



RSC Mid System Controller

STARTUP MANUAL



It is the installer's responsibility to read, understand, and comply with these instructions.
Please follow all OHSA safety regulations and local codes.

The RainFlo RSC Mid offers simple to use, all in one monitoring, automation, and control. For ease of use, each system controller includes a color touch screen human machine interface (HMI) for clear viewing and easy adjustments of functions and parameters. Follow the steps below to configure your RainFlo RSC Mid.

PLEASE NOTE: All images in this manual include a **default numerical nomenclature**. The numbers are placeholders and are not representative of the data that should be entered into the fields. The images are included for visual reference.

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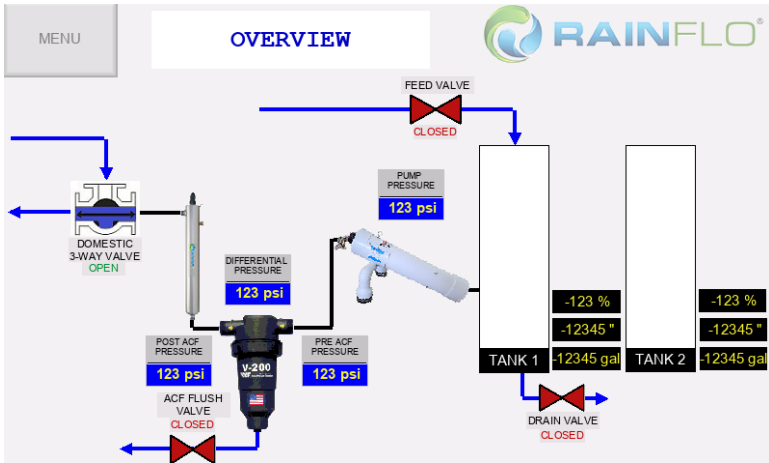
1. PLC VOLTAGES

The PLC is powered by 120VAC and 24VAC.

2. STARTUP INSTRUCTIONS

Overview Screen

When the PLC is powered on, an Overview screen will appear. Press the Menu button and go to Tank Configurations.




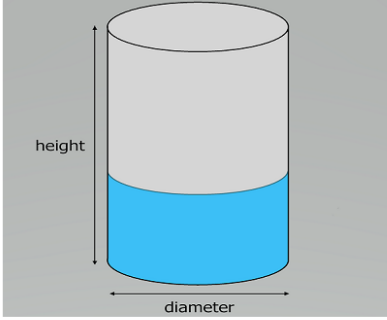
Tank Configuration Screens

Set the tank level for your storage tank.

MENU

**TANK 1
CONFIGURATION**





RECTANGLE

CYLINDER

CAPSULE

HEIGHT

12345 "

DIAMETER

12345 "

NOTE: ALL VALUES MUST BE IN INCHES

Choose the tank style: Rectangle, Cylinder, or Capsule.

The number of tanks available is 1 or 2.

Once the tank style is chosen, input the tank parameters:


- Rectangle: length, width, and height
- Cylinder: height and diameter
- Capsule: length and diameter

If tank 2 is used repeat the steps in the Tank 2 Configuration screen.

Limits Configuration Screen

There are four feed and valve level low and high limits to set based on the application.

NOTE: These configurations all function through manual mode.

MENU	LIMITS CONFIGURATION			
	LOW	HIGH		
DOMESTIC VALVE START/STOP LEVEL (%)	123 %	123 %		
FEED VALVE START/STOP LEVEL (%)	123 %	123 %		
TRANSFER VALVE START/STOP LEVEL (%)	123 %	123 %		
TOTAL DRAIN VALVE STOP LEVEL (%)	123 %			

Domestic Start/Stop Level

- Start (low)- The lowest level (%) the tank can be before it switches from system water to domestic backup water.
- Stop (high)- The level (%) that the water in the tank needs to reach before it switches out of domestic water and back to system water.

Feed Valve Start/Stop Level

- Start (low)- The level (%) the water in the tank needs to be before a secondary water source adds water to the tank.
- Stop (high)- The level (%) that the water in the tank needs to reach before it switches off the secondary water source to the tank.

