided in the machine configuration).

Pole	ID	Type	Function	Acronym
1	S	Emergency circuit - loop	Emergency	EME
	S	Emergency circuit - loop	Emergency	EME
2	B	NPN digital input	MTR - Fuel Level	FUEL
3	B	D+ signal output	MTR -D+ Return motor	D+
4	B	LOW SIDE digital output	MTR - 50 Starter	CMD_50
5	B	LOW SIDE digital output	MTR - Fuel Pump Valve Cutoff	CUTOFF
6	B	NPN digital input	MTR - Oil Press Sw	OIL_P
7	B	NPN digital input	MTR - H TEMP SW	H.TEMP
8	B	W signal input	MTR - RPM	W

XN

I/O EXP.

Connector for 8-way Faston terminal P/F

Pole	ID	Type	Function	Acronym
1	N		Control 15/54	CMD_15
2	R		+12V	30F
3	B	Current input 4-20 mA	C4 + Flow meter 4-20 mA	C4
4				
5	B	NPN digital input	M6 - Unwinding End	M6
6	B	NPN digital input	M8 - Water Flow Meter	M8
7	B	NPN digital input	M9 - Rain Wind	M9
8				

XD

SAFETY

Connector for 6-way Faston terminal P/F without retainers

Pole	ID	Type	Function	Acronym
1	S	Emergency circuit - NC	Emergency	EME
2	BR	Digital output	C5.2 - RED Stacklight	C5
3	BG	Digital output	C4 - Yellow Stacklight	C5
4	N	Digital output	Control 15/54	CMD_15
5	B	Digital output	Acoustic alarm	CMD_AL
6				

XF.S

BUS EXP.

Connector for 6-way Faston terminal P/F without retainers

Pole	ID	Type	Function	Acronym
1	N		Gnd	
2				
3	S	Emergency circuit - loop EXT	Emergency EXT	EME_EXT
4	S	Emergency circuit - loop EXT	Emergency EXT	EME_EXT
5	G	Communication	Data RS485+	485 +
6	V	Communication	Data RS485-	485 -

XF.p is to be removed if connecting the Motormatic to the XF.s connector

XD.p is to be removed if connecting the emergency circuit to XD

11.2. MTR WIRING

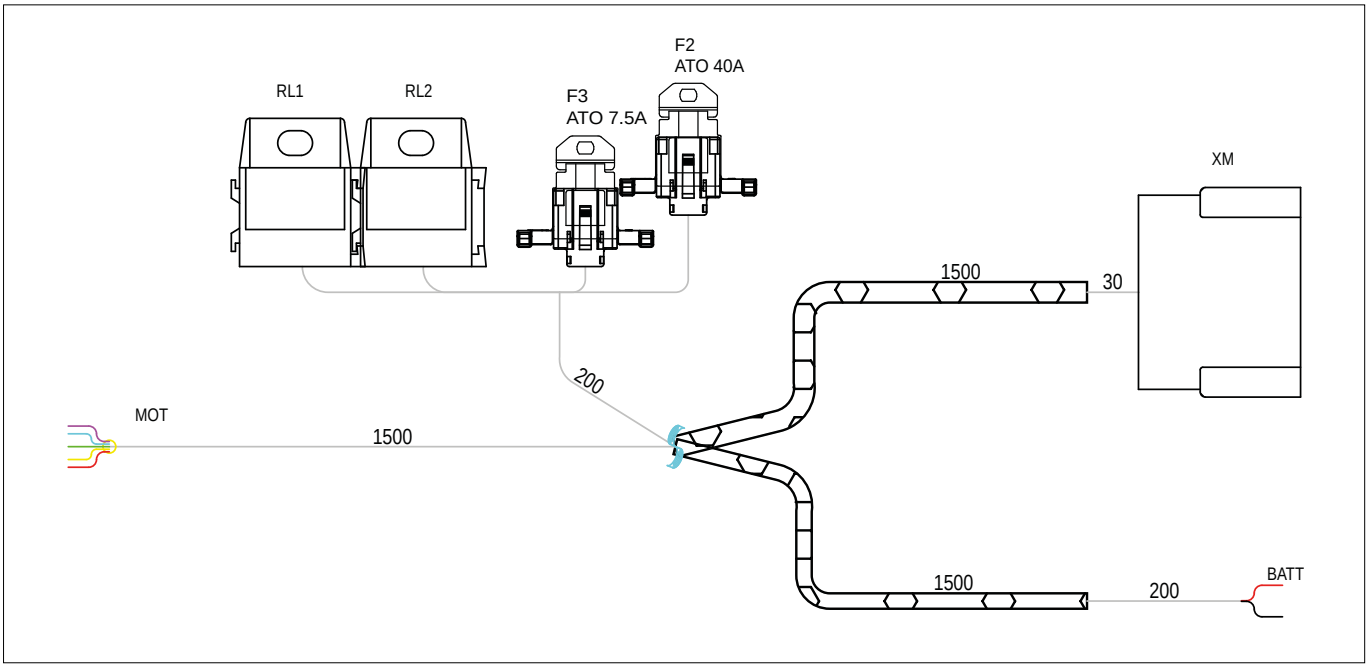


Fig. 3

XM	MTR EXPANSION (RETURN MOTOR) Connect to the XM connector of the main wiring.

MOT	SPARE WIRES FOR MOTOR CONNECTION*		
	Acronym	**Type**	**Description**
	50	LOW SIDE digital output	MTR Starter
	CUTOFF	LOW SIDE digital output	Oil pump valve
	OIL_P	NPN digital input	Pressure switch
	H_TEMP	NPN digital input	Thermostat
	W	W signal input	Engine speed sensor
	D+	D+ signal output	D+ alternator
	FUEL	Resistive analogue input	Fuel level sensor
	15MTR	LOW SIDE digital output	Motor shutdown actuator/valve
	31	GND	Motor GND

BATT	SPARE WIRES FOR MTR POWER SUPPLY (RETURN MOTOR)*		
	Wire	**Type**	**Description**
	Red	Power supply (+12V)	MTR Motor 12V
	Blue	Power supply (GND)	MTR Motor GND

*Wiring to be completed by the installer.

12. INTERFACE

The user interface (Fig. 4) consists of a panel with the following:

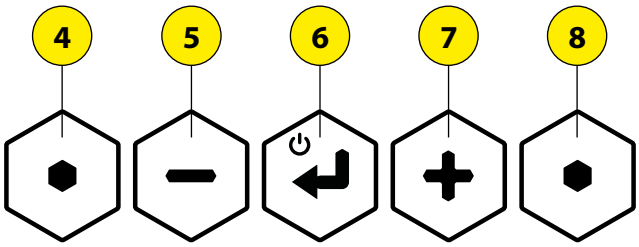
Fig. 4

1	A backlit LCD display
2	A keypad for navigation and settings
3	A status LED to signal any alarms or faults

While the device is being set up, the backlight of the LCD display is always on, and is automatically switched off if no further action is taken on the keypad within a preset time.

Backlighting automatically activates as soon as a key is pressed.

12.1. KEYPAD FUNCTIONS



4	**F1** - move between the menu pages
5	Reduce the values - Move the FOCUS
6	**ENTER** - On/Off - Confirm
7	Increase values - Move the FOCUS
8	**F2** - move between the menu pages

13. METHOD OF USE

13.1. POWERING ON THE CONTROLLER

To start the controller, press and hold the **"ENTER"** key for "1 second" (Fig. 5)

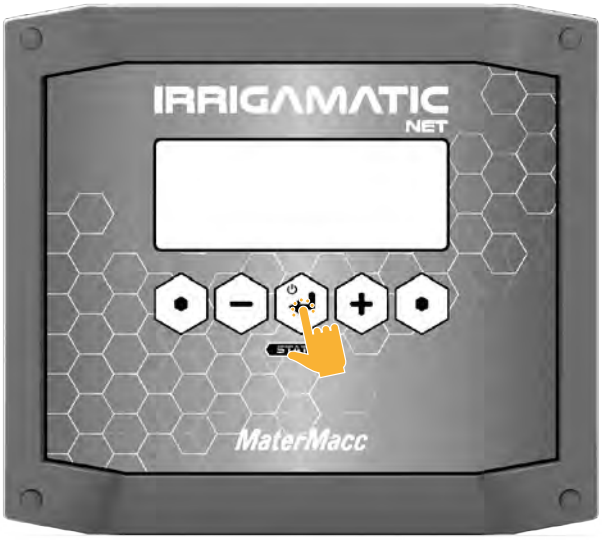
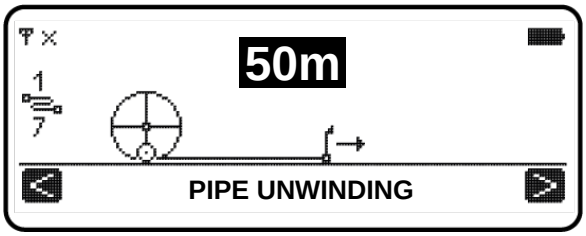


Fig. 5

The FIRST message shows the software version number.	
The SECOND message shows the controller model at the top: NET if there is a modem, otherwise B. The lower section shows that the device has been initialised.	
The controller sets itself to pipe unwinding mode. Furthermore, the controller will return to pipe-unwinding mode after 5 minutes of inactivity (if it is not working).	

13.2. SWITCHING OFF THE CONTROLLER

To switch off the controller, press and hold  until the bar on the right has filled completely.

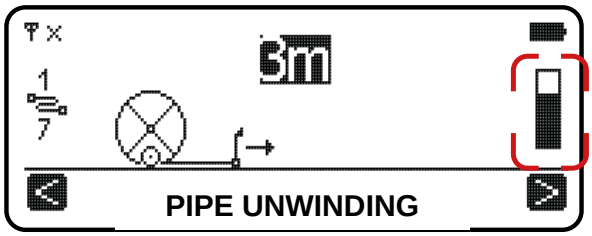


Fig. 6

13.3. NAVIGATION

Use the keypad to move between the menus and modify the parameters.

The keypad has two multifunction keys **(F1)** and **(F2)** (Fig. 7) which take on the function shown in the corresponding point of the display.

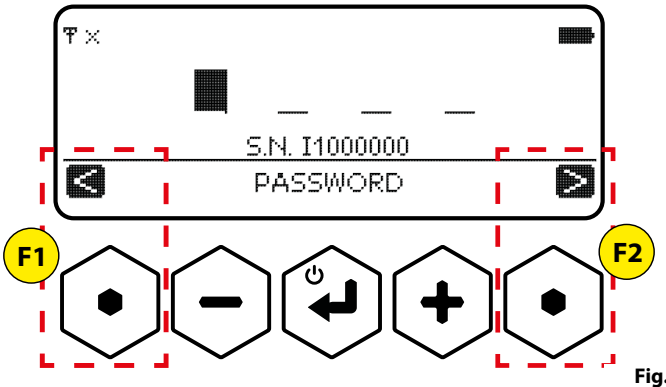


Fig. 7

Example:

- In this case, the  key corresponds to the **"<"** function and the  key corresponds to **">"** function. These functions refer to navigation between the menu pages.
- The  keys are used to move the focus and modify the value as required.

Procedure for navigating between the pages and entering the required menu:

1. Press  to move to the relevant page;
2. Press  to confirm and access the page of the relevant menu.

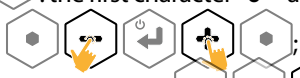
Procedure for modifying a value in the display:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm.

Access to a password-protected menu:

- If the menu is password-protected, the word **"PASSWORD"** will appear. At this point, the operator must enter the relevant password.

Procedure for entering the password:

1. Press  : the first character **"0*"** appears which means that the character can now be changed (Fig. 8);
2. Change the character using  ;
3. Confirm the selected character by pressing  ;
4. Place the focus on the next position using  ;

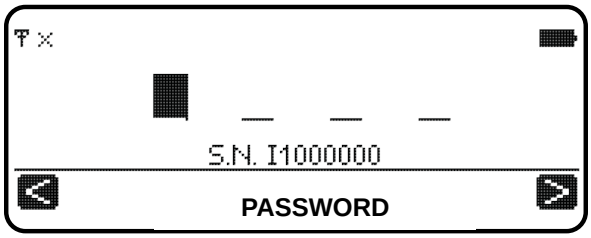


Fig. 8

5. Repeat the steps from 1) to 4) until the last character of the password has been entered and then press  to proceed;
6. If the password is correct, the controller will show the first parameter value of the menu. Otherwise, you will remain in the password menu;
7. To exit the menu, press  and the controller will return to the main menu.

13.4. INDICATION OF VALVE MOVEMENT

The following message appears when the controller is moving the valves:

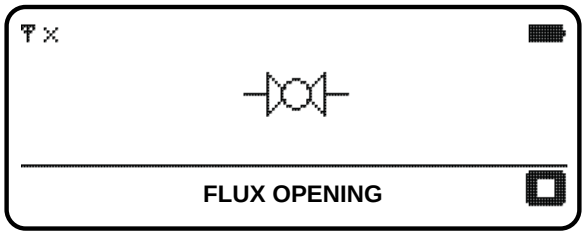


Fig. 9

The message in the lower section indicates the type of movement in progress.

13.5. STATUS SYMBOLS

The top bar of the IRRIGAMATIC B - NET shows the status of the mobile network, the MMConnecta remote control and the battery of the self-propelled sprinklers.

MOBILE NETWORK

	MMConnecta remote control active. No mobile network signal.
	MMConnecta remote control active. Low mobile network signal.
	MMConnecta remote control active. Good mobile network signal.
	MMConnecta remote control active. Mobile network with data connection active.
	MMConnecta remote control active. Mobile network with data connection not active.
OFF	MMConnecta remote control deactivated.

To enable or disable the MMConnecta remote control of the controller, modify parameter #A55, refer to “18. SYSTEM PARAMETERS” on page 59.

BATTERY

	Fully charged battery
	Battery depleted

14. MAIN MENU OVERVIEW

At start-up, after the initialisation procedures and if no faults are detected the system enters the programming status of the irrigation cycle, i.e. **PIPE UNWINDING**.

- Press 

to exit the programming section and go into the main menu of the controller.

OPERATION MENU

From this menu you can set the parameters and carry out an irrigation cycle.

- Press 

to go to "MTR", press 

to go to **"CALIBRATION"**.

