

# RAINCONTROL

LCD Special



**MAC3 S.p.A.**

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## RAINCONTROL LCD Special

RAINCONTROL is a device for the totally automated control of the use of rainwater instead of that of the mains water supply, in cases in which drinking water is not strictly necessary. The device also monitors the rainwater recovery tanks in order to ensure that the water is at a correct level for use, and is automatically commutated in cases of low water levels, or in the event of total absence of water, into main water supply.

Raincontrol will monitor the level of the water inside your tank, and will immediately commutate to the mains water supply in the event of a lack of water. Once the tank has been restored to minimum level the appliance will return to rainwater mode, thereby avoiding any consumption of the mains water supply that is not strictly necessary.

<b>RainControl LCD</b>		
<b>Power Supply Voltage</b>	<b>117 V~ 50 ÷ 60 Hz</b>	<b>230V~ 50 ÷ 60 Hz</b>
<b>Code</b>	<b>TXL10X0100</b>	<b>TXL10Y0100</b>
<b>Consumption</b>	5,5 VA	
<b>Display</b>	LCD 2x16	
<b>Operating Temperature</b>	0 ÷ +50 °C	
<b>Storage Temperature</b>	-10 ÷ +60 °C	
<b>Operatine Range</b>	0 ÷ 5 m H <sub>2</sub> O	
<b>Max. overpressure</b>	20 m H <sub>2</sub> O	
<b>Measurement Accuracy</b>	± 1%	
<b>Resolution</b>	1 cm H <sub>2</sub> O	
<b>Minimum Obtainable Differential</b>	2 cm H <sub>2</sub> O	
<b>Output Relay</b>	10A 250 V	
<b>Available Channels</b>	n° 1	
<b>Housing</b>	NORYL UL94V0	
<b>Dimensions</b>	mm 105x90x73	
<b>Weight</b>	gr. 450	
<b>Device + Sensor Weight</b>	gr. 1290	
<b>Sensor Provided</b>	-	

<b>Sensor for RainControl LCD</b>		
<b>Housing</b>	<b>Stainless steel (AISI 316)</b>	<b>Brass</b>
<b>Code</b>	<b>USAP5A2F10</b>	<b>USBP5A2F10</b>
<b>Functioning Principle</b>	Ceramic Piezoresistive Capsule, calibrated and thermal compensated	
<b>Dimensions</b>	mm 32x76	
<b>Weight</b>	gr 840	
<b>Cable</b>	PVC (2 wires + compensation tube)	
<b>Cable Lenght</b>	Standard 10 meters	
<b>Installation</b>	Submersible or External	
<b>Operatine Range</b>	0 ÷ 5 m H <sub>2</sub> O	
<b>Max. Overpressure</b>	20 m H <sub>2</sub> O	
<b>Operating Temperature</b>	0 ÷ 50 °C	
<b>Power Supply Voltage</b>	15÷30 V 20mA max	
<b>Output Current</b>	4÷20mA Rt=250 OHM max	
<b>Notes</b>	Can be used in all type of water with water ph between 5÷9. For use in other kinds of liquids, contact the factory.	

## RainControl Special LCD PANEL PRESENTATION

The RainControl front panel features a LCD display, which displays all the data relative to the device as well as three function keys for interaction and parameter modification, as well as establishing the intervention point and for the activation or deactivation of a control relay of any power appliance (pump, motor) or indicator (lights, alarms etc).

The display of the device displays the name of the production company and the product on switching on:

MAC3 RAINCONTROLL (Fig.1).



