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Commander FLT

USER MANUAL



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1. INTRODUCTION

1.1. IRRITEC - COMMANDER PROGRAMMERS

IRRITEC is a leading manufacturer of products and control systems for the irrigation market.

We produce software and hardware to operate, monitor and control many functions and applications used to manage crops in open fields and greenhouses.

Commander represents Irritec's range of products for the automatic management of irrigation, fertigation and filtration systems. Irritec develops and supplies worldwide computerized electronic systems for the agricultural industry. Irritec's products are now widely used in many countries and find direct application in the control and management of systems for the management of used to manage irrigation, fertigation, and filtration systems as well as and the technical environment of crops in open or protected fields.

Irritec's control systems improve farm efficiency and productivity.

Our products use advanced technologies controlled by an easy and intuitive human-machine interface (HMI). Irritec's control systems are easy to install, integrate, use and are constantly updated.

1.2 COMMANDER FLT PROGRAMMER

The Commander FLT programmer is a controller for the management and control of the filtering station normally used on irrigation, agricultural or industrial plants.

This manual describes the different menus and functions needed to program and manage the controller, and illustrates the elements it contains.

The Commander FLT programmer features a comprehensive range of functions, is easy to use as well as versatile, and allows the management of washing and backwashing of the filters automatically and efficiently.



2. INSTALLATION

2.1. VERSIONS AND MODELS

The Commander FLT programmer allows programming and managing the washing of a set of filters of up to 5 elements (or 4 filtering elements and 1 master valve).

The Commander FLT programmer is to be powered at 2.5 - 4.5 VDC and should be fitted with Latch-type solenoids.

Versione DC: features the housing for 3 C-series C 1.5 VDC batteries (rechargeable or non rechargeable). Batteries ARE NOT included. Average battery life cannot be defined here since it depends on the quality of the batteries, their initial charge level and above all on the type of battery and the use of the programmer. However, we recommend carrying out regular checks and replacing the batteries at the beginning of the irrigation season.

Versione AC: in case of an AC power supply, the housing of the batteries may be bypassed and the programmer may be powered using a common power supply with a 220VAC - 5VDC transformer similar to those used for mobile phones or smartphones. The transformer is NOT included and must be suitable for the intended use. For connections and the choice of the suitable product, we recommend consulting the Irritec's technical support department.

2.2. INSTALLATION

We recommend installing the Commander FLT programmer in an accessible position so that normal programming and maintenance operations may be carried out easily and correctly.

We recommend ensuring that the programmer is stable and fastened to a structure, or to a bracket directly on the filtering set, or placed in another suitable position; however, it should not be too far from the solenoids of the valves used for filter washing operations.

OPENING THE CASE

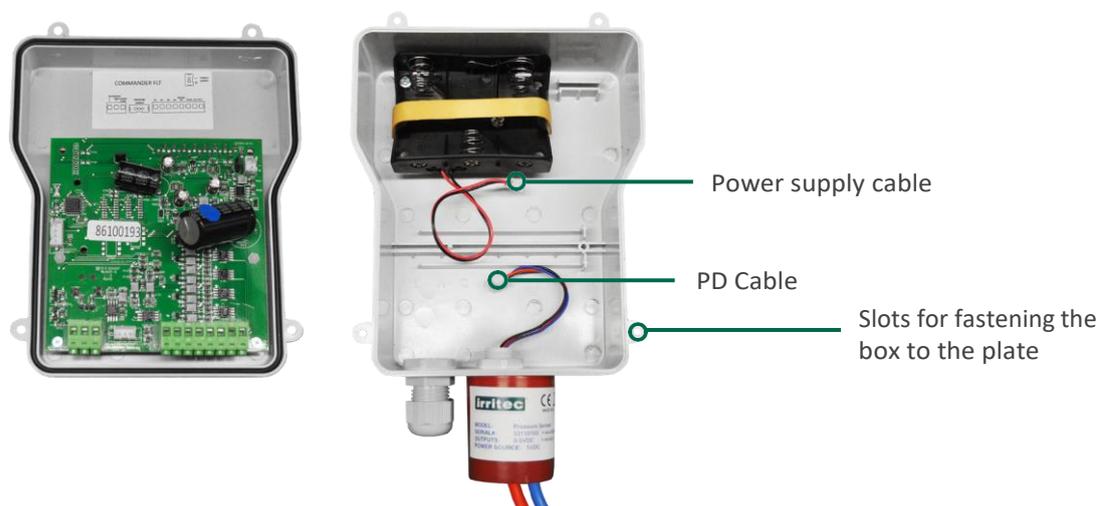
To open the case and access the connection board and the battery compartment, remove the 4 screws on the outside of the box.