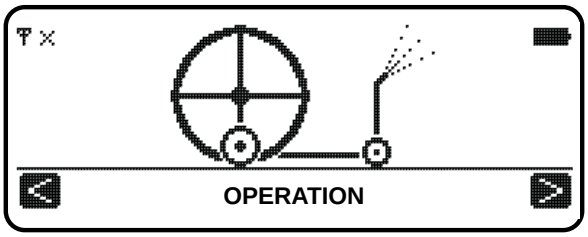


Fig. 10

CALIBRATION MENU

From this menu you can set the **CALIBRATION** parameters of the sprinkler.

NOTE	**The CALIBRATION menu is PASSWORD protected. It can only be accessed by the Manufacturer.**

- Press 

to go to ""**OPERATION",** press 

to go to **"CALIBRATION"**.

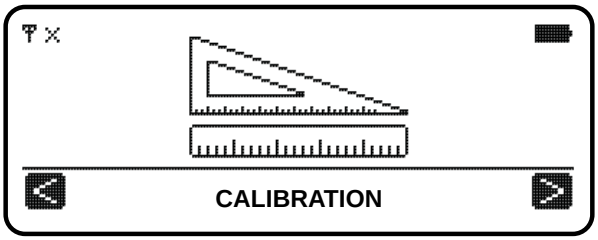


Fig. 11

CONFIGURATION MENU

From this menu you can set **CONFIGURATION** parameters of the controller.

NOTE	**The configuration menu is PASSWORD protected.**

- Press 

to go to **"CALIBRATION"**, press 

to go to **"SCHEDULE"**.

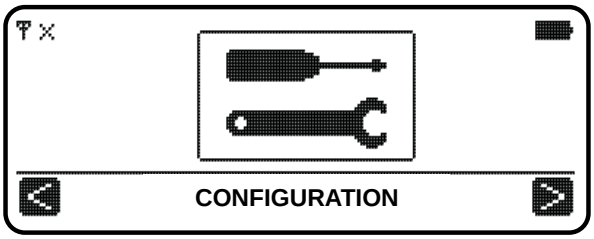


Fig. 12

SCHEDULE MENU

From this menu you can set the **DATE/TIME** parameters of the controller.

- Press 

to go to""**"CONFIGURATION"**, press 

to go to **"COUNTERS"**.

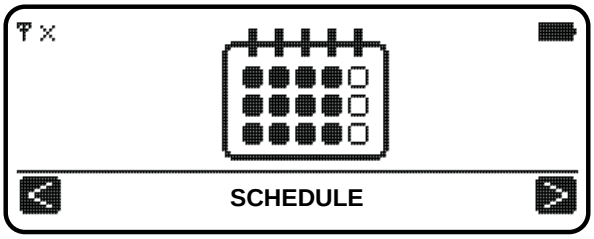


Fig. 13

COUNTERS MENU

From this menu you can control the partial and full work **COUNTERS**.

- Press 

to go to **"SCHEDULE"**, press 

to go to **"MANUAL"**.

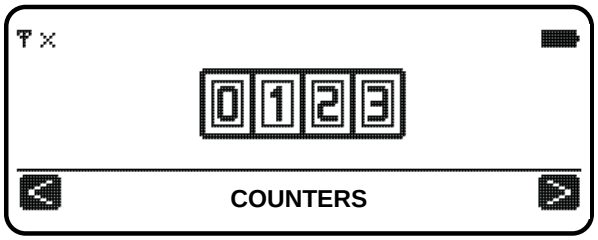


Fig. 14

MANUAL MENU

From this menu you can **MANUALLY** move the valves and check the status of some of the inputs.

- Press 

to go to **"COUNTERS"**, press 

to go to **"NET"**.

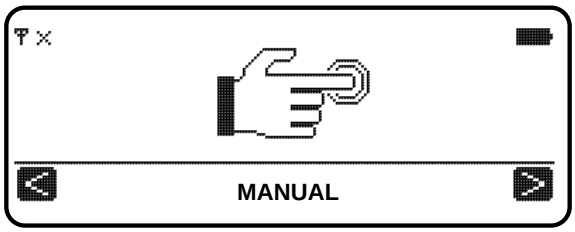


Fig. 15

MOTORMATIC MENU

From this menu you can manually manage a motor-pump unit equipped with a **Motormatic SE** controller.

NOTE	**The menu is only available if this function is present.**

- Press 

to go to **"MTR"**, press 

to go to **"OPERATION"**.

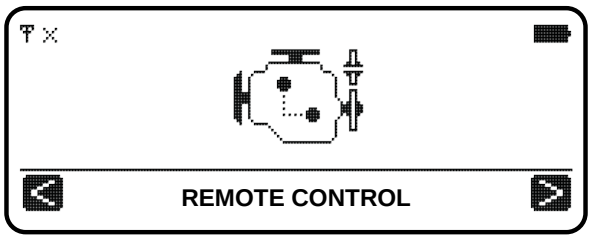


Fig. 16

Menus which can be used by the end user are described below.

MTR MENU

From this menu you can manage the return motor **(MTR**) manually.

NOTE	**The menu is only available if this function is present.**

- Press 

to go to "**NET",** press 

to go to **"REMOTE CONTROL".**

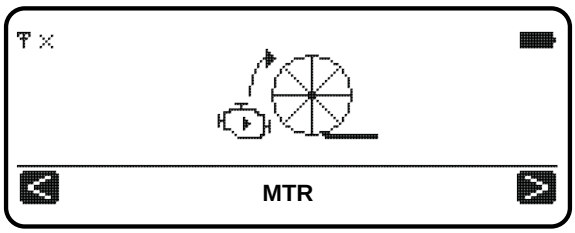
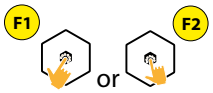


Fig. 17

14.1. CONFIGURATION MENU

From this menu you can set **CONFIGURATION** parameters of the controller.

Procedure:

1. From the main screen, press 

or until you reach the **"CONFIGURATION"** (Fig. 18) menu;

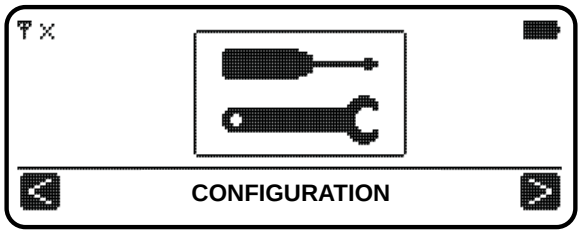


Fig. 18

2. Press  to access the **"CONFIGURATION"** menu. A password is required;

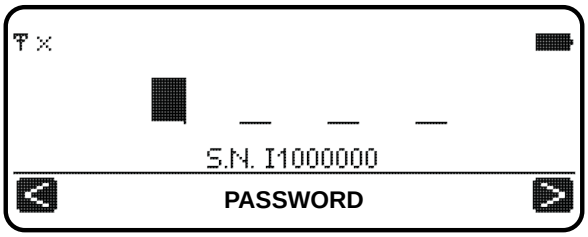


Fig. 19

3. Enter the password as described in (13.1. POWERING ON THE CONTROLLER)and press  ;

NOTE	**After the password has been entered, the serial number of the controller can be seen. Please provide this information if you require technical assistance;**

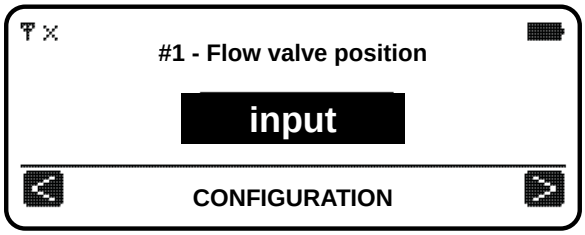


Fig. 20

4. Use  to move to the required parameter and press  to modify the parameter. An * will appear in front of the parameters (Fig. 21);

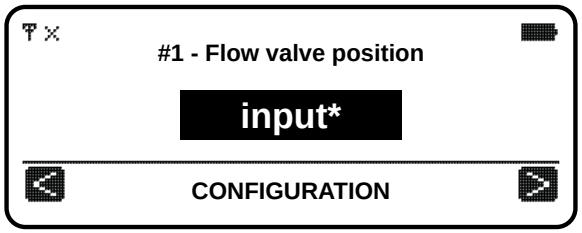


Fig. 21

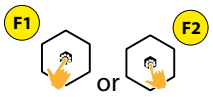
5. Use  to modify the parameters and press  to save;

6. To exit the **CONFIGURATION** menu, press  .

14.2. SCHEDULE MENU

From this menu you can set the **DATE/TIME** on the controller.

Procedure:

1. From the main screen, press 

or until you reach the **"SCHEDULE"** (Fig. 22) menu;

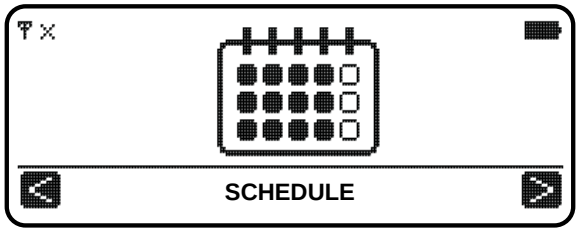


Fig. 22

2. Press  to access the **"SCHEDULE"** menu.

Procedure for modifying DATE and TIME in MANUAL mode:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm.

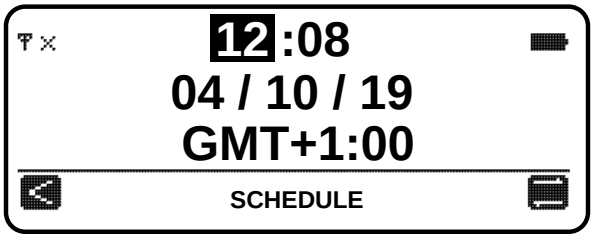


Fig. 23

Procedure for modifying DATE and TIME in AUTOMATIC mode (NET model):

1. From the main screen (Fig. 24) press 

to synchronise the date and time via the data connection, the symbol (Fig. 25) indicates that synchronisation is in progress;
2. Once synchronisation has been carried out from the **SCHEDULE** menu, press 

.

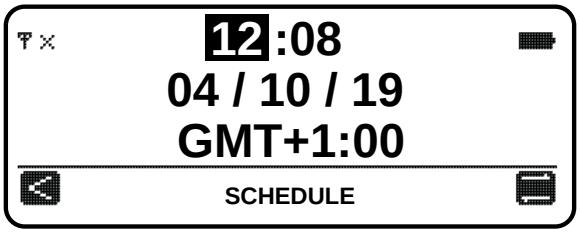


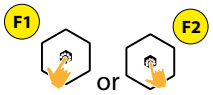
Fig. 24

Fig. 25

14.3. COUNTERS MENU

From this menu you can consult the partial and total counters of the machine's operating hours and the cubic metres of water used.

Procedure:

1. From the main screen, press 

or until you reach the **"COUNTERS"** menu;

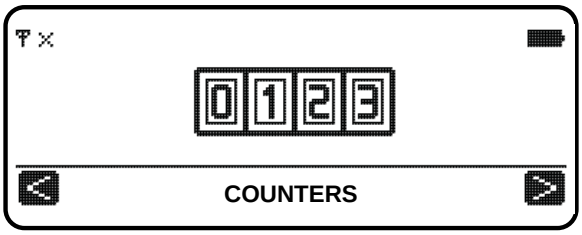


Fig. 26

2. Press  to access the **"COUNTERS"** menu;

3. Part **(A)** shows the **TOTAL HOURS** counter, part **(B)** shows the **PARTIAL HOURS** counter and part **(C)** shows the counter for fault-related shutdown of the controller **(SDNF) (Fig. 27)**;

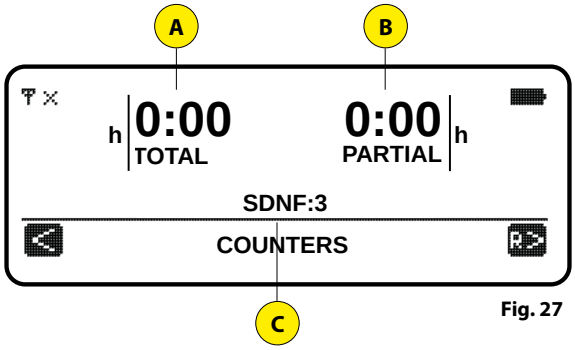


Fig. 27

NOTE	**The fault-related shutdown counter is incremented whenever the controller is switched off without performing the correct shutdown procedure (prolonged pressing of the ENTER key), e.g. if it is switched off by disconnecting the power supply.**

4. By briefly pressing 

, you will switch to the page of counters for the cubic metres of water consumed;

5. Part **(A)** shows the **TOTAL COUNTER** of the cubic meters of water consumed, part **(B)** shows the **PARTIAL COUNTER** of the cubic meters of water consumed and part **(C)** shows the COUNTER of the last work cycle **(LAST)**;

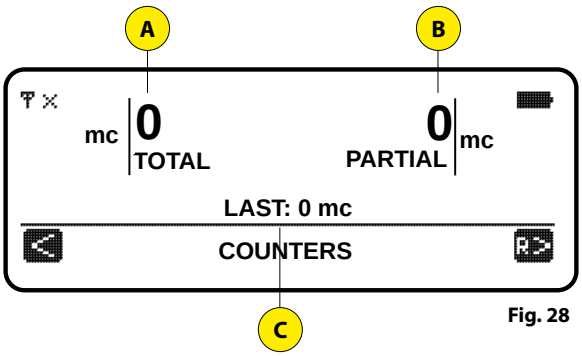


Fig. 28

6. To exit the COUNTERS menu press 

.

RESETTING THE COUNTERS

The partial counter displayed can be reset by pressing and holding 

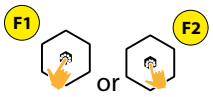
.

NOTE	**The total counters cannot be reset**

14.4. MANUAL MENU

By using the **"MANUAL"** menu, the valves can be moved manually and the status of the main digital inputs is displayed.