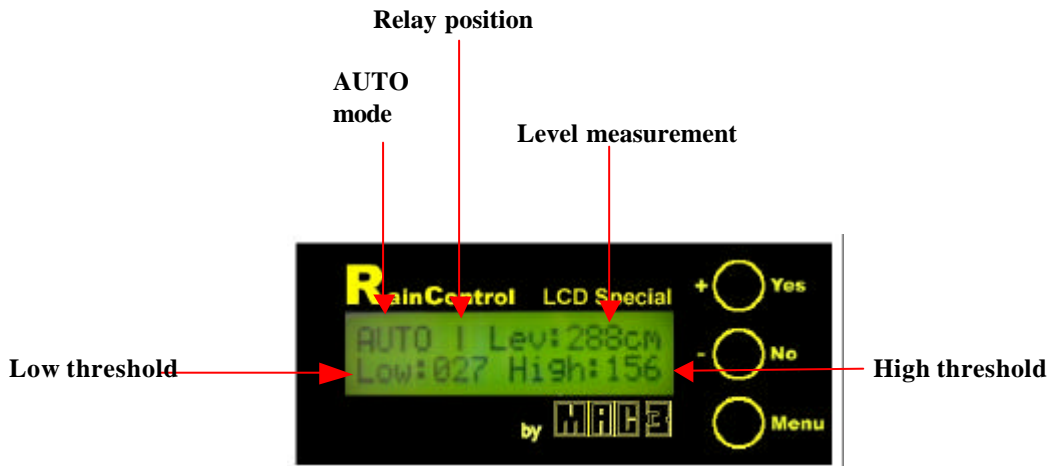
Fig.1

RainControl has eight functioning modes as follows:

AUTO, LOW, HIGH, MANUAL, DISPLAY, PROTECT, FRESH, TIMER. The table indicates the name and the mode relative to the function effected.

<i>Mode</i>	<i>Operation</i>
AUTO	→ Indicates the water level in the tank, with high and low thresholds
LOW	→ Low threshold setting
HIGH	→ High threshold setting
MANUAL	→ Manual solenoid setting
DISPLAY	→ Regulates the rear-illumination of the display
PROTECT	→ Device protection engagement
FRESH	→ Water collection from the mains supply
TIMER	→ Permanent time for auto-commutation of the solenoid

- **AUTO (fig.2)**



**Fig.2**

The AUTO mode which signified “automatic state” is the first to be displayed on switching on. The status name (AUTO) is displayed, together with the relay position (off/on); and the measurement in cm. of the level of the liquid in which the sensor is immersed (Lev: 288 cm), the low threshold (Low 027) and the high threshold (High:156) of the intervention, as set by the user. By AUTO mode is meant the normal functional mode of the device, the relay being attracted at the intervention intervals as set.

In AUTO mode the functions keys YES/+, NO/- are not engaged. By pressing the MENU key it is possible to see all the functional modes (**Table 1**).

Once the required mode has been selected (**Fig. 3**) on pressing the YES/+ key access to the same is permitted, while by pressing the NO/- key , or waiting for a few seconds the device returns to AUTO mode.



**Fig. 3**

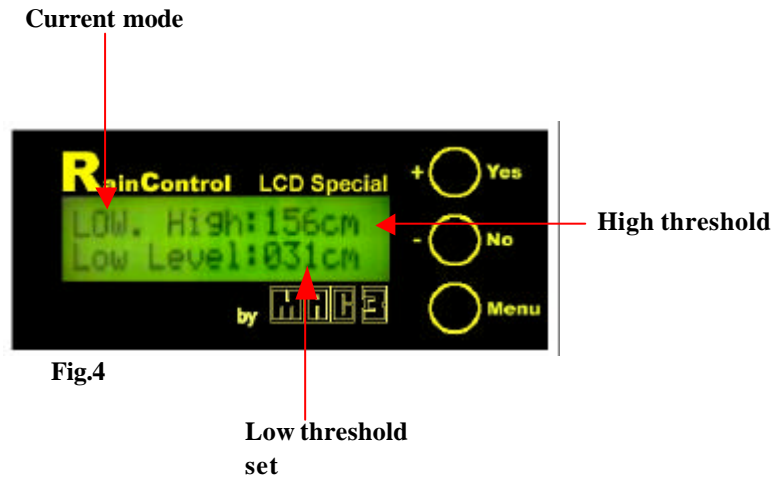
**Request for transfer to another mode**

**Table 1**

Go to Auto?
Go to Low?
Go to High?
Go to Manual?
Go to Display?
Go to Protect?
Go to Fresh?
Go to Timer?