⚠ When opening, pay attention to the cables of the PD and the battery compartment that are connected. ⚠

MOUNTING ON PLATE

The case of the Commander FLT programmer is ready for mounting on plate, which allows easy and quick installation

Important: by not drilling holes inside the box, it is possible to keep the case intact and consequently maintain the IP classes related to the efficiency and resistance to exposure to external agents.



2.3. POWER SUPPLY

To power the programmer, insert 3 type-C 1.5 VDC batteries in the dedicated compartment.

Important: Once all the elements (solenoids, PD, etc.) have been connected to the board, remember to connect the battery compartment power supply to the board

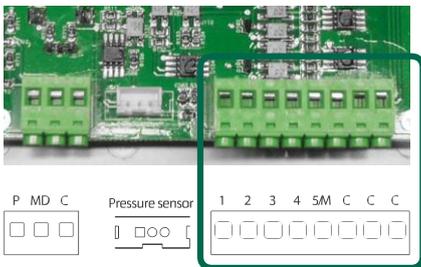


2.4. SOLENOID CONNECTION

In order to electrically connect the filtering elements and / or the Master Valve's control valves to the solenoids, it is necessary to open the box of the Commander FLT programmer and access the board located behind the front panel. For instructions on how to open the box, see point 2.2 of this manual.

We recommend carrying out any operation on the board after the power has been cut off.

- Open the box
- Remove the front panel from the base taking special care with the existing connections.
- For better access to the terminal block and therefore to the connection operations of the solenoid electric wires,
- Temporarily disconnect the power and PD connectors.
- Connect the solenoid wires (LATCH type) according to the following diagram:



Connectors 1 to 4: filter valve solenoids

Connectors 5: may be used for the MV or for the 5th filtering element

Important: in the presence of a Master Valve, connector 5 must always be used and the function must be activated by configuring the programmer from the display.

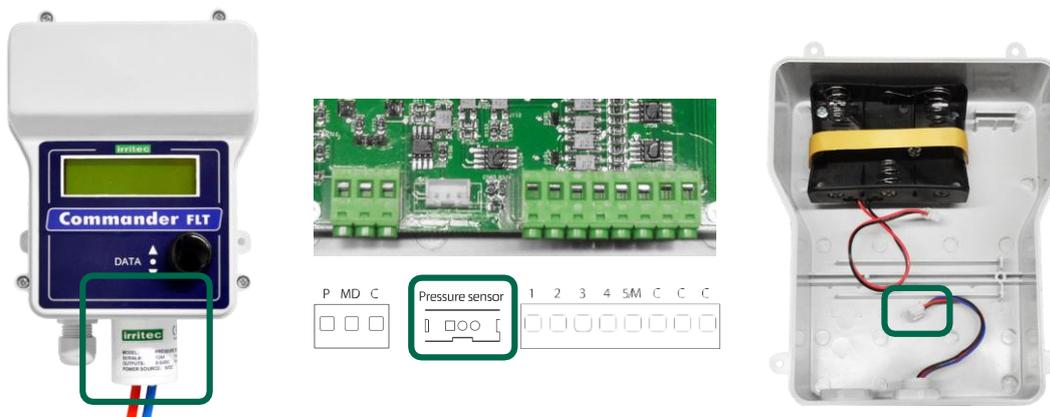


To ensure the integrity of the box during cable running operations, we recommend using the appropriate cable gland included and installed in the lower part of the case.

2.5. P.D. CONNECTION

The Commander FLT programmer is fitted with a sensor for measuring the pressure differential (PD). The sensor, located on the outside of the board, may be easily disconnected and replaced.

- Correctly connect the high and low pressure pipes (Red and Blue) to their respective sockets on the filtering station
- Connect the plug supplied to the differential pressure sensor in the special housing of the terminal block on the board.



2.6. EXTERNAL DIGITAL SENSOR CONNECTION

The Commander FLT programmer allows connecting an external digital sensor that shall operate when a consent is given for washing operations (for example by the water pressure sensor).