Procedure:

1. From the main screen, press 

or until you reach the **"MANUAL"** menu;

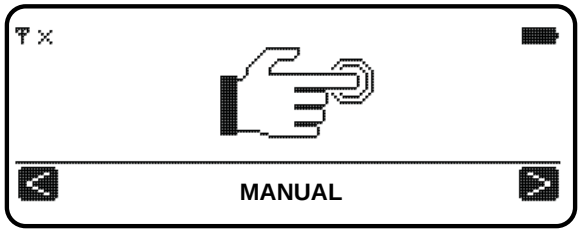
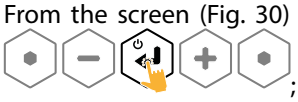


Fig. 29

2. Press  to access the **"MANUAL"**menu;

3. From the screen (Fig. 30) move the focus to the required valve using the  keys and press  ;

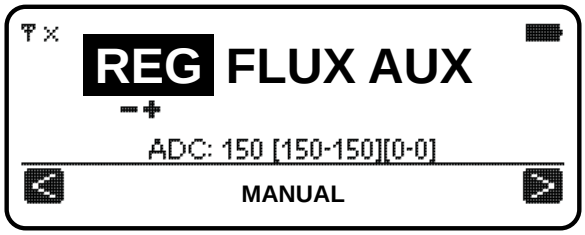


Fig. 30

4. Then use  to move the selected valve;

5. To deselect the valve, press  again;

6. Press 

again to go to the diagnostics page for the inputs;

7. In the connectors, close the input to ground and check that the status changes on the display (Fig. 31);

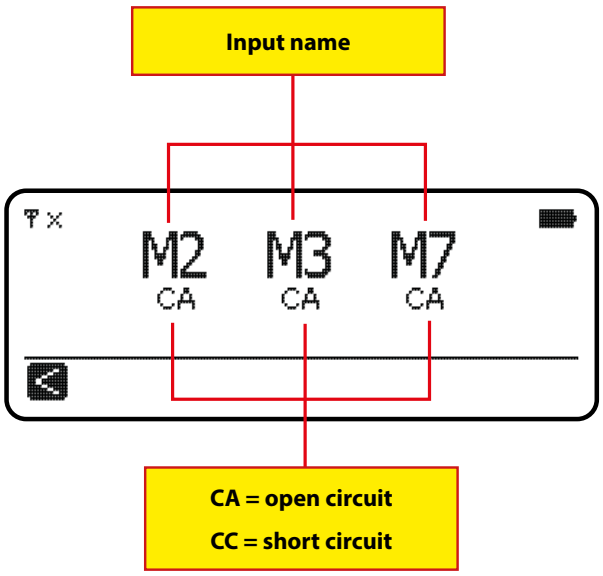
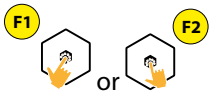


Fig. 31

14.5. REMOTE CONTROL (IF ACTIVE)

This menu can be used to manually control the motor-pump unit equipped with the MOTORMATIC controller **"IF CONNECTED TO THE IRRIGAMATIC B / NET CONTROLLER".**

1. From the main screen, press 

or until you reach the **"REMOTE CONTROL"** menu;

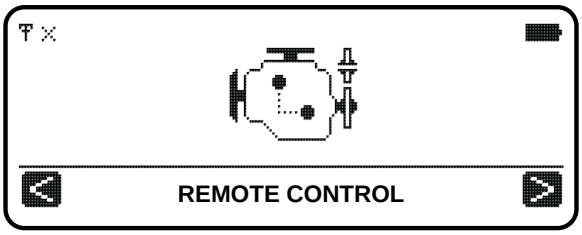


Fig. 32

2. Press  to access the **"REMOTE CONTROL"**menu;

3. If the MOTORMATIC controller is powered off or is not connected, the following screen will appear (Fig. 33);

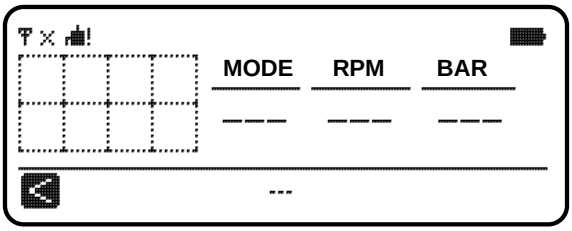


Fig. 33

4. If the MOTORMATIC controller is powered on and connected, the following screen will appear (Fig. 34).

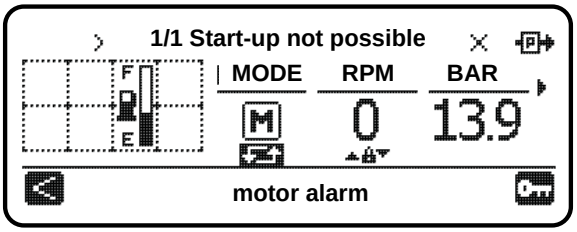


Fig. 34

DASHBOARD

If grid **(A)** (Fig. 35) represents the status indicator dashboard of the machine, alerts are notified by the appearance of the following symbols in the grid:

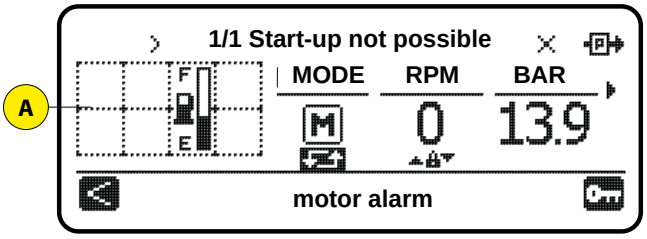


Fig. 35

	Low fuel level (analogue sensor). Empty: fuel very low.
	Coolant temperature (analogue sensor) Empty: engine cold.
	Coolant temperature (thermostat)
	Fuel level (digital sensor)
	Low oil level
	Fuel filter clogged
	Spark plug activated
	Battery depleted

MODE

Grid **(B)** (Fig. 36) shows the operating mode of the motor-pump unit:

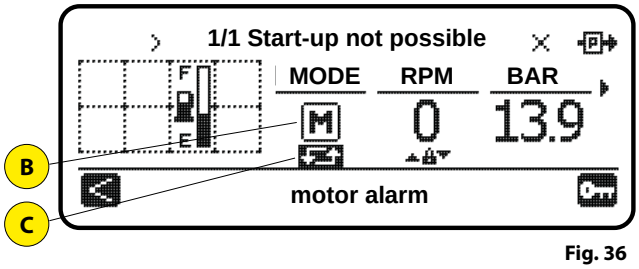


Fig. 36

M	**MANUAL operation:** The motor speed must be adjusted manually to obtain the desired water pressure.
A	**AUTOMATIC operation:** The motor speed is automatically adjusted to maintain the set-point water pressure.

- Use  to position the focus on point **(C)** (Fig. 36) and press  to change the operating mode.

NOTE	**Switch operating mode from MANUAL to AUTOMATIC can only take place when the Motormatic controller has completed the motor start-up phase, i.e. when there is a closed padlock symbol after the RPM display. (Fig. 37).**

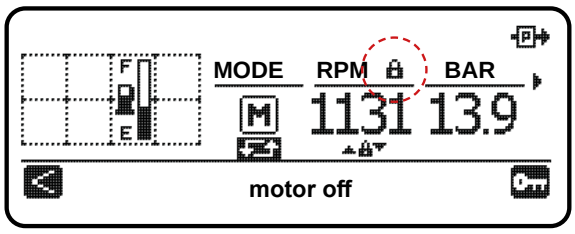


Fig. 37

RPM

The RPM value indicates the current motor revolutions per minute. It is possible to change the motor speed by acting on the accelerator and following the procedure indicated below:

1. Use  to position the focus on the symbol as shown in (Fig. 38);

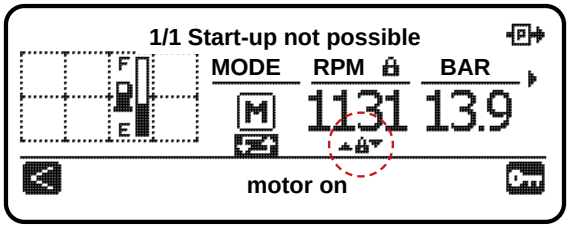


Fig. 38

2. Press the key  ;

3. Press  to accelerate or  to decelerate until the required operating condition is reached;
4. Press  to complete the adjustment.

PIPE PRESSURE - BAR

BAR represents the current pressure value in Bar (in large characters) and the pressure set point (in small characters).

If the motor-pump unit is set to AUTOMATIC operation, it is possible to change the water pressure set point value by following the procedure below:

1. Use  to position the focus on the **(BAR)** (Fig. 39)pressure value;

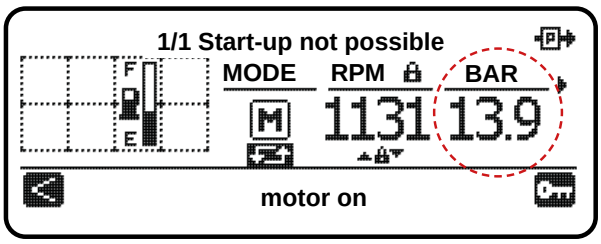


Fig. 39

2. Press  to increase the value or  to lower it;
3. Press  to complete the modification.

STATUS

The status of the motor-pump unit is indicated at the bottom of the screen (Fig. 40):

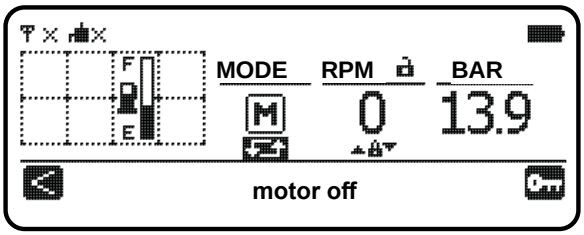


Fig. 40

POWER ON/OFF

- Press 

to start or stop the motor-pump unit equipped with the Motormatic SE controller (Fig. 41).

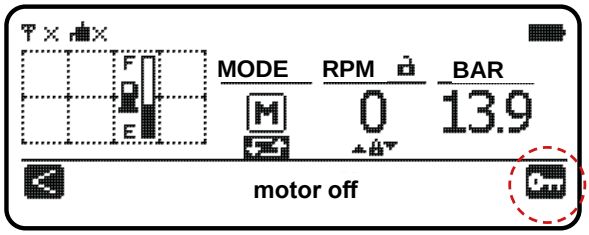


Fig. 41

- The Motormatic SE controller will being the power on/off procedure.

	**Before starting the motor-pump unit, check that there are no animals, objects or people within the operating area of the machine and that the machine is safe.**

STATUS SYMBOLS

In position **(D)** (Fig. 42) the status symbols are displayed.

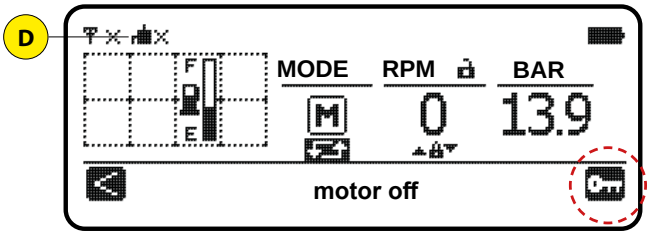


Fig. 42

Status symbols	
	Motor-pump unit connected and OFF
	Communication problems with the motor-pump unit
	Motor-pump unit started in "Automatic" mode
	Motor-pump unit started in "Manual" mode

ALARMS

The list of alarms in progress is shown in the top of the remote control screen (Fig. 43) (see the table of alarms "19. ALARMS" on page 64).

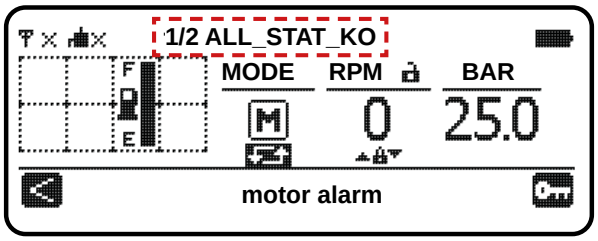


Fig. 43

The alarms in progress will be displayed cyclically.

MOTORMATIC MANAGEMENT MODE BY THE IRRIGAMATIC CONTROLLER

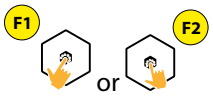
To set the Irrigamatic controller management mode of the motor-pump unit equipped with the Motormatic controller system, change the parameter **#A69** see "18. SYSTEM PARAMETERS" on page 59.

The following modes are present:

- **MM OFF (0):** Management of the motor-pump unit by the Irrigamatic controller is deactivated.
- **MM START (1):** The Irrigamatic controller will only manage activation of the motor-pump unit.
- **MM START + STOP (2):** The Irrigamatic controller will manage activation and deactivation of the motor-pump unit
- **MM S+S+EME (3):** The Irrigamatic controller will manage activation, programmed deactivation and emergency deactivation of the motor-pump unit.

14.6. MTR MENU MTR (IF ACTIVE)

The **MTR** menu allows the return motor of the self-propelled sprinklers to be powered on and off manually.

1. From the main screen, press 

or until you reach the **"MTR"** menu;

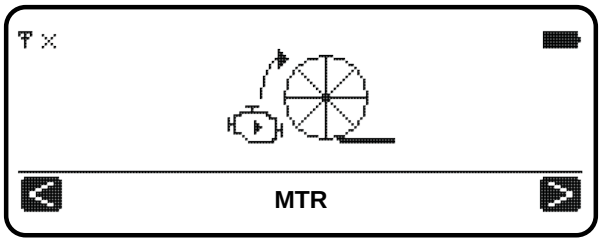


Fig. 44

2. Press  to access the **"MTR"**menu;

3. From the **MTR** menu you can read the motor speed **(RPM)** and view the alarms of the motor in the grid on the left hand side of the screen (Fig. 45);

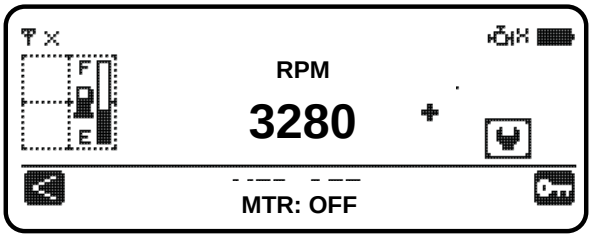


Fig. 45

4. To power the return motor on or off, press 

for more than 1 second;

5. Manual movements can be made using the REG keys  . Move the focus to **REG** by briefly pressing  or  , then carry out the movement by pressing and holding  or  , to stop the movement release the  or  key;

6. To calibrate the fuel probe, move the focus by briefly pressing  and  on  and press  . A password is required.

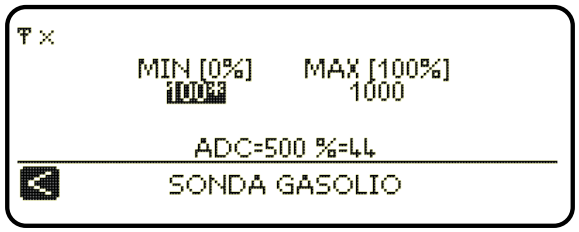


Fig. 46

Set the **ADC** value for the minimum and maximum fuel level by moving the focus to the value to be modified;

7. To exit the **MTR** menu, power off the motor and press 

.