## LOW AND HIGH THRESHOLD SETTING

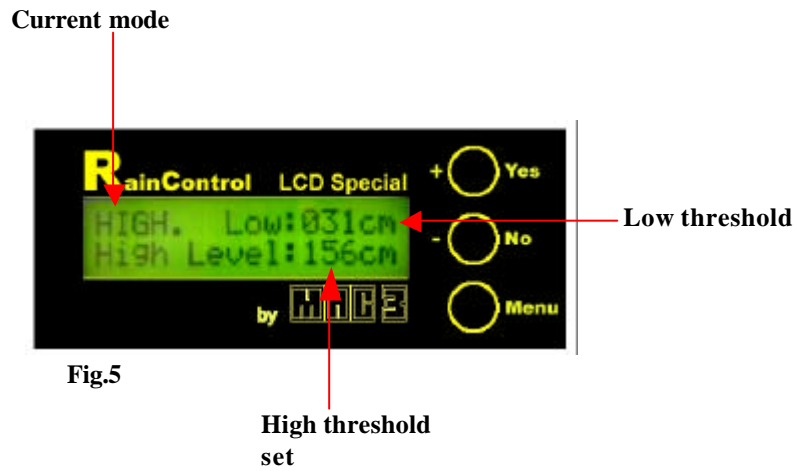
- **LOW threshold (Fig.4)**



In LOW Mode, the minimum relay intervention point is set in centimetres. The name of the state (LOW) appears on the display; and the current high threshold state set by the user (HIGH:156 cm) and the low threshold to be set (LOW LEVEL: 031 cm). By pressing the YES/+, NO/- keys it is possible to increase or reduce the low intervention threshold required; the increase or reduction in the low threshold cannot exceed the high threshold value.

Use the MENU key to actually change the functional mode: if not key is pressed the device returns to AUTO mode.

- **HIGH threshold (Fig.5)**



Use the HIGH mode to set the maximum relay intervention point in centimetres. The status name (HIGH) appears on the display, as well as the current low threshold (LOW: 031 cm) and the high threshold to be set (HIGH LEVEL: 156 cm). By pressing the YES/+, NO/- keys it is possible to increase or reduce the high intervention threshold required; use the MENU key to change the functional mode, should no key be pressed the device returns to AUTO.

## MANUAL SETTING

- MANUAL (fig.6, fig.7)



Request for transfer to relay ON



Request for transfer to relay OFF

In MANUAL mode, irrespective of the water level inside the tank, it is possible to commutate the water supply to the normal mains supply. The STATE name appears on the display (MANUAL) together with the relay position (RELAY: OFF, RELAY: ON). In the MANUAL mode on pressing the YES key it is possible to intervene on the relay passing from ON to OFF and vice versa. The NO/- key has no function.

Using the MENU key it is possible to actually change the function mode, should no key be pressed the device returns to AUTO.

## DISPLAY REGULATION

- DISPLAY (Fig.8)