Transfer Start/Stop Level

- Start (low)- The level (%) the water in the tank needs to be to turn off the overflow transfer valve.
- Stop (high)- The level (%) the water in the tank needs to be to turn on the overflow transfer valve.

Total Drain Stop Level

- The lowest level (%) the tank can go before turning off the drain valve.

Control & Parameter Configuration Screen

Set your pre filter rinse.

Pre Filter Rinse Run Time

- Set the frequency (hour or day) and the duration (minutes) of the pre filter rinse function.
- NOTE: Must choose hours or days. To enable rinsing on an hourly basis, set the hour frequency between 1 and 23 hours. To enable rinsing on a daily basis, set the desired number of days accordingly. Example: setting the frequency to 3 days will start a rinse cycle for the duration set every third day.

Duration: 1 min (suggested) UV Intensity/ORP

- Reading based on a 0 - 100% value

Pump Pressure (PSI)

- Check your sensor PSI range to input the min and max values

Low Pump Pressure Reset


- It is preconfigured, if system calls for water and there is no pump pressure, after 1 minute the system will switch over to domestic bypass until pump issue is resolved.

ACF Flush Control & Configuration Screen

Set the time and frequency of the auto clean filter feature.

MENU

ACF FLUSH CONTROL



DIFFERENTIAL SETPOINT (PSI)

12 psi

FLUSH DURATION (SECONDS)

-12 sec

MAX FLUSHES PER HOUR

-12

RESET ALARM/TRIP

RESET

INITIATE MANUAL FLUSH

START

NOT ACTIVE

Delta, or Differential, Pressure SetPoint

- The maximum pressure difference between pre-ACF pressure and post ACF pressure before the ACF flushes itself. This number must be between 1 and 20 PSI.

Flush Duration

- Set from 1 to 30 seconds

Max Flushes per hour

- Set from 1 to 10 times per hour

Reset Alarm/Trip

- Resets the ACF flush count and puts the system out of domestic bypass and back to normal operation if the max flushes per hour was exceeded

Initiate Self Clean


- Manual ACF flush button, will stay on for the time in flush duration

HMI Control Screen

Ability to manually open and close valves listed on the HMI screen.

MENU

HMI MANUAL CONTROL



DOMESTIC VALVE MANUAL	START	STOP	CLOSED
TRANSFER VALVE MANUAL	START	STOP	CLOSED
FEED VALVE MANUAL	START	STOP	CLOSED
TOTAL DRAIN VALVE MANUAL	START	STOP	CLOSED
PRE FILTER RINSE VALVE MANUAL	START	STOP	CLOSED

NOTE: MAKE SURE ALL BUTTONS ARE GREY BEFORE TRYING TO RUN IN AUTOMATIC.
THE SYSTEM WILL NOT RUN IN AUTOMATIC IF ANY VALVE BUTTONS ARE GREEN.

The domestic bypass valve, overflow transfer valve, feed valve, total drain valve, and pre filter rinse valves can be controlled manually by toggling the start and stop buttons next to each valve. MUST untoggle the Start and Stop buttons for the system to go back into normal operation.


Maintenance Alerts Screen

Set the desired maintenance frequency. Recommended frequencies are:

- System – 90 days (suggested)
- UV – 365 days (suggested)
- Filter – dependent on water quality

MENU

MAINTENANCE ALERTS




MAINTENANCE TYPE	FREQUENCY	RESET	ALERT
SYSTEM	-123 days	RESET	NOT ACTIVE
UV	-123 days	RESET	NOT ACTIVE
FILTER	-123 days	RESET	NOT ACTIVE

I/O Configuration Screen

A quick overview of the PLC capabilities and the valves and functions this system can offer.