	**Before starting the motor and carrying out manoeuvres, check that there are no animals, objects or people within the operating area of the machine.**

NOTE	**You cannot exit the return motor page if the more is powered on.**

ALARMS:

The symbols are displayed in the grid when the relative alarm is active.

 Coolant temperature.

 Low fuel level (reserve).

 Low oil level.

Any alarms present (see "19. ALARMS" on page 64) are shown at the top of the display.

14.7. OPERATION

The **"OPERATION"** is used to set the parameters of the work cycle and start the newly set cycle.

14.7.1. PIPE UNWINDING

The **PIPE UNWINDING** page shows the amount of pipe which has been unwound measured by the machine pinion or roller sensor.

You can vary the metres unwound manually or the value is increased automatically while the pipe is being unwound.

NOTE	**Before starting the unwinding process, make sure that the controller is on the PIPE UNWINDING page and that the length indicated coincides with the actual length of the unwound pipe.**

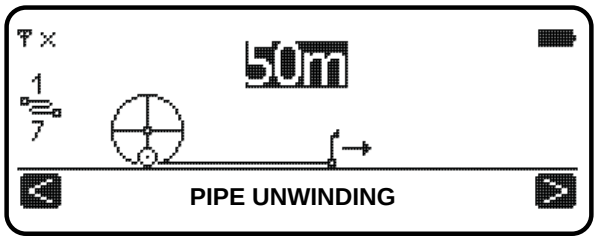


Fig. 47

To manually change the meter value of the unwound pipe, follow the procedure below:

1. From the screen as in (Fig. 47), press  ;
2. Use  to change the value of the metres of unwound pipe;
3. Press  to confirm;
4. To reset the value of the meters of unwound pipe, press and hold  ;
5. Press  to continue with the work cycle programming;
6. Press  to exit the "**OPERATION**" menu.

14.7.2. START TIME

From this screen you can se the work cycle start time.

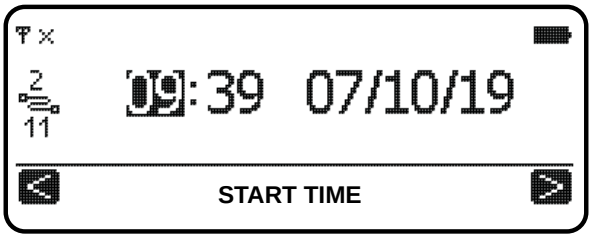


Fig. 48

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to exit the **"OPERATION"** menu.

14.7.3. PAUSE START

From this screen you can set an initial pause time in minutes. During the initial pause the controller will start irrigating with a rewind speed of **"0"** for the duration of the pause.

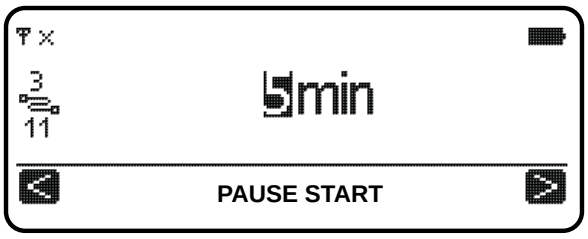


Fig. 49

Procedure:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.4. ADJUSTMENT TYPE

NOTE	**This screen is only available if the adjustment type selection has been enabled in the controller configuration.**

From this screen (Fig. 50) you can select the type of adjustment to be made:

- **m/h:** The rewind speed will be adjusted to the speed set in m/h.
- **mm:** the rewind speed will be adjusted to obtain the set height in mm of water from the ground.

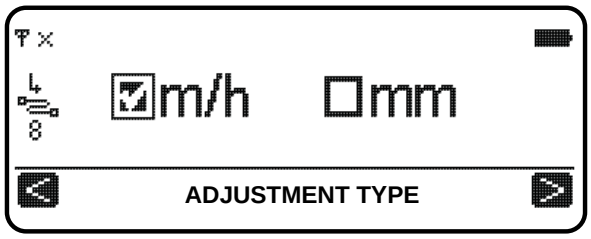


Fig. 50

Procedure for modifying the type of adjustment:

1. To make the selection, use  to move to the option required and press  to confirm;
2. The tick (☑) indicates the selection made;
3. Press  to continue with the work cycle programming;
4. Press  to go back to the previous page.

14.7.5. NOZZLE PRESSURE

NOTE	**This screen (Fig. 51) is only available if mm adjustment has been selected in the work cycle configuration (adjustment type: mm).**

Enter the water pressure in **"Bar"** present in the sprinkler nozzle.

This parameter is required to calculate the sprinkler flow rate.

Fig. 51

Procedure for modifying the nozzle pressure:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.6. NOZZLE DIAMETER

NOTE	**This screen (Fig. 52) is only available if mm adjustment has been selected in the work cycle configuration.**

On this page, enter the size of the sprinkler nozzle, this parameter is needed to calculate the flow rate.

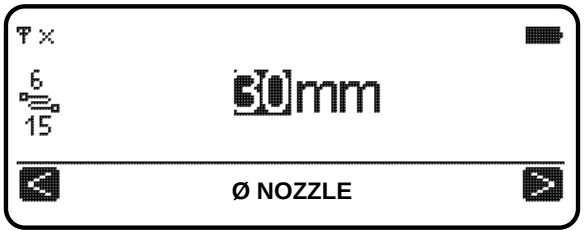


Fig. 52

Procedure for modifying the nozzle diameter:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.7. BAND WIDTH

NOTE	**This screen (Fig. 52) is only available if mm adjustment has been selected in the work cycle configuration.**

In this screen, enter the width that the sprinkler can cover with the water jet, this value is needed to calculate the mm of water on the ground.

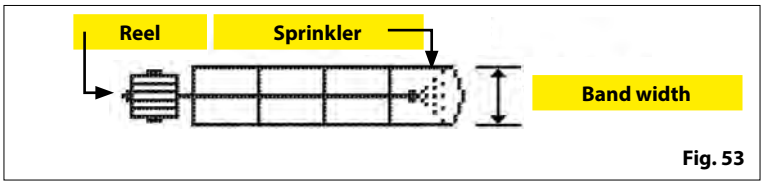


Fig. 53

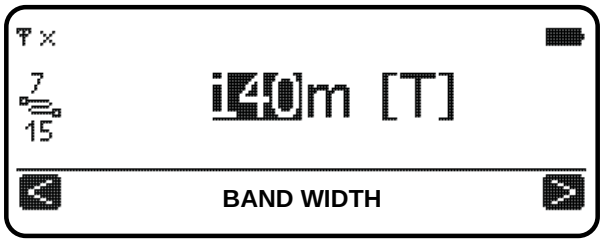


Fig. 54

Procedure for modifying the value of the band width:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.8. CALCULATED FLOW RATE

This screen shows the flow rate calculated using the parameters previously entered, proceed if you think the calculated flow rate is correct otherwise go back to the previous settings and correct the data entered.

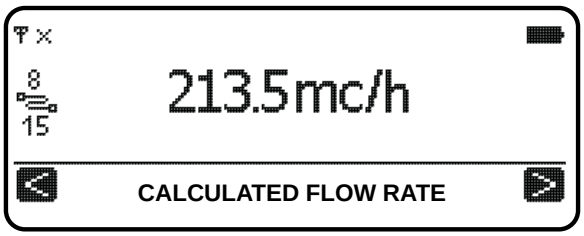


Fig. 55

Procedure:

1. Press  to continue with the work cycle programming;

2. Press  to go back to the previous page.

14.7.9. SECTORS

The Irrigamatic NET, B, and BLIND controllers allow the 4 different sprinkler rewind speeds to be managed depending on the area to be irrigated.

The rewind speed will be adjusted according to the type of management desired: metres per hour (m/h) or in millimetres (mm) of water set in the work cycle in each width sector defined by the user.

The sectors are laid out as follows:

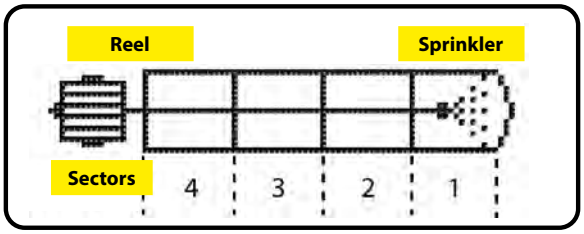


Fig. 56

14.7.10. SECTORS 1-2-3-4

In this screen you can set the parameters of the first sector to be irrigated **(sector 1)**.

If **metres per hour (m/h)** has been selected, the following screen appears (Fig. 57).

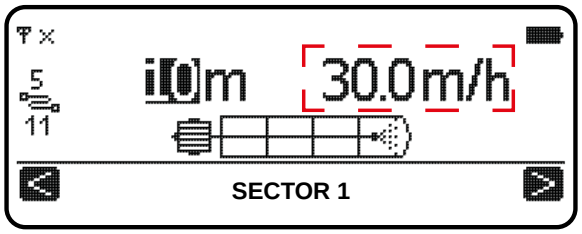


Fig. 57

If **millimetres mm** has been selected, the following screen appears (Fig. 58):

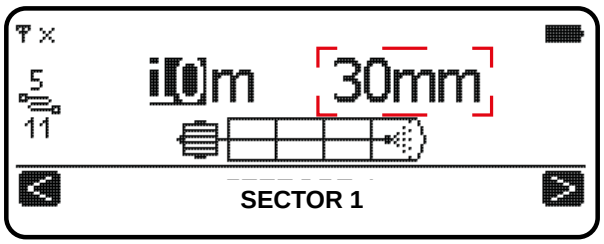


Fig. 58

To modify the values:

1. Press  to move the focus in the screen to the required value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

The sector currently being programmed is shown in the various screens as follows:

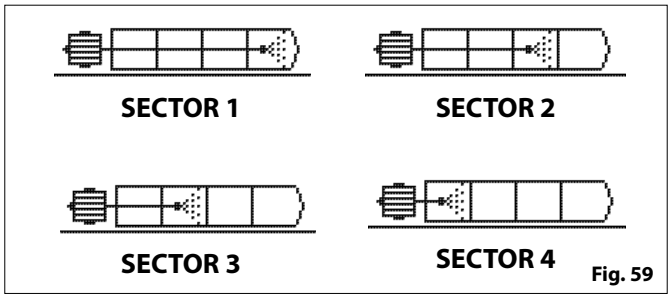


Fig. 59

NOTE	**If only one sector is to be used, leave the first three sectors at 0 metres, all the metres of pipe will be loaded into sector 4.**

14.7.11. PAUSE END

From this screen (Fig. 60) you can set a final pause time in minutes. During the final pause the controller will continue to irrigate with a rewind speed of **"0"** for the duration of the pause.

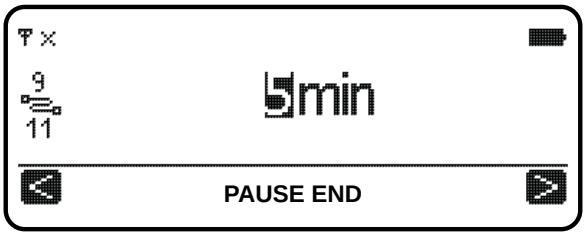


Fig. 60

Procedure for modifying the value of the final pause:

1. Press  to modify the value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.12. END TIME

This screen proposes an end time calculated on the basis of the parameters entered above.

The end time can be changed by lengthening or shortening the cycle time.

When the cycle time is changed, the controller will automatically calculate a new rewind speed to meet the entered end time.

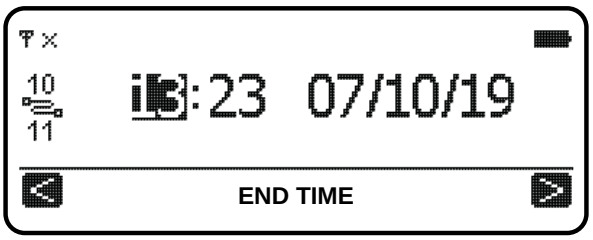


Fig. 61

Procedure for modifying the value of the final pause:

1. Press  to modify the value;
2. Press  to select the value to be modified;
3. Use the  keys to modify the value;
4. Press  to confirm;
5. Press  to continue with the work cycle programming;
6. Press  to go back to the previous page.

14.7.13. SUMMARY

In these screens (Fig. 62) a summary of all the work cycle settings just programmed can be displayed:

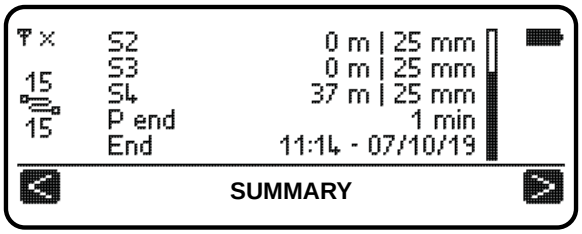


Fig. 62

- Press  to scroll through the list.

Description of the parameters listed:

ACRONYM	DESCRIPTION
Start	Start time
P Start	Pause start
S1	Sector 1 (length | mm or m/h)
S2*	Sector 2 (length | mm or m/h)
S3*	Sector 3 (length | mm or m/h)
S4*	Sector 4 (length | mm or m/h)
P End	Pause end
End	End time

***only visible if the controller has been set to manage 4 sectors.**

- Press and hold 

to start the work cycle.

- Press 

to go back to the previous page.

	**Before starting the work cycle, check that there are no animals, objects or people within the operating area of the machine and that the machine is safe.**

14.7.14. AWAITING THE START TIME

After starting the cycle, the controller will wait for the preset start time.

If the cycle has been configured with the start time equal to or earlier than the cycle start time, the MOTORMATIC SE motor-pump unit switches on according to the logic set by the OEM (if present).

Fig. 63

- Press 

to stop the work cycle.