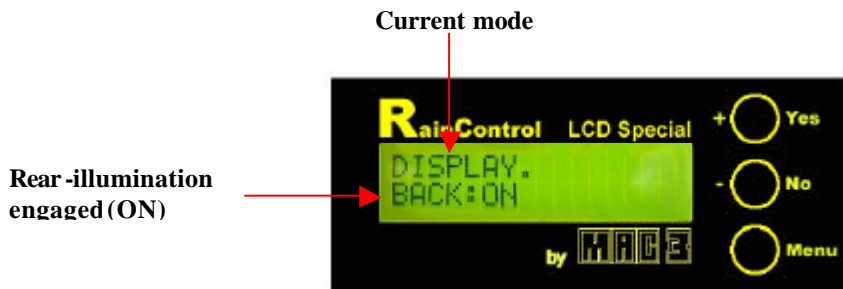


Fig. 8

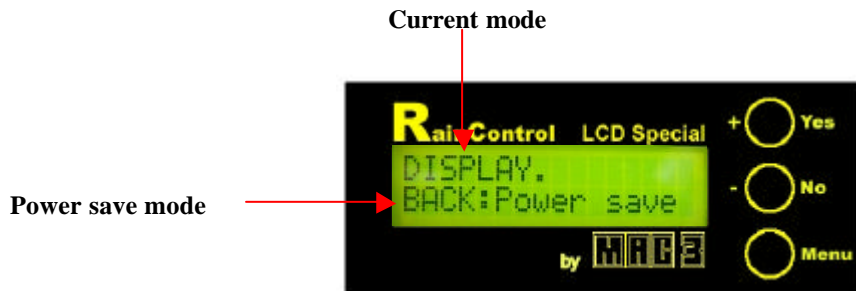


Fig. 9

The DISPLAY mode permits the checking of the display rear-illumination function. On switching on the rear-illumination of the device is engaged. On pressing the YES/+ key it is possible to set the POWER SAVE mode (Fig. 9) which will automatically switch off the rear illumination function automatically after 5 minutes of use. The NO/- key has no function.

Use the MENU key to change the functional mode; should no key be pressed the device returns to AUTO.

## PROTECTION ENGAGEMENT

- **PROTECT** (password: NO/-,YES/+,YES/+,YES/+,NO/-)

The appliance password is set at the factory and cannot be modified.

In PROTECT mode it is possible to either engage or deactivate the protection mode of the appliance so as to prevent any non-authorized personnel from modifying the parameter: on switching on the appliance protection is disabled.

The following appears on the display PROTECT: **DISABLED** if the protection is **disabled**, PROTECT: **ENABLE** is the protection is **active**.

- To engage the protection the following is necessary: (Fig.10)



Fig. 10

1. Enter PROTECT mode
2. Press the YES/+ key until the wording PROTECT: ENABLE appears (protection engaged)
3. Press the MENU key to memorize.

- To disable the protection proceed as follows: (Fig.11)



Fig. 11

1. Return to the PROTECT mode.
2. Enter the password pressing the YES/+, NO/- keys in the following sequence:  
**NO/-,YES/+,YES/+,YES/+,NO/-**
3. Press the YES/+ key until the word PROTECT: DISABLED appears (protection disabled)
4. Press the MENU key to memorize.

PASSWORD  
entry



Fig. 12

**NOTE:**

To activate the protection mode of the device, for access to every mode, the following will appear on the display ENTER-PASSWORD (Fig.12), a password will be requested consisting of five characters to be entered with the key combination YES/+ and NO/-; if the combination is correct access to the mode is possible for modification; in the event of incorrect combination no modification will be possible.

The password is set at the factory with the following sequence: NO/-.YES/+,YES/+,YES/+,NO/-.

## FRESH WATER

- FRESH

The FRESH mode enables the function of the system using the mains water supply only (for example during maintenance stages) by-passing the rainwater recover tank..

The YES/+ and NO/- keys have no function. By using the MENU key it is possible to change the function mode (fig.13); if no key is pressed the device will remain permanently in FRESH WATER mode.



Fig. 13

## TIMER SETTING

- TIMER

The TIMER mode makes it possible to set the time interval after which the valve will be engaged in order to check that it is correct working order. Using the YES/+ and NO/- keys it is possible to either increase or reduce the set time from one minute to 99 hours (fig.14).

Use the MENU key to change the function mode; should not key be pressed the device will return to AUTO mode.

Once the set time has passed, the valve will be engaged for 10 seconds, and the timer will resume from the previously set value.