Connect the sensor to the highlighted terminal block following the diagram:

P Sensor consent input

DM differential pressure gauge input (Murphy)

COM sensor's common wire

Importante: the programmer will allow washing operations only when the contact **P** and **COM** is closed.
If there is no external sensor, close the contact using a jumper.

2.7. DISPLAY

The Commander FLT features a large 4-line display for easy consultation and editing of values and parameters. As soon as it is powered, the screen will display the model, the firmware version, the presence / activation of the main valve, the number of filtering elements and the delay time

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COMMANDER - FLT V2.1
Master : Yes
N Filt. : 04
Delay: 05 s
    
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2.8. KEYBOARD

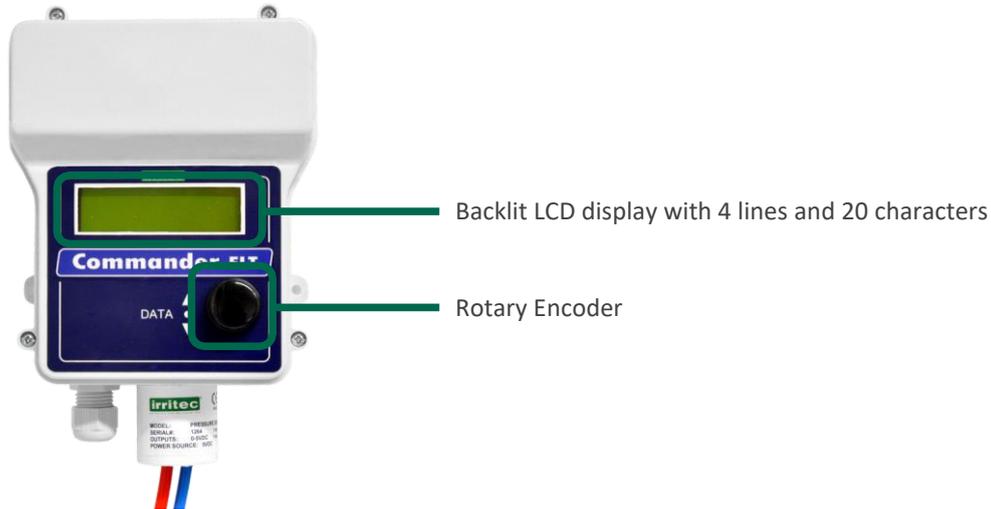
The FLT Commander does not feature a keyboard. Data entry takes place by means of a practical rotary button. Navigation in the menu (and editing of the value of the selected parameter) takes place by rotating the button (clockwise to go forward and anticlockwise to go backward).

Selection or confirmation takes place by pressing the button integrated in the knob.

3. CONFIGURATION & PROGRAMMING

3.1. FRONT PANEL

The Commander FLT programmer features a practical and efficient control panel consisting of a visible backlit LCD and a convenient rotary Encoder for managing the functions.



3.2. ROTARY ENCODER FOR THE MANAGEMENT OF MENUS & VALUES

The rotary encoder is easy to use and allows moving around the LCD and scrolling through the various functions by simply rotating the selection knob. When the knob is rotated, a mobile cursor on the display will clearly and easily identify the position on the menu and the current function.

By simply pressing the knob, you can access the selected function and edit its value by rotating the knob itself. Just press the knob to confirm the new value; the selection cursor will return to the previous menu.

- rotate to scroll through the menu and available functions to select or edit a value
- press to select the function or the value



3.3. PROGRAMMING & STATUS SCREEN

From the home screen it is possible to consult the system status and current settings at any time. Value selection and editing operations always take place by means of the encoder by turning and clicking the knob.

As soon as it is powered, the screen will display the model, the firmware version, the presence / activation of the main valve, the number of filtering elements and the delay time.

COMMANDER - FLT V2.1
 Master : Yes
 N Filt. : 04
 Delay: 05 s



- Interval between washes (hh: mm)
- Duration of washing of the single element (mm: ss)
- Pause time
- Current PD reading
- PD value setup for automatic washing intervention

Importante: to optimize the efficiency and life of the batteries, the programmer will turn off the screen after 2 minutes of inactivity. To reactivate it, simply rotate or press the encoder. When the screen is off, the programmer is still fully active and will continue to carry out any scheduled or ongoing operation.