14.7.15. INITIAL PAUSE

When the start time is reached, the controller starts moving the valves to begin watering with zero rewind speed, and then performs the initial pause (if it has been set to a value other than **"0"**).

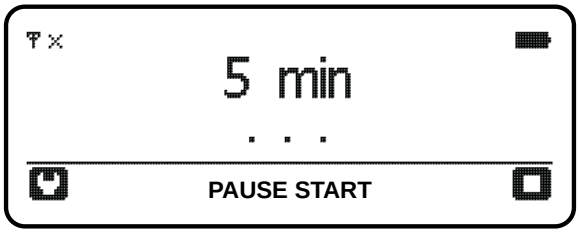


Fig. 64

- The initial pause can be modified by pressing 

.

NOTE	**At the end of this phase of the cycle, the return motor is activated (MTR ON).**

14.7.16. ADJUSTMENT

At the end of the initial pause, the controller switches to the work page and starts adjusting the return speed of the trolley to reach the set speed.

All the parameters of the work cycle can be monitored on this page:

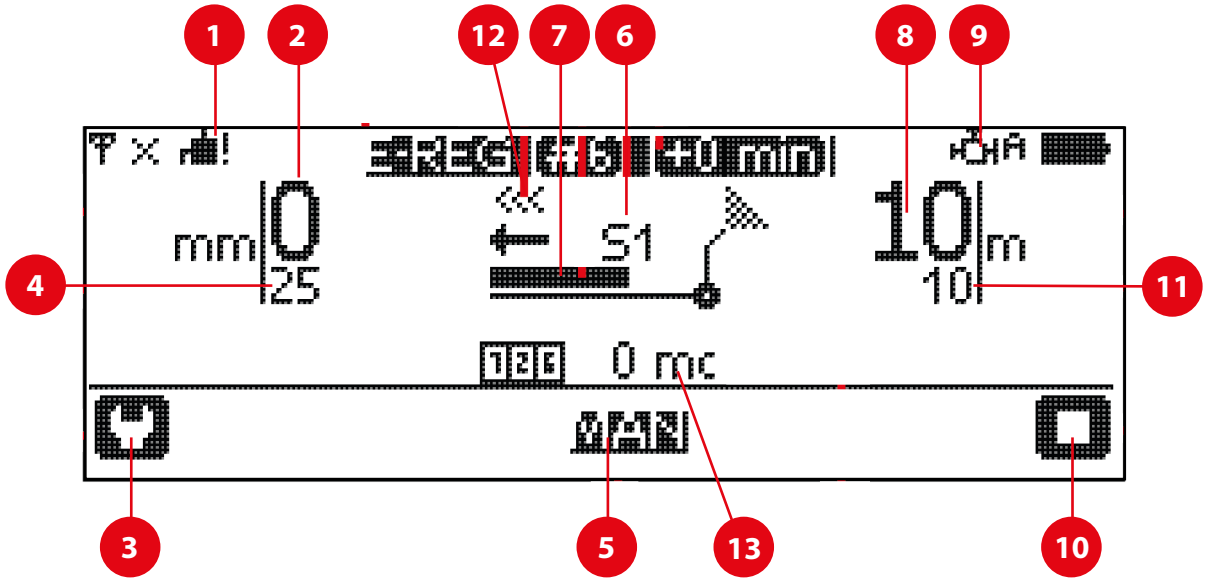


Fig. 65

POS.	Information	Description
1	Motormatic SE Status	The status of the Motormatic SE is shown if available).
2	Speed* detected	The current speed* of the sprinkler trolley.
3	Modification of settings	Key to access the menu of the settings that can be modified during the work cycle (see "14.7.17. MODIFICATION OF SETTINGS IN REAL TIME" on page 50).
4	Speed* set	The speed* of the current sector entered in the work cycle settings.
5	Manual valve movement	Function to switch to automatic or manual speed control, see "14.7.18. MANUAL VALVE MOVEMENT" on page 52.
6	Current sector	Indication of the sector in which the sprinkler trolley is located
7	Sector progress bar	Progress bar indicating the percentage of completion of irrigation in the current sector. Empty: 0%; Full: 100%
8	Remaining meters	Meters of pipe still to be rewound.
9	MTR status	The MTR status is shown (if available), see "14.6. MTR MENU MTR (IF ACTIVE)" on page 34
10	Cycle stop	Key to stop the irrigation cycle.
11	Total meters	Total meters of pipe unwound.
12	Movement status	
13	Data in rotation	The data of cubic metres of water and the date and time of the end of the cycle are displayed in rotation.

***speed is replaced by millimetres of water (mm) if the millimetre setting has been selected in the work cycle settings.**

14.7.17. MODIFICATION OF SETTINGS IN REAL TIME

During the work cycle it is possible to change certain parameters, follow the procedure below to make changes to the parameters:

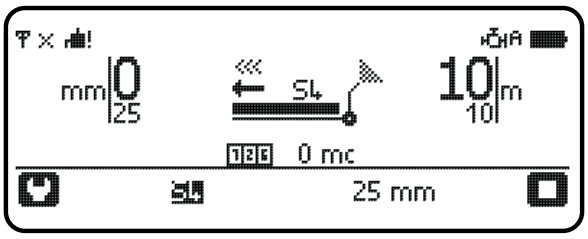


Fig. 66

1. From the screen (Fig. 67), press the  to access the work cycle settings:

The settings will be shown at the bottom of the display:

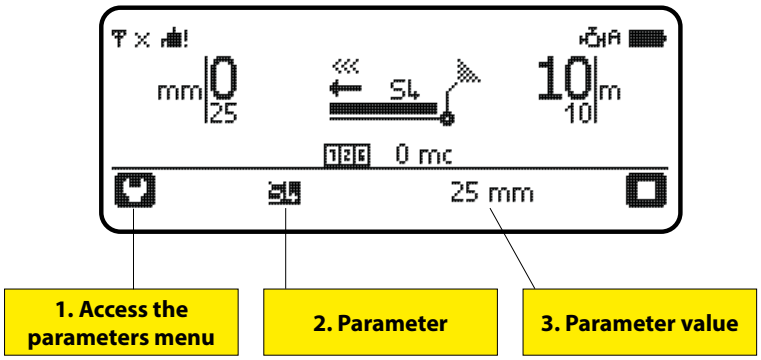


Fig. 67

2. Use  to position the focus on the name of the parameter **(2)**;
3. Press  to scroll through the settings;
4. Use  to position the focus on the value of the parameter to be modified **(3)**;
5. Press  ;
6. Use the  keys to modify the value;
7. Press  to confirm the value entered;
8. Press  to exit the work cycle settings or change other parameters.

Description of the parameters that can be modified during the work cycle:

	Modify the speed or millimetres of the current sector.
	Modify the required end time. Changing this parameter will change the working speed to comply with the new end date.
	Modify duration of the final pause.
	Modify the operating mode of the Motormatic SE controller (if present)
	Modify the water pressure value of the Motormatic SE (if present). If "MM mode" is set to manual operation (MAN), this data is in read-only format.
	Modify the motor speed of the motor-pump unit equipped with the Motormatic SE controller (if present). If "MM mode" is set to automatic operation (AUTO), this data is in read-only format.

Parameters available in the various irrigation cycle phases:

Stage	Parameters available for the modification
INITIAL PAUSE	Initial pause
ADJUSTMENT	All
FINAL PAUSE	Final pause

14.7.18. MANUAL VALVE MOVEMENT

During the work cycle, it is possible to switch to manual control of the trolley rewind speed by manually adjusting the position of the machine valves.

To switch to manual and move the valves:

1. Use  to move the focus to **MAN**;

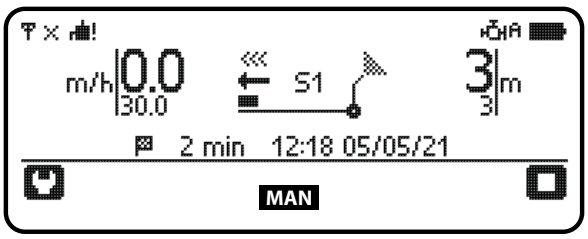


Fig. 68

2. Press  to switch to **"Manual"** mode;
3. Use  to move the valve.

To go back to **"Automatic"** mode, use  to move the focus to **AUTO** and press  .

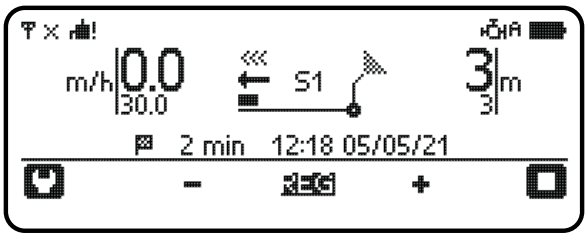


Fig. 69

14.7.19. FINAL PAUSE

When the trolley has returned, the controller will switch to the final pause.

In this phase irrigation continues with zero forward speed and the return motor is switched off if activated **(MTR OFF).**

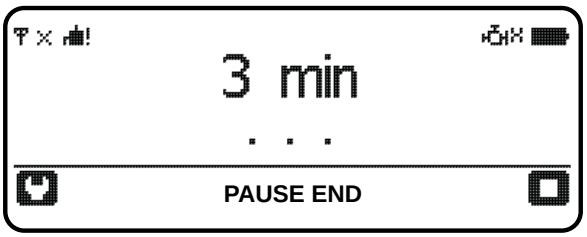


Fig. 70

1. Press  to modify duration of the final pause;
2. Press  to move the focus in the screen to the required value;
3. Press  to select the value to be modified;
4. Use the  keys to modify the value;
5. Press  to confirm;
6. Press  to stop the work cycle.

NOTE	**At the end of this phase, the motor-pump unit equipped with the Motormatic SE controller is stopped according to the logic set by the OEM.**

14.7.20. OPERATION COMPLETED

At the end of the final pause, the operator is notified of the end of the irrigation cycle by the following page:

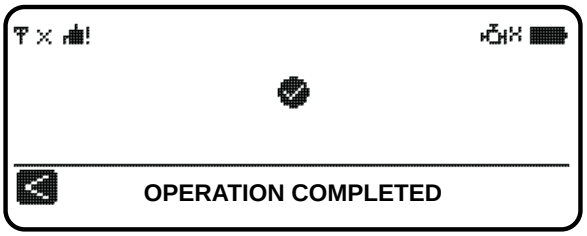


Fig. 71

- Press  to go back to the "UNWINDING" page, see “14.7.1. PIPE UNWINDING” on page 36

14.7.21. OPERATION INTERRUPTED

If the irrigation cycle is interrupted using the " " key or due to a lock-out alarm condition, the following screen is displayed:

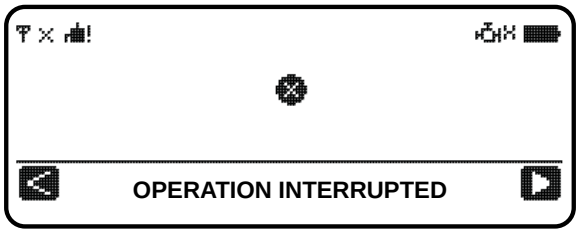


Fig. 72

1. Press  to permanently interrupt the irrigation cycle and go back to the **"UNWINDING"** page.
2. Press  to start the work cycle again.

NOTE	**When the work cycle is interrupted, the controller will activate a multifunction output for 120 seconds if this option has been activated by the OEM.**

	**Before starting the work cycle, check that there are no animals, objects or people within the operating area of the machine and that the machine is safe.**

15. EMERGENCY BUTTON

The Irrigamatic controller can manage an emergency circuit.

If the emergency circuit is activated, the controller will move the valves to close the water flow and stop the sprinkler movement, furthermore according to the type of configuration set by the OEM, it is possible to automatically switch off the motor-pump unit with the Motormatic SE controller and at the end of operations the controller will automatically switch off.

If the controller is switched on with the emergency circuit active, the following screen will be displayed and the controller will automatically switch off:

Fig. 73

In order to resume use of the Irrigamatic controller, the emergency circuit must be reset. The controller will signal that it has been switched on again after an emergency with a few quick flashes of the STATUS LED.

NOTE	**In order to use this function, make sure that the machine is equipped with an emergency circuit connected to the controller.**

NOTE	**When the emergency circuit is activated, the return motor (MTR) and the motor-pump unit equipped with the Motormatic SE controller can be stopped according to the logic set by the machine manufacturer.**

16. LUMINOUS - ACOUSTIC SIGNALLING AND STATUS LEDS

The Irrigamatic controller can manage a warning siren and lights.

NOTE	**In order to be able to use these functions, make sure that your machine is equipped with luminous and acoustic signalling devices.**

EVENT	STATUS LED	YELLOW LUMINOUS SIGNAL	RED LUMINOUS SIGNAL	SIREN
Lockout alarm	Steady on		Steady on	1 min ON – 4 min OFF
Non lockout alarm	Flashing			
Fault in the motors from the test page	Single activation, lasting 1 second			
Controller powered on in pipe unwinding mode		Flashing 0.25 sec ON – 5 sec OFF		
Cycle programming in progress		Flashing 0.25 sec ON – 5 sec OFF		
Irrigation cycle in progress		Flashing 1 sec ON – 5 sec OFF		
Pipe unwinding in progress		Steady on		0.25 sec ON – 2 sec OFF
Pipe to be unwound empty			Flashing 0.5 ON – 0.5 OFF	

17. SECONDO SPRINKLER

The Irrigamatic controller can manage a second sprinkler which is activated in the final phase of the irrigation cycle.

The user can choose the type of operation of the second sprinkler via parameters in the configuration #61, #62A e #62B "14.1. CONFIGURATION MENU" on page 20.

[#61 = 0 TIME]: SPACE-DEFINED REWIND

The second sprinkler will be switched on and off at certain pipe lengths.