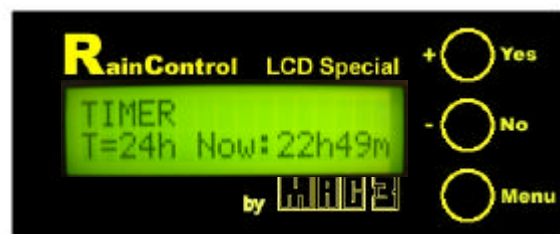


Fig. 14

## SERIAL CONNECTION (Optional)

The RainControl device may also be connected to a computer through serial port RS232 and the data transmitted from the device may be displayed using demonstrative software *RainControl LCDSpecial* (fig.13) which can be downloaded from our website [www.mac3.it](http://www.mac3.it).



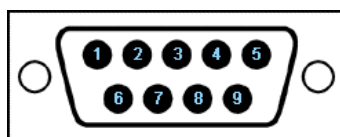
Fig.13

It is also possible to use any communicative software bearing the following parameters in mind:

<b>Bit per seconds (bps)</b>	300
<b>Data bit</b>	8
<b>Parity</b>	none
<b>Stop bit</b>	1
<b>Flow control</b>	none

### RS232 standard connections

DB9 connector	Sensopress output
2	13 TX
5	15 GND



Welding view

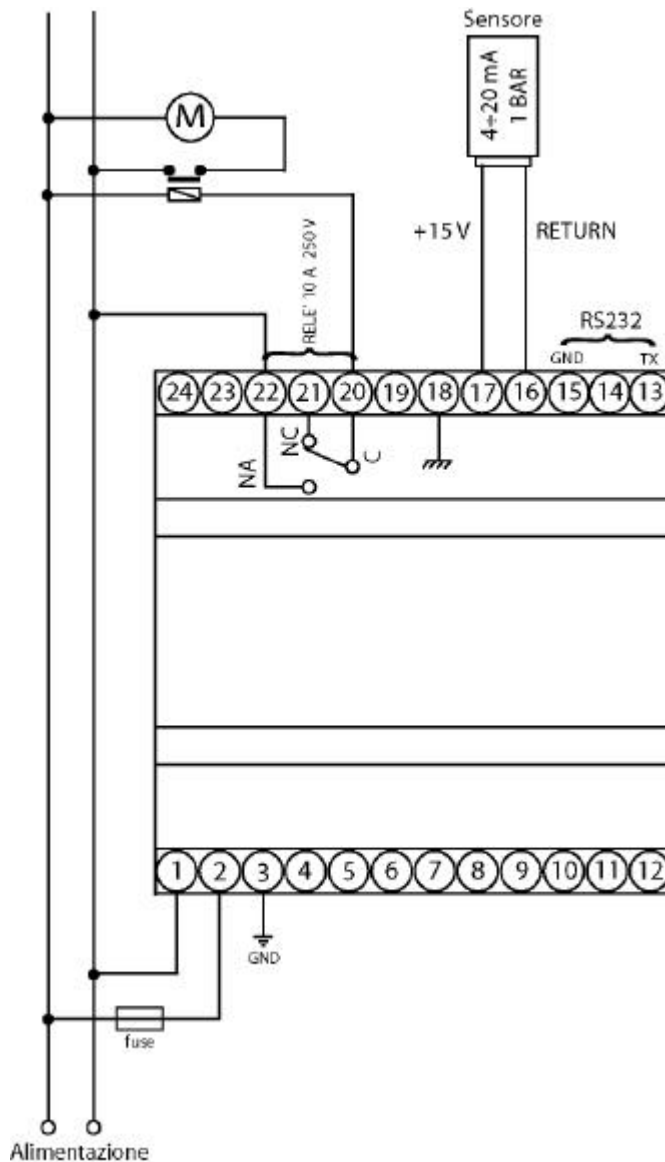
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# ELECTRICAL CONNECTIONS



Sensore = Sensor  
 Relè = Relay  
 Alimentazione = Power

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