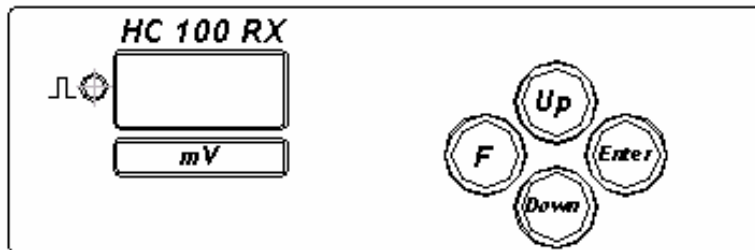


**PROGRAMMING INSTRUCTIONS  
FOR DOSING PUMP**

**HC 100 RX**



**MOD. HC 100 RX**

The pump series HC 100 RX is an electromagnetic proportional pump with an integral meter which can be directly connected to a Rx probe. The programming and the calibration (Zero and Gain) are very simple. The pump can be run in manual mode too at maximum frequency of 105 pulses/minute. On the front panel there is a GREEN LED to indicate that the pump is switched on.

**DESCRIPTION OF FUNCTIONS**

**F1 Manual Mode:**

The pump runs at a constant rate just like a manual pump. The display shows the number of injections per minute which can be set by programming any number from 0-105 pulses/min. This function is useful when priming the pump from new at the time of the installation.

**F2 Maximum number of injection per minute in proportional mode:**

The pump runs in proportional mode. The display shows the maximum number of injections per minute in proportional mode. This frequency can be set by programming from 000 to 105 pulses/min.

**L1 Proportional Mode:**

The pump runs proportionally according the difference between the measured reading and the Rx setpoint set in L1.

**CA1 Calibration of the Zero:**

the pump is ready for the calibration of the Zero.

**CA2 Calibration of the Gain:**

the pump is ready for the calibration of the Gain.

**SET Set-point Adjustment:**

The pump is ready for set point to be adjusted.

**PROGRAMMING**

*The Enter button allows to stop the pump (stand by state) and to start it*

**Manual Dosing:**

Press the **F** button until the display reads **F1** – manual.

Press the **Enter** button to confirm the choice. The display will show the number of pulses per minute blinking. This can be changed by pressing the **UP** and **DOWN** buttons to the desired reading and pressing the **Enter** to confirm. The pump runs at the desired number of pulses.

**Proportional Dosing:**

Once the calibration and set points have been adjusted read point 1), otherwise read the point 2)

1) Press the **F** button until the **L1** function– proportional function will appear.  
Press the **Enter** button to confirm the choice and then press again **Enter**.

**The pump starts to work in proportional mode.**

**2) THE CALIBRATION OF THE ZERO IS MADE BY THE PRODUCER AND IT IS NOT RECOMMENDED TO MODIFY IT. IF IT IS NECESSARY TO REPEAT THE OPERATION, FOLLOW THE NEXT PROCEDURE:**

**CALIBRATION of the ZERO:** Connect the two poles of the BNC on the pump ( input of the Rx probe). Press the **F** button until the **CA1** function – calibration function of the Zero- will appear. Press **Enter**.

**CALIBRATION of the GAIN:** Immerse the Rx probe into the buffer solution (for ex. 475 mV). Press the **F** button until the **CA2** function – calibration function of Gain- will appear. Press **Enter** to confirm the choice.

Wait until the measure is stable and then modify the reading by the buttons **UP** and **DOWN** until the value of the buffer solution (in the ex. 475 mV). Press **Enter** to confirm

**SETPOINT:** Press the **F** button until the **Set** function – set-point function- will appear. Press **Enter** to confirm the choice. Modify the reading by pressing the **UP** and **DOWN** buttons until the desired value. Press **Enter** to confirm the choice.

**MAXIMUM NUMBER OF INJECTIONS PER MINUTE IN PROPORTIONAL MODE:** Press **F** button until the **F2** function – maximum number of injections per minute - will appear. Press **Enter** to confirm the choice. The value of the maximum frequency (000-105 pulses/minute) blinks showing that it is possible to modify it. Set the desired value by pressing the **UP** and **DOWN** buttons. Confirm the choice by **Enter**.

**EXTREME VALUE OF THE INTERVAL OF PROPORTIONALITY:** Press **F** button until the **L1** function – proportional function- will appear. Press **Enter** to confirm the choice. The value of Rx measure to which the pump must work at the maximum frequency (**F2**) blinks showing that it is possible to modify it. Set the desired maximum or minimum Rx value by pressing the **UP** and **DOWN** buttons. Confirm the choice by **Enter**.

**The pump starts to work in proportional mode.**

## **EXAMPLES OF PROGRAMMING**

- **MANUAL 100 pulse/min**

Press the **F** button and select the **F1** function. Press **Enter** and while the display is blinking select 100 by pressing **Up** e **Down**, press **Enter** to confirm, the green Led will light up and the pump will work.

- **PROPORTIONAL to the Rx measure** with a set-point of 350mV, maximum flow of 80 injections per minute for an Rx value of 500mV.

After having calibrated the probe, choose the Rx set-point, the extreme value (L1) of the proportional interval and the maximum number of injections per minute as follows:

Press the **F** button until the function **Set** – set-point function.

Press the **Enter** button to confirm the choice. Modify the reading pressing the **UP** and **DOWN** buttons until the value of 350mV and then press **Enter** to confirm.

Press the **F** button until the function **L1** – proportional function- will appear.

Press **Enter** to confirm the choice. Set the value 500mV by pressing the **UP** and **DOWN** buttons and confirm by **Enter**.

Press the **F** button until the function **F2** – maximum proportional flow function- will appear.

Press **Enter** to confirm the choice. Set the value 80 by pressing the **UP** and **DOWN** buttons and confirm by **Enter**.

The green Led will light up and the pump will work.