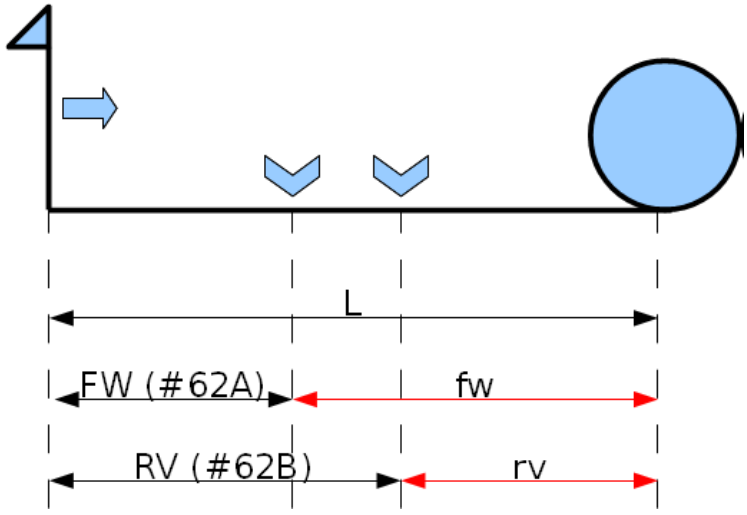


Fig. 74

The condition for the system to manage the second sprinkler is as follows:

- **RV greater than FW;**
- **L greater than FW.**

When the length of the rewound pipe reaches the value fw (fw = L - FW), the second sprinkler is activated ("forward" of the third motor for 60 s).

When the length of the rewound pipe reaches the value rw (rw = L - RW), the second sprinkler is stopped ("reverse" of the third motor for 60 s).

[#61 = 1 TIME]: TIME-DEFINED REWIND

The second sprinkler will be activated at a certain distance and is deactivated a certain time after activation.

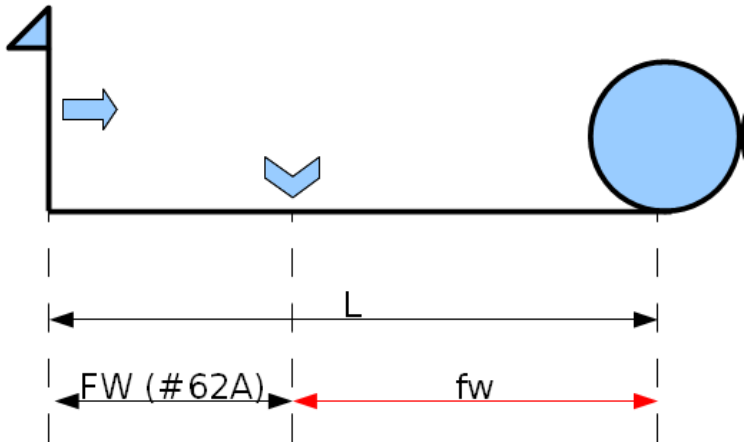


Fig. 75

The condition for the system to manage the second sprinkler is "L" greater than "fw".

When the length of the rewound pipe reaches the value fw (fw = L - FW), the second sprinkler is activated ("forward" of the third motor for 60 s).

When a time equal to the minutes set in parameter #63 in CONFIGURATION “14.1. CONFIGURATION MENU” on page 20 has elapsed, the second sprinkler is stopped ("reverse" of the third motor for 60 s).

[#61 = 2 SPAZIO]: TIME-DEFINED FINAL PAUSE

The secondary sprinkler is activated for the duration of the final pause.

The whole operation ("forward" + pause + "reverse") lasts as long as the final pause. This means that the user must set a final pause of at least 3 minutes.

When the end of the rewind event is triggered for the rewound pipe, the second sprinkler is activated ("forward" of the third motor for 60 s).

When a time equal to the final pause minus the actuation times of the second sprinkler has elapsed (60 s for "forward" + 60 s for "reverse") the second sprinkler is stopped ("reverse" of the third motor for 60 s).

NOTE	**Check if your machine supports this function and that the set lengths and times are appropriate.**

18. SYSTEM PARAMETERS

To change these parameters access the **"Configuration"** menu, see "14.1. CONFIGURATION MENU" on page 20.

Depending on the access level, the permitted parameters will be displayed as in the table (USER. MANUFACTURER, ADVANCED MANUFACTURER).

The "user" level password is: **1111**.

#	Description	Range	Default	UM	User	Manufacturer	Advanced manufacturer
#A1	Position of the flow valve.	0: input 1: output	0		✓	✓	✓
#A2	"Flow valve opening timeout". This parameter is ignored if #B25 = 0."	30 - 480	360	s		✓	✓
#A3	"Flow valve closing timeout". This parameter is ignored if #B25 = 0."	30 - 480	360	s		✓	✓
#A6	"Flow valve pulse opening time. This parameter is ignored if #B25 = 0."	0 - 480	30	s		✓	✓
#A7	"Flow valve continuous closing timeout". This parameter is ignored if #B25 = 0."	0 - 480	80	s		✓	✓
#A8	Minimum factor to determine if the trolley is lost	1 - 10	8			✓	✓
#A9	Maximum factor to determine if the trolley is lost	10 - 200	15			✓	✓
#A10	Bypass valve opening time.	30 - 480	60	s		✓	✓
#A11	Bypass valve closing time.	30 - 480	60	s		✓	✓
#A12	Wait time for zero pressure.	0 - 15	10	min		✓	✓
#A13	Position of the pressure switch.	0: missing 1: downstream NO 2: downstream NC 3: upstream NO 4: upstream NC	0			✓	✓
#14	Position of the speed sensor.	"0: on roller 1: on pinion"	1			✓	✓
#A15	Speed sensor pulse decimator. Number of speed sensor pulses that are ignored.	0 - 10	2			✓	✓
#A16	Unwinding end sensor.	0: missing 1: present	1			✓	✓
#A17	Rewinding end sensor.	0: missing 1: present 2: no pulses 1% 3: no pulses 2% 4: no pulses 3% 5: no pulses 4% 6: no pulses 5% 7: no pulses 6% 8: no pulses 7%	1			✓	✓
#A18A	Anemometer or rain/wind sensor.	0: missing 1: rain/wind 2: anemometer	0			✓	✓
#A18B	"Angular coefficient of the line describing the characteristic of the anemometer. * It is assumed that the line passes through the origin of the axes. The value is multiplied by 10 to take one decimal place. Only visible if #A18A = 1."	10 - 100	62	0	✓	✓	✓

#A18C	"Anemometer intervention threshold (for a minimum presence of #18D). Only visible if #A18A = 1."	5 - 50	15	km/h	✓	✓	✓
#A18D	"Anemometer hysteresis. Minimum duration of intervention condition present, for both activation and deactivation (the threshold is defined by parameter #18C). Only visible if #A18A = 1."	0 - 60	5	s	✓	✓	✓
#A19	Adjustment criteria.	0: m/h 1: mm water 2: free	0			✓	✓
#A20	Average flow rate of the flow meter.	500 - 3000	1000	l/min		✓	✓
#A21	Minimum flow meter value (at 4 mA signal if flow meter is analogue).	0 - 3000	0	l/min		✓	✓
#A22	Maximum flow meter value (at 20 mA signal if flow meter is analogue).	500 - 3000	2700	l/min		✓	✓
#A23	Percentage of the measured flow rate that defines the symmetric hysteresis during irrigation per mm of water.	0 - 100	5			✓	✓
#A24	Conversion factor of the speed sensor if the sensor is a "touch roller" type (mm/pulse).	50 - 2500	1000	mm/i		✓	✓
#A47	Unit of measurement.	0: EU 1: UK 2: US	0			✓	✓
#A48	Languages.	0: Italian 1: English 2: German 3: French 4: Spanish 5: Polish 6: Slovenian 7: Japanese 8: Danish	0			✓	✓
#A49	Diameter of the reel used for the mathematical calibration.	5000 - 25000	14000	mm		✓	✓
#A50	Width of the reel used for the mathematical calibration.	5000 - 25000	14000	mm		✓	✓
#A51	Diameter of the pipe used for the mathematical calibration.	400 - 2500	1250	mm		✓	✓
#A52	Length of the pipe used for the mathematical calibration.	0 - 1500	250	m		✓	✓
#A53A	Pipe correction factor used for the mathematical calibration.	0 - 20	0	%		✓	✓
#A53B	Filling factor used for the mathematical calibration.	50 - 100	100	%		✓	✓
#A54	Pulse per revolution used for the mathematical calibration.	10 - 1000	100	0		✓	✓
#A55	MMConnecta remote control activation	0: not active 1: active	1		✓	✓	✓
#A56	Logo shown on machine start-up.	LOGO	1				✓
#A57	Idle time before the board is switched off.	0 - 240	0	min	✓	✓	✓
#A58	Pipe length used as a reference to validate the alarm threshold provided by the user via notification.	0 - 1500	100	m	✓	✓	✓

#A59	"Fixed flow rate to be used during adjustment instead of the calculated flow rate. If the value is 0 then the value of the calculated flow rate is used. Only visible with "mm" adjustment."	0 - 2700	0	l/min		✓	✓
#A60	Indicates if there is communication with a Motormatic controller managing the motor-pump unit.	0: missing 1: present	0				✓
#A61	Third motor management mode.	0: space 1: time 2: final pause	0		✓	✓	✓
#A62A	"Metres of pipe rewound before operating the output controlling the third motor in "forward". This parameter is visible if #A61 = 0 / 1."	0 - 1500	250	m	✓	✓	✓
#A62B	"Metres of pipe rewound before "reverse" operation of the output controlling the third motor. This parameter is visible if #A61 = 0."	0 - 1500	250	m	✓	✓	✓
#A63	"Wait time in minutes after the end of the third motor drive in "forward" after rewinding the metres of pipe set to #A62A (#A61 = 1). This parameter is visible if (#A61 = 1)."	0 - 1500	0	min	✓	✓	✓
#A64	Metres of pipe unwound before operating the auxiliary output (X10).	0 - 1500	0	m	✓	✓	✓
#A65A	"Wait time in minutes before signalling zero pressure alarm. This time applies only to the first alarm "signal", for subsequent alarms a time of 5 seconds is used. If set to 0, the wait time is 5 seconds."	0 - 120	0	min		✓	✓
#A65B	Excludes movement of the flow valve during a zero pressure alarm condition. (1 = excluded, 0 = active)	0: on 1: off	0			✓	✓
#A66A	"Indicates the type of flow meter used. - 0 none - 1 analogue - 2 digital"	0: none 1: analogue 2: digital	0			✓	✓
#A66B	Litre/pulse ratio for the digital flow meter.	1 - 1000	100	l/i		✓	✓
#A67	"Minutes of no pulse received at the input of the X12 connector (second speed sensor) before reporting the alarm on the speed sensor. If set to 0, the function is disabled."	0 - 60	0	min	✓	✓	✓
#A68	Allows the activation of the auxiliary output (X10) to be excluded in the event of an interrupted process (e.g. following a null pressure).	0: activate 1: do not activate	0			✓	✓
#A69	Activates or deactivates the remote start procedure of the MotorMatic according to the user's choice. (See page XX)	0: MM off 1: MM start 2: MM start+stop 3: MM start+stop+emergency	0		✓	✓	✓
#A70	"Closing time of the control valve at the end of the work cycle. The purpose of this operation is to "lift" the trolley. If this value is set to 0 then the function of "lifting" the trolley is excluded."	0 - 240	0	s		✓	✓

#A71	"Hysteresis time for rewinding end sensor input. If this value is set to 0 then the "hysteresis" function of the input is limited to 500 ms."	0 - 240	0	s		✓	✓
#A72	"Presence in time of the adjustment error before forcing the end of the work cycle. "If set to 0, the cycle is not terminated as a result of the control error persisting."	0 - 60	10	min		✓	✓
#B1	"On time for flow valve pulse opening. This parameter is ignored if #A25 = 0."	10 - 25000	600	ms			✓
#B2	"Off time for flow valve pulse opening. This parameter is ignored if #A25 = 0."	10 - 25000	300	ms			✓
#B3	"On time for flow valve pulse closing. This parameter is ignored if #A25 = 0."	10 - 25000	600	ms			✓
#B4	"Off time for flow valve pulse closing. This parameter is ignored if #A25 = 0."	10 - 25000	300	ms			✓
#B5	On time for long bypass valve pulse.	10 - 25000	500	ms			✓
#B6	Off time for long bypass valve pulse.	10 - 25000	12000	ms			✓
#B7	On time for short bypass valve pulse.	10 - 25000	140	ms			✓
#B8	Off time for short bypass valve pulse.	10 - 25000	8000	ms			✓
#B9	"On time for very long bypass valve pulse. Also used for manual adjustment."	10 - 25000	1000	ms			✓
#B10	"Off time for very long bypass valve pulse. Also used for manual adjustment."	10 - 25000	12500	ms			✓
#B11	Percentage that determines the separation threshold between adjustment with short pulses and no adjustment.	0 - 100	1	%			✓
#B12	Percentage that determines the separation threshold between adjustment with long pulses and adjustment with short pulses.	0 - 100	10	%			✓
#B13	"Length of circular buffer used to construct the average speed. Default value depends on parameter #A14."	2 - 16	12	0			✓
#B14	Pressure switch polarity.	0: NA 1: NC	0				✓
#B15	Unwinding end sensor polarity.	0: NA 1: NC	0				✓
#B16	Rewinding end sensor polarity.	0: NO 1: NC	0				✓
#B17	Rain/wind sensor polarity.	0: NA 1: NC	0				✓
#B22	Minimum time between one pulse of the speed sensor and the next.	0 - 150	5	ms			✓
#B23	Mode used for adjustment.	0: normal 1: rapid	0				✓
#B24	Minimum threshold for sense current below which the bypass valve is considered to be at end of travel.	2 - 250	20				✓
#B25	Time to operate the flow valve continuously and without waiting for the end of travel. If this parameter is 0, management of the flow valve is based on pulses and the end of travel.	0 - 120	0	s			✓
#B26A	Indicates if the MTR (return motor) is enabled.	0: not active 1: active	0			✓	✓

#B26B	Minimum RPM value to consider the engine started for MTR (return motor).	100 - 1000	350	rpm		✓	✓
#B26C	Value for duration of excitation of the starter motor for the MTR (return motor).	5 - 100	15	s		✓	✓
#B26D	Value of pulses per revolution for the MTR (return motor).	1 - 1000	10			✓	✓
#B26E	Presence of the fuel probe for the MTR (return motor).	0: missing 1: present	0			✓	✓
#B26F	"Fuel level depleting value for MTR (return motor) If 0, the relevant alarm is disabled."	0 - 100	10	%		✓	✓
#B26G	"Depleted fuel level value for MTR (return motor) If 0, the relevant alarm is disabled."	0 - 100	5	%		✓	✓
#B29	Determine dual bypass valve management mode.	0: single 1: dual with extension 2: dual with brake	0			✓	✓
#B30	Brightness of LCD display backlighting in stand-by.	0 - 100	60	%			✓
#B31	Determines the type of LCD display used.	0: direct 1: inverted	0				✓
#B26H	MTR (return motor) shutdown via the actuator.	0: without actuator 1: with actuator	0			✓	✓
#B26I	Presence of engine oil pressure switch of the MTR (return motor).	0: missing 1: present	1			✓	✓

NOTE	**The controller must be restarted after a parameter has been modified.** **Matermacc provides the equipment manufacturer with the manufacturer's password.**

19. ALARMS

The controller keeps a list of the last 6 error conditions.