3.4. STATUS SCREEN

A few seconds after the home screen has been displayed, the programmer shows the status screen it is possible to check the following:

Interval	00h00m
Flush Time	00m00s F1
Pause Time	00m00s P1
D P: 0.0	MP (0.0)

- The programmed time interval between washing operations (in hours and minutes)
- The programmed washing time (in minutes and seconds) for each filtering element
- The pause time between filters (in minutes and seconds)
- The reading of the actual differential pressure
- The set programmed differential pressure (in brackets)

Other system and / or status information:

- Low battery (B),
- Washing status if running (F1, F2, etc.),
- Current pause status (P1, P2, etc.),
- Active input of the external differential pressure switch (M)
- Active input for conditional operation (P).

3.5. MANUAL OPERATIONS

From the status screen, press the (enter) button to access the menu:

Manual activation
Configuration
Exit

- **Manual Activation**
- Configuration
- Exit

To carry out a complete washing cycle, go to Manual Activation and press the button integrated in the knob once.

3.5. AUTOMATIC PROGRAM CONFIGURATION

From the status screen, press the (enter) button to access the menu:

Manual activation
Configuration
Exit

- Manual Activation
- **Configuration**
- Exit

To define and enter the washing cycle parameters, go to Configuration and press the button integrated in the knob once.

1. Turn the selector to highlight,
2. Select the value (cursor flashing)
3. Press Enter to edit
4. Turn the selector to set the correct value
5. Press enter to confirm the desired value (Once a parameter has been set, the cursor jumps to the next line)

After having programmed the last line (PD), the device returns to the status screen.

Interval 99h59m
Flush Time 59m59s
Pause Time 59m59s
DP: 0.0 (3.0)

- Maximum programmable interval: 99h 59m
- Maximum washing time: 59 m 59 s
- Maximum pause time: 59 m 59 s
- Maximum differential pressure: 3 BAR.

4. TECHNICAL INFORMATION

DIMENSION	230X140X80mm
WEIGHT	0.7 Kg
BOX	ABS
IP INSULATION CLASS	IP-54
ELECTRICAL POWER SUPPLY	2.7 – 5 VDC
CONSUMPTION	20uA
WORKING TEMPERATURE	0°C a 60°C
WORK HUMIDITY LEVEL	0 a 95% not condensed
FUSES / ELECTRICAL PROTECTIONS	Autoresettable Poliswitcher
OUTPUT	Transistor
OUTPUT VOLTAGE	18VDC Latching type



This symbol on the product or its packaging indicates that this product shall not be treated as household waste. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. For more detailed information about recycling of this product, contact your local city office, your household waste disposal service or the shop where you purchased this product.