MENU

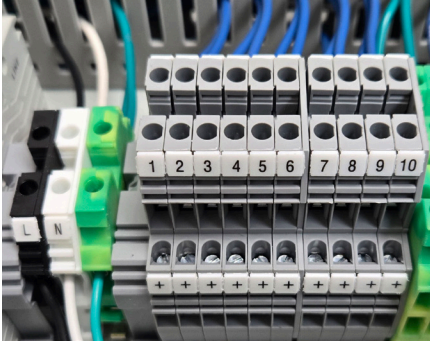
IO CONFIGURATION



AI 1	TANK 1 LEVEL TRANSDUCER	DO 1	DOMESTIC 3 WAY VALVE
AI 2	TANK 2 LEVEL TRANSDUCER	DO 2	ACF FLUSH VALVE
AI 3	PRE ACF PRESSURE TRANSDUCER	DO 3	TRANSFER VALVE
AI 4	POST ACF PRESSURE TRANSDUCER	DO 4	PRE FILTER RINSE VALVE
AI 5	UV INTENSITY	DO 5	DRAIN VALVE
AI 6	PUMP PRESSURE TRANSDUCER	DO 6	FEED VALVE
DI 1	DOMESTIC VALVE OPEN LIMIT		
DI 2	DOMESTIC VALVE CLOSED LIMIT		
DI 3	ACF FLUSH VALVE OPEN		
DI 4	ACF FLUSH VALVE CLOSED		



Wiring



120VAC and Inputs

TB-L: 120VAC L

TB-N: 120VAC N

Analog Inputs

TB-1: Tank 1 level 24VDC

TB-2: Tank 2 level 24VDC

TB-3: Pre ACF pressure 24VDC

TB-4: Post ACF pressure 24VDC

TB-5: UV intensity 24VDC

TB-6: Pump pressure 24VDC

Back Row: 24VDC+ for analog inputs

Discrete Inputs

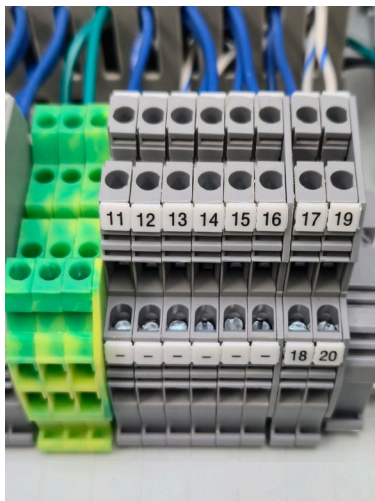
TB-7: Domestic valve open limit switch 24VDC

TB-8: Domestic valve closed limit switch 24VDC

TB-9: ACF valve open limit switch 24VDC

TB-10: ACF valve closed limit switch 24VDC

Back Row: 24VDC + for discrete inputs



Discrete Outputs

TB-11: Transfer valve 24VDC

TB-12: Pre filter rinse valve 24VDC

TB-13: Drain valve 24VDC

TB-14: Feed valve 24VDC

TB-15: Domestic valve open from 24 of relay

TB-16: Domestic valve close from 22 of relay

TB-17: ACF flush valve+ from 12 of relay

TB-18: ACF flush valve+ from 14 of relay

TB-19: ACF flush valve- from 22 of relay

TB-20: ACF flush valve- from 24 of relay

Back Row: 24VDC negative for discrete outputs

3. TROUBLESHOOTING

Issue	Solution
Basic functions	<ul style="list-style-type: none">• If system does not have power, check disconnect with multimeter to check power• If the domestic bypass, feed valve, or total drain are not starting and stopping at correct levels, check the limits configuration (page 3)
No reading on HMI for level transducer	<ul style="list-style-type: none">• Ensure wiring at junction cable connector is tightened down. Positive goes to L, Negative goes to N, and Shield to ground• Ensure wiring at PLC is tightened down• Ensure tank configuration has been completed
Inaccurate tank level reading	<ul style="list-style-type: none">• Ensure the height dimension in the tank configuration is based on max fill height (Not total tank height which includes any dimensions over the overflow)• Change level transducer height to match the suction height on tank
No or low pressure	<ul style="list-style-type: none">• Troubleshoot the pump• Check pipe for damage or debris

4. WARRANTY

RainFlo products are covered by a one-year limited warranty from the date of purchase. The warranty only applies to materials and workmanship and does not cover incidental damage to other property. Warranty does not apply to incorrect handling, use, assembly, or installation. Within the warranty period, we will repair or replace the defective component at our discretion. Return shipping is not included. If failure is a defect in materials or workmanship, the product will be repaired or replaced and returned free of charge. Please refer to RainHarvest Systems' terms and conditions of sale for other applicable details and restrictions.