The error messages are displayed on the first row of the display at the top as follows:

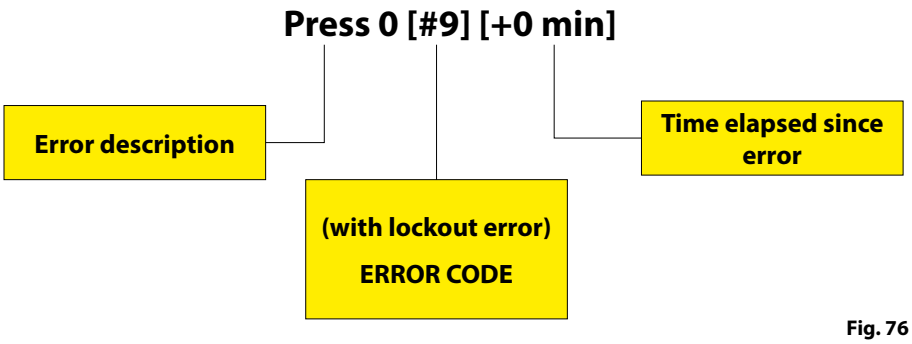


Fig. 76

The table below lists the errors that can occur during a work cycle and the messages displayed.

The purpose of the event list is to indicate a sequence of the errors that have occurred in order to help service personnel reconstruct the events if there is a malfunction.

#	Type	Description	Action	Lockout	Interruption	Display
1	Short circuit on the flow valve	A short circuit has been detected on the flow valve motor		YES	NO	FLUX CC
2	Timeout on flow valve opening	Flow valve opening time limit has been exceeded (par.C#2 or par. C#4).		NO	NO	F L U X Tm-0
3	Timeout on flow valve closing	Flow valve closing time limit has been exceeded (par.C#2 or par. C#4).		YES	NO	F L U X Tm-#
4	Short circuit on the bypass valve	A short circuit has been detected on the adjustment motor.		NO	NO	REG CC [#4
5	Timeout on bypass valve opening	Timeout on bypass valve opening		YES	NO	REG Tm-0
6	Speed adjustment limit	End of travel reached for the bypass valve without reaching the desired speed		NO	NO	E - REG [#6]
7	Trolley lost	No pulses for a specific time (par.C#8 and par. C#9).	A c c e l e r a t e rewind.	NO	YES	CARR ?? ???
8	Wind or rain has been detected	Wind or rain has been detected		NO	YES	ALL PV
9	Water pressure is null	Water pressure is null	If the flow valve is placed at the inlet and the pressure switch is placed downstream of the flow valve (par. C#13), the emergency cycle control is carried out	NO	YES	Press 0

10	Work end time exceeded	The work cycle is not finished when the programmed end time is reached (only if the programme has been recalculated with a time compression).		NO	YES	E-Tm
12	No pulses detected at the safety input	No control pulses for a time defined in configuration (par. C#67).		NO	YES	MOV
13	Motormatic cannot start	Automatic start of the motormatic was not completed successfully.		-	-	MM START
14	Emergency intervention	Emergency button pressed.	Reset emergency button	-	-	EMRG
15	The motormatic is off	The motormatic is off		NO	YES	MM OFF
16	The motormatic is in an alarm condition	The motormatic is in an alarm condition		NO	YES	MM ALARM
17	The return motor (MTR) is in an alarm condition	The return motor (MTR) is in an alarm condition		NO	YES	MTR ALARM
18	The return motor (MTR) is in fuel reserve condition	The return motor (MTR) is in fuel reserve condition		NO	YES	MTR FUEL

MOTORMATIC ERRORS

#	Error	Shutdown	Ramp	Cooling	Display
/*01*/	Low battery voltage	NO	NO	NO	ALL_LO_BATT
/*02*/	Fuel very low (reserve)	NO	NO	NO	ALL_LO_FUEL
/*03*/					taPriorita2
/*04*/	Fuel empty	YES	SLOW	YES	ALL_NO_FUEL
/*05*/	Motor water temperature high	YES	SLOW	YES	ALL_HI_TEMP
/*06*/	Alternator malfunction	YES	SLOW	YES	ALL_GEN
/*07*/	Pressure out of range. This alarm is raised in manual adjustment when the detected pressure deviates beyond a threshold defined in configuration (par. #023).	YES	SLOW	YES	ALL_BAR
/*08*/	High motor temperature	YES	SLOW	YES	ALL_HI_TEMP
/*09*/	Low water pressure in pipe	YES	SLOW	YES	ALL_NO_PRESS
/*10*/	Motor RPM above the calculated threshold	YES	SLOW	YES	ALL_RPM
/*11*/	Error detected on the pressure probe of the water in the pipe	YES	SLOW	YES	ALL_PROBE_FAIL
/*12*/	Motor RPM above the maximum value	YES	SLOW	YES	ALL_RPM_MAX
/*13*/	Diesel filter dirty	YES	SLOW	YES	ALL_FUEL_FILTER
/*14*/					taPriorita3
/*15*/	Low water level in motor	YES	SLOW	NO	ALL_LO_COOL
/*16*/	High battery voltage	YES	SLOW	NO	ALL_HI_BATT
/*17*/					taPriorita4
/*18*/	Error in pressure "tracking" during automatic adjustment	YES	FAST	YES	ALL_TRACK_PRESS
/*19*/	No flow of water	YES	FAST	YES	ALL_NO_FLUX
/*20*/	Irrigation stopped	YES	FAST	YES	ALL_STOP_IRR

/*21*/					taPriorita5
/*22*/	Low engine oil pressure	YES	FAST	NO	ALL_OIL_PRESS
/*23*/					taPriorita6
/*24*/	It is not possible to set the actuator to the stand-by position	YES	-	-	ALL_THROTTLE_KO
/*25*/	Motor cannot start. RPM not detected.	YES	-	-	ALL_START_KO
/*26*/	It is not possible to switch off the motor. The RPMs have not reached the minimum threshold within the maximum time.	YES	-	-	ALL_STOP_KO
/*27*/	The water pressure in the pipe is above the maximum value permitted	YES	-	-	MM_ALL_BAR_ MAX

MTR ERRORS

#	Error	Shutdown	Display
/*00*/			---
/*01*/	Motor cannot start	YES	ALL_START_KO
/*02*/	Low engine oil pressure	YES	ALL_OIL_PRESS
/*03*/	Motor water temperature high	YES	ALL_HI_TEMP
/*04*/	Fuel very low (reserve)	NO	ALL_LOW_FUEL
/*05*/	Fuel empty	YES	ALL_NO_FUEL

20. MMCONNECTA PORTAL

You must register in order to access the MMconnecta portal:

1. Connect to the Matermacc MMconnecta portal at https://matermacc.cloud/
2. Click on "SIGNUP", complete all the fields requested and click on CONFIRM
3. Log in using the credentials you have just created.
4. If you have forgotten your password, click on RECOVER PASSWORD, fill in the required data and enter the code received by e-mail.

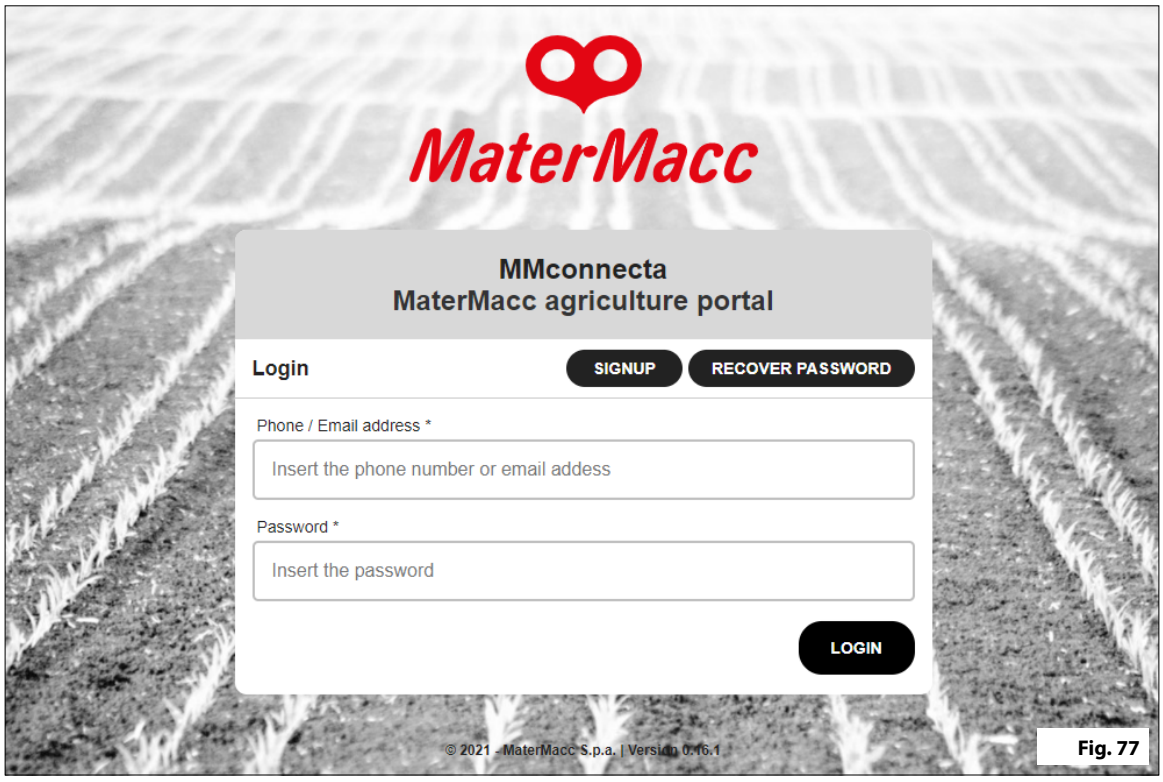


Fig. 77

In the MMconnecta portal you can monitor operation of your equipment with the MiPlus or Irrigamatic NET system.

It is also possible to manage the operators and customers to be associated with the work session, consult the reports of the work sessions carried out and export the data in CSV format.

Dealers have tools at their disposal for remote servicing of their machines.

DEALERS*	List of dealers (reserved for dealers)
DEVICES*	Customer machines (reserved for dealers)
SESSIONS*	Customer sessions (reserved for dealers)
SIM SUBSCRIPTION*	Customer portal subscriptions (reserved for dealers)
MY MACHINES	Machines registered to your account.
MY PROFILES	List of your machine operators
MY CUSTOMERS	List of your customers for whom work sessions are carried out
MY SESSIONS	Work sessions carried out by your machines.

RESERVED FOR DEALERS

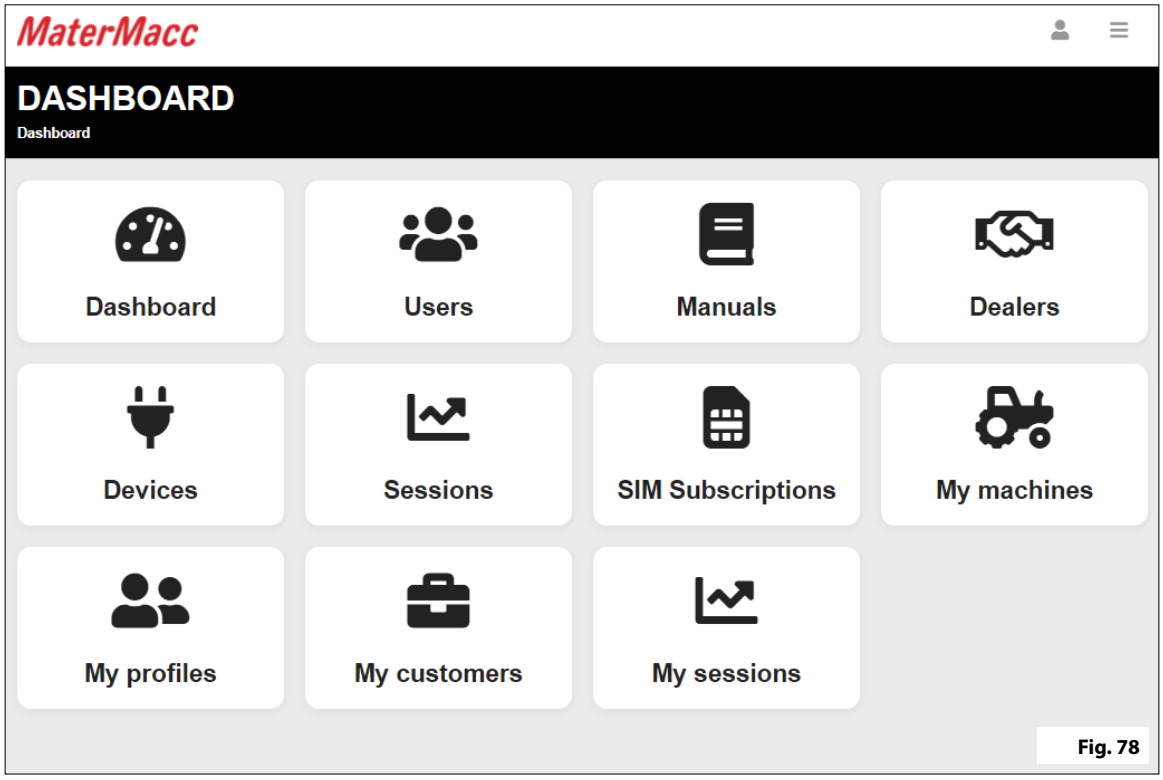


Fig. 78

NOTE	**You can install the MMconnecta web app on the launcher of your mobile device or on a PC.**

Registering your Irrigamatic NET controller to your account:

1. Click "My machines" to add your Irrigamatic NET
2. Click "REGISTER NEW MACHINES" and enter your "Invitation Code" (a 6-character code and numbers indicated in the paper report supplied with the controller). It is case sensitive.
3. Click "Confirm".
4. Your Irrigamatic NET is ready to be used.