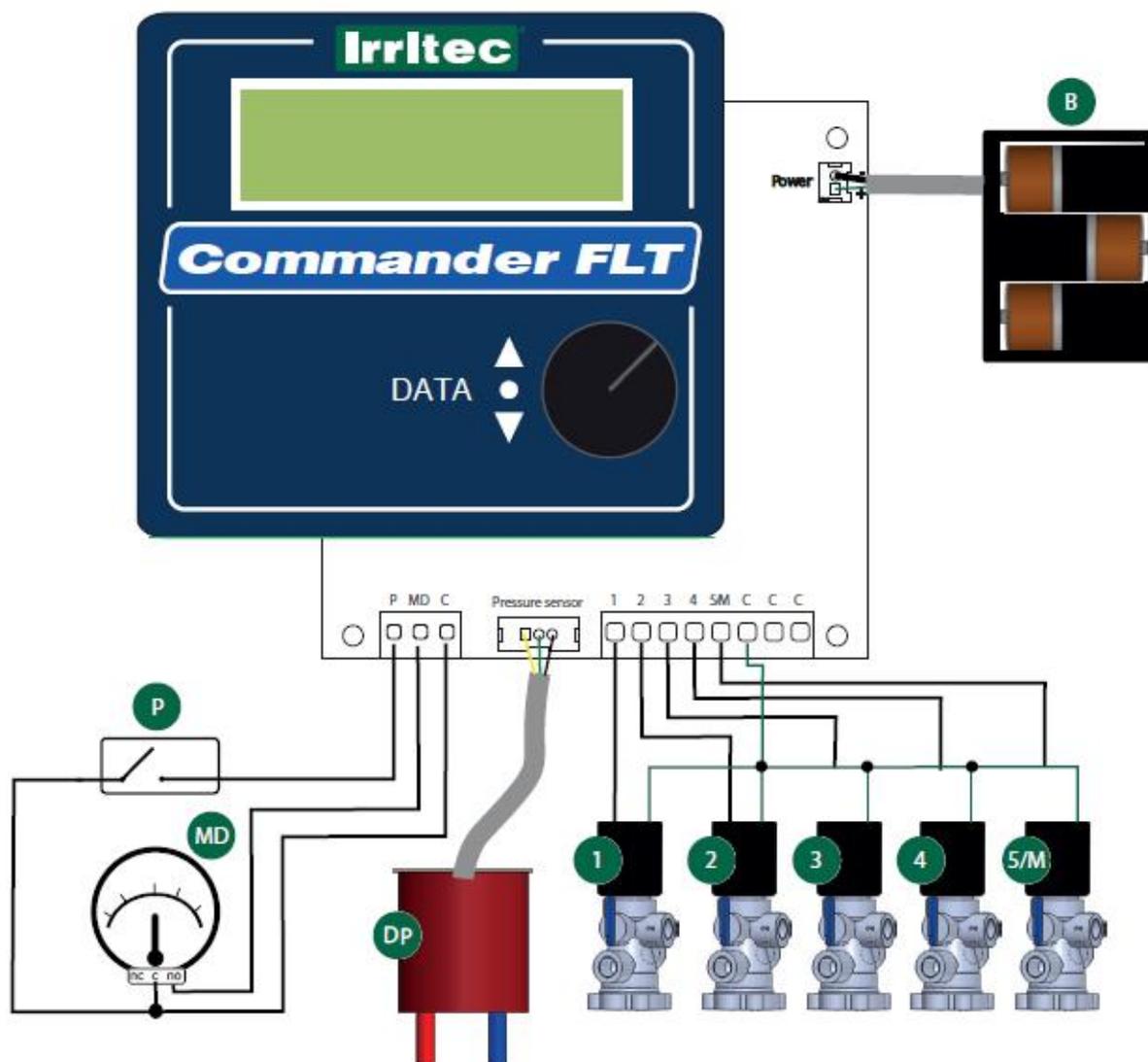
CERTIFICATE OF CONFORMITY WITH CE DIRECTIVES

- Electromagnetic Compatibility: 2004/108/CEE
- Electric Safety: 2006/95/CEE

Verification of compliance with regulations:

- UNE-EN 61000-6-4:2007 for electric safety
- EN 61000-6-3:2001 for conducted and radiated emissions
- EN 61000-6-1:2001 for electromagnetic immunity

APPENDIX I



ITALIANO

- ① VALVOLA 1
- ② VALVOLA 2
- ③ VALVOLA 3
- ④ VALVOLA 4
- ⑤/M VALVOLA 5/VALVOLA MASTER
- ⓑ ALIMENTAZIONE: 3 BATTERIE TIPO "C"
(non incluse)
- ⓓ MANOMETRO DIFFERENZIALE
(non incluso)
- Ⓟ INGRESSO DIGITALE ESTERNO
- Ⓛ DP DIFFERENZIALE PRESSIONE ANALOGICO

ENGLISH

- ① VALVE 1
- ② VALVE 2
- ③ VALVE 3
- ④ VALVE 4
- ⑤/M VALVE 5/ MASTER VALVE
- ⓑ POWER SUPPLY: 3 BATTERIES TYPE "C"
(not included)
- ⓓ DIFFERENTIAL MANOMETER
(not included)
- Ⓟ DIGITAL EXTERNAL INPUT
- Ⓛ DP ANALOG PRESSURE DIFFERENTIAL

ESPAÑOL

- ① VÁLVULA 1
- ② VÁLVULA 2
- ③ VÁLVULA 3
- ④ VÁLVULA 4
- ⑤/M VÁLVULA 5/VÁLVULA MASTER
- ⓑ ALIMENTACIÓN: 3 BATERÍAS TIPO "C"
(non incluidas)
- ⓓ MANOMETRO DIFERENCIAL
(no incluido)
- Ⓟ ENTRADA DIGITAL EXTERNA
- Ⓛ DP DIFERENCIAL DE PRESIÓN ANALÓGICO



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