20.1. USING THE IRRIAPP

From the MMconnecta portal it is possible to monitor the operating parameters of the sprinkler:

1. Connect to the Matermacc MMconnecta portal at https://matermacc.cloud/ and log in using the relevant credentials.
2. Click on "MACHINES"
3. Press → to access your Irrigamatic NET and monitor its operation.

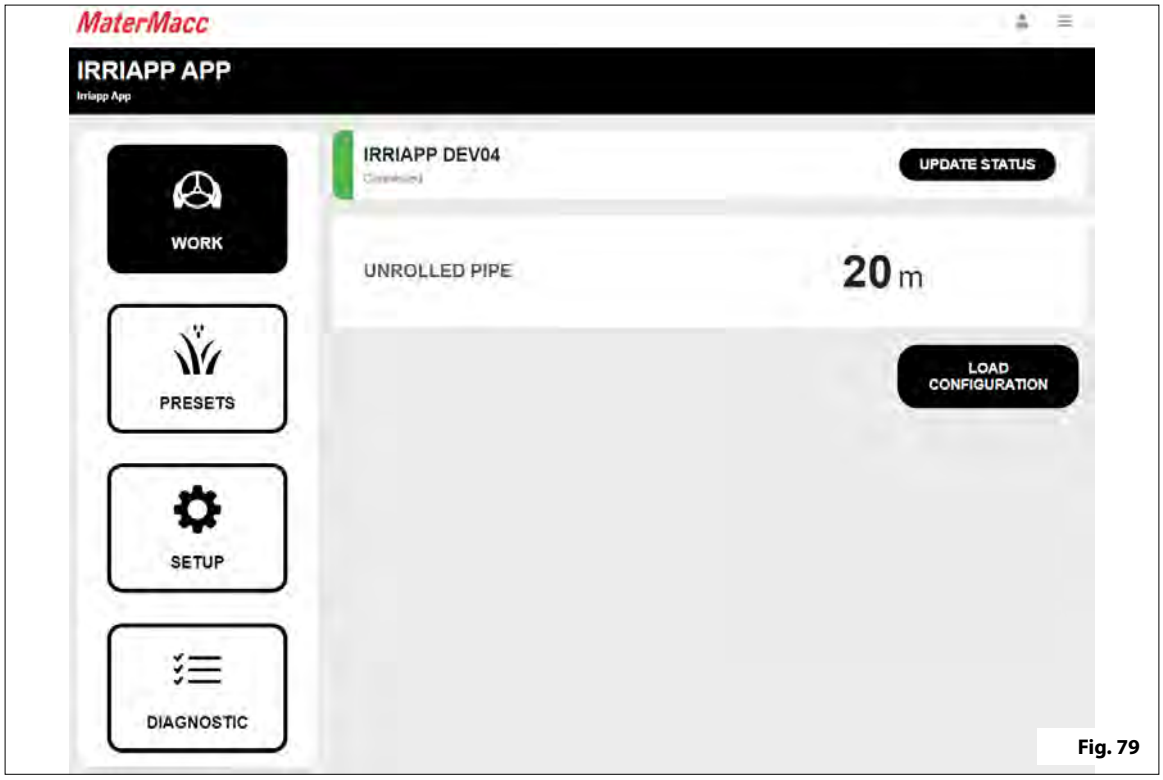


Fig. 79

WORK	Page for managing the work cycle of the machine
PRESET	To pre-configure the work cycle which can be recalled from the WORK page
SETUP	To manage machine operating parameters. *
DIAGNOSTIC	To view the machine data at the last synchronisation.

*Reserved for the technical assistance service

	**Commands to start and stop the machine or to change adjustment parameters are only intended to be used after having checked that there are no hazards/impediments within the operating area of the machine.**

To start a work cycle:

1. Press **WORK**;
2. Press **LOAD CONFIGURATIONS**;
3. Fill in the necessary fields and, if necessary, correct the value of the unwound hose metres and press **CONTINUE**;
4. Configure the work cycle parameters and press **CONTINUE**;
5. A summary of the configuration and the editable start and end time parameters is displayed and press **START;**

6. You will be asked if you want to save the configuration in the preset settings to be used again.
7. The work cycle starts.

20.2. ALARM AND NOTIFICATION SERVICE

The alarm and notification service of the Irrigamatic NET is provided by the "@MatermaccBot" Telegram Bot.

The Telegram application must be installed on the device where you want to receive notifications.

1. If not already present, install the "Telegram" application from the "Play store" or "App store" and register;
2. Click on Account Settings at the top right in the "Matermacc MMconnecta" portal (https://matermacc.cloud/);

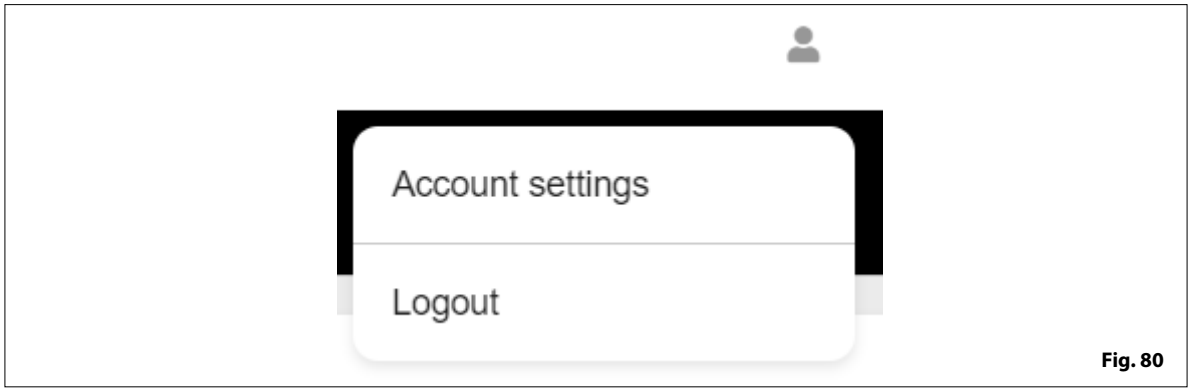


Fig. 80

3. Press **"Open Telegram Bot"**;
4. On the newly opened Telegram Bot, send a message containing your telephone number entered during registration on the **MMconnecta portal (username)**;
5. You will now receive notifications and alerts on your device via "@MatermaccBot";
6. To deactivate the notifications, send a message with the word "Deactivate to "@MatermaccBot".

20.3. SESSIONS

In this section of the portal, you can view all the work sessions carried out by your machines (MIPLUS and IRRIGAMATIC), print a report or export the data in CSV format.

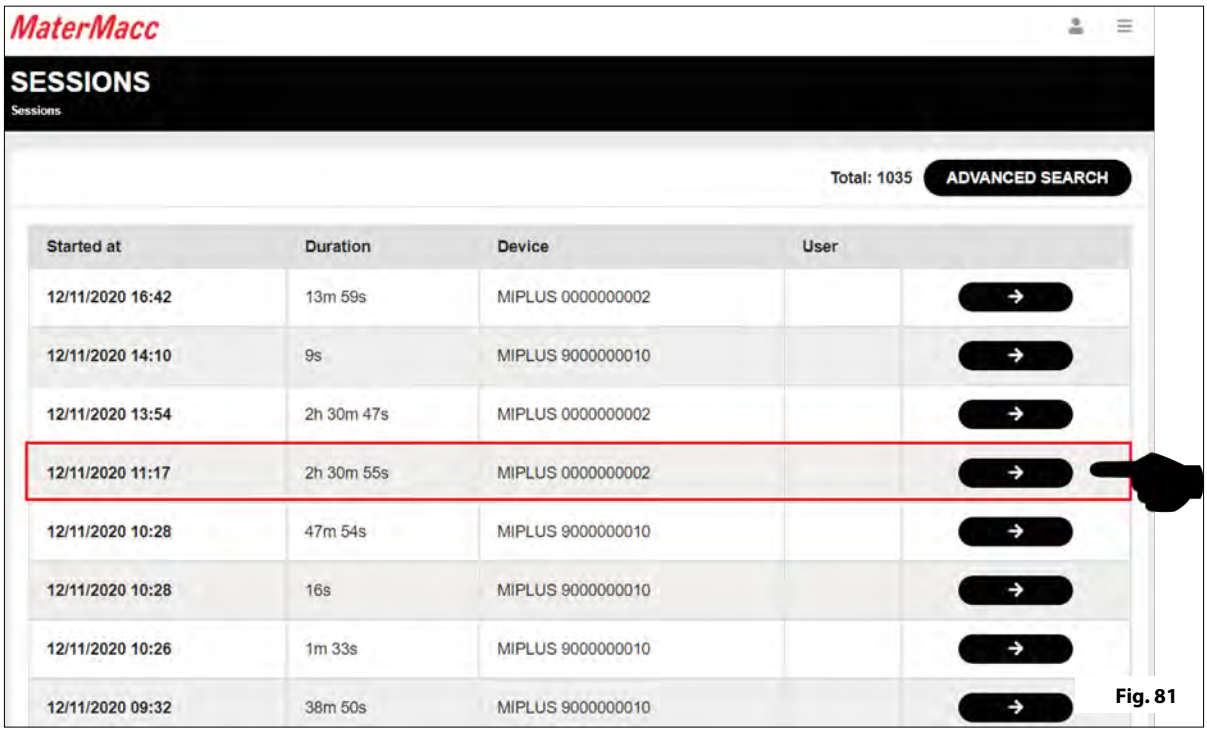


Fig. 81

1. To access the report, click on → in the relevant session.
2. General session information, preset information, history of events that occurred during the session, list of alarms and list of commands sent (Irriapp) will be displayed.

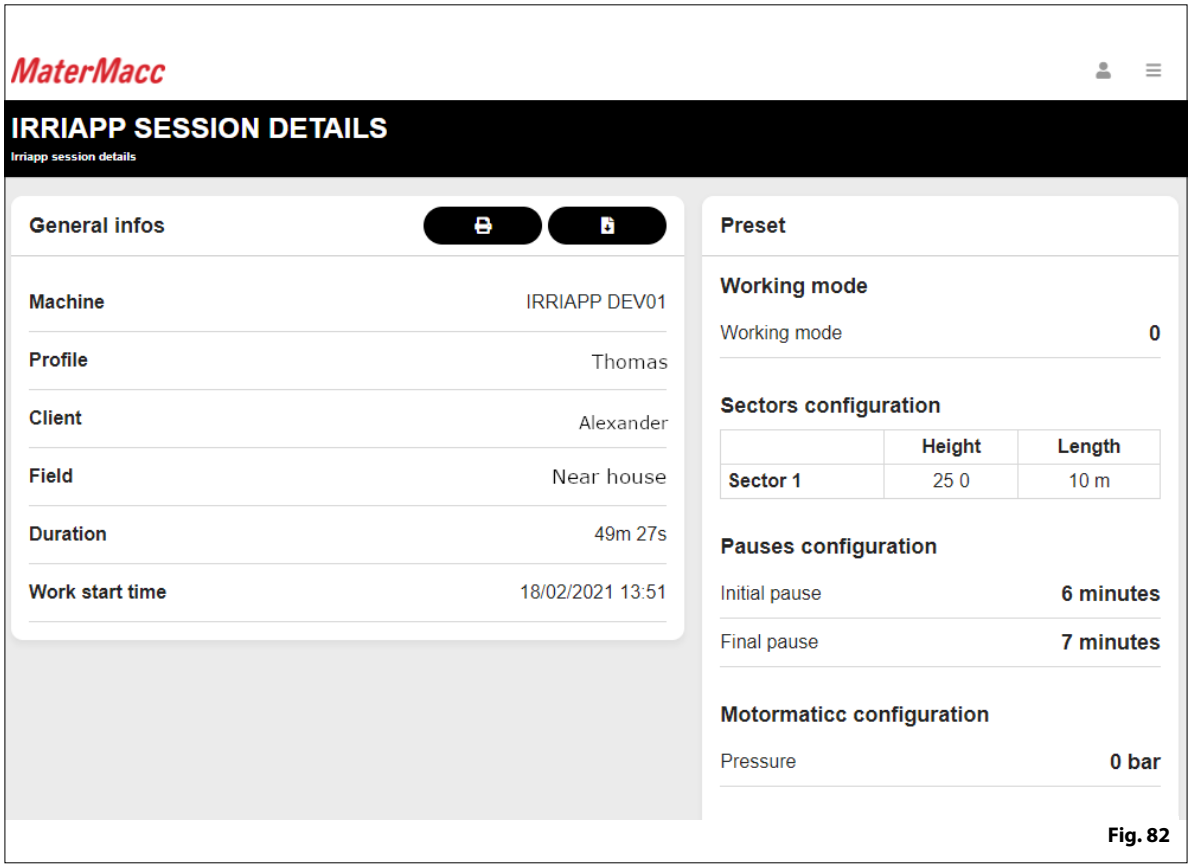


Fig. 82

Preset operations:

	Print out a session report.
	Export and download data of the work session in CSV format to a compressed folder.

20.4. ASSISTANCE

NOTE	Section reserved for enabled accounts such as dealers.

With a dealer account you can access the MMconnecta portal to service your customers' machines:

1. From the **Dashboard** section, press **DEVICES**.
2. The devices section displays the general data of the controller and the list of customer accounts with which the controller is associated.
3. Press  to access the customer panel you require.

	**Commands to start and stop the machine or to change adjustment parameters are only intended to be used after having checked that there are no hazards/impediments within the operating area of the machine.**

You can also analyse your customers' work sessions to identify any problems:

4. From the dashboard press **SESSIONS**;
5. Locate the session (if necessary applying a filter by pressing **SEARCH**) and click on → to display it.

20.5. PORTAL SUBSCRIPTION

NOTE	Section reserved for enabled accounts such as dealers.

In the **PORTAL SUBSCRIPTION** section you can activate a portal subscription to a controller of your own customer:

1. Press **ADD NEW**;
2. Enter the data of the controller and user,
3. Select the duration of the subscription.

NOTE	Matermacc will receive notification of the subscription order which has just ben created.

Available in PDF format

www.matermacc.it

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