Bottle Washer

Installation & Operation Manual

Model: Zelio Control Cabinet
Bottle Washers w/Nipple Basin
Stand Alone Bottle Washers

WESTWAARD
FABRICATORS for DARITECH

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	--/--/----	Manual Completion
Rev 1.1	11/07/16	Added hp/amps to schematic
Rev 1.2	04/28/17	Update Schematic
Rev 1.3	07/2/21	Cycle Display Codes
Rev 1.4	04/10/24	Updated Codes
Rev. 1.5	01/14/25	Cycle Selection Parameters Update
Rev. 1.6	9/16/25	Power Relay part # update

Explanation of Symbols

The following symbols are used within this manual to alert the reader to important information or potentially hazardous conditions.

Safety Symbols draw attention to adjacent text and should always be read and thoroughly understood.

	WARNING! Warning signals danger to life or health of personnel. Death or serious injury may result if the danger is not avoided.
	CAUTION! Caution signals dangerous situations. Injury may result is the danger is not avoided.
	ATTENTION! Attention signals important information on risks for product or the environment.

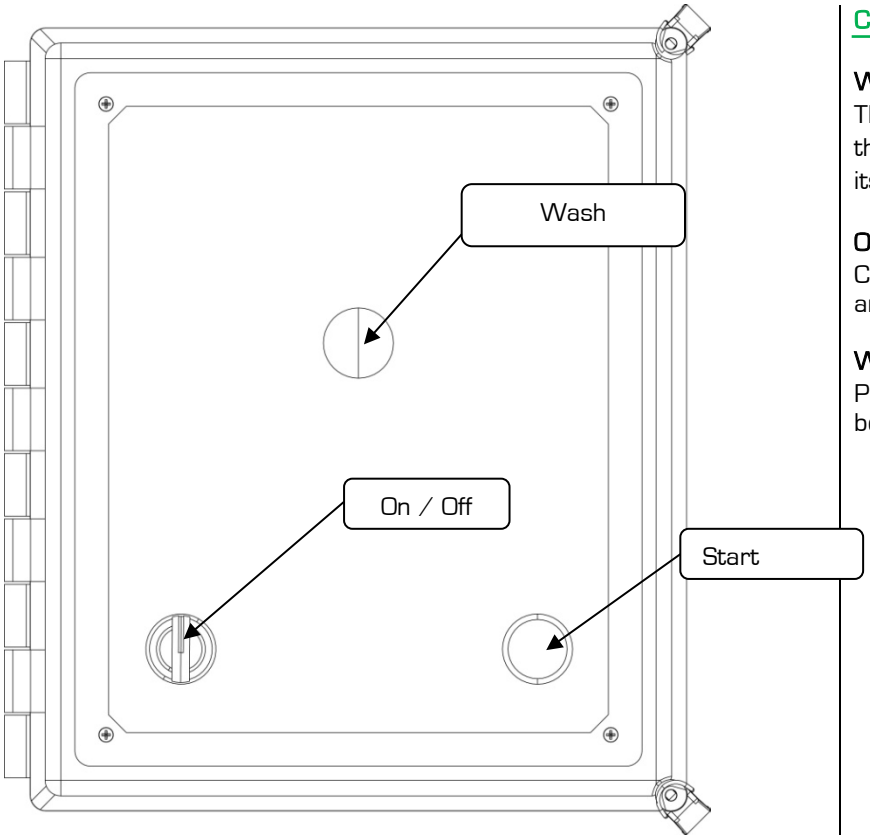
Introduction

The Westwaard Bottle Washer offers models that combine with the versatility and flexibility of the Westwaard Pasteurizer, as well as standalone units. While great effort is put into preparing milk the right way to feed calves, it is important that the sanitation of milk bottles is maintained to a high standard as well. With our years of equipment and automation experience, our goal is to give you the tools to raise the healthiest calves possible, while allowing you to do it in the most efficient and most economical method available.

The control cabinet is the brain center for the Bottle Washer and it governs all its controlled functions. The cabinet features an array of terminal blocks, circuit breaker and a power relay that are all mitigated through a Smart Relay.

Control Panel Overview

The control panel features; one switch, a start button & a completion light. Each component swerves a single control that is described in the Control Overview below.,



Control Overview

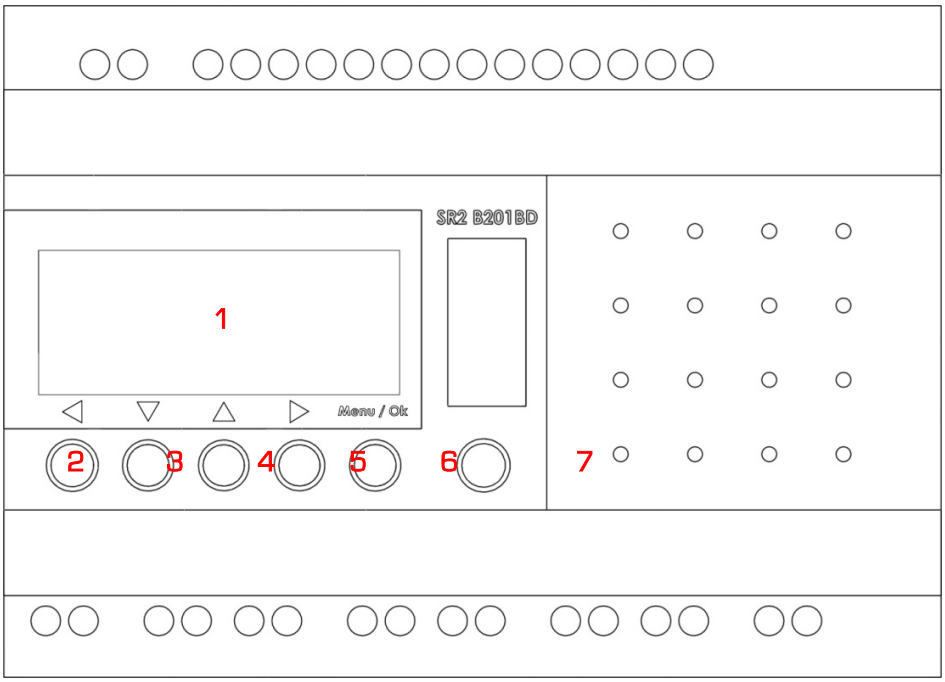
Wash Complete
The Wash Complete will illuminate once the Bottle Washer has gone through all its' fill and rinse cycles

On / Off
Control the power to the Bottle Washer and control box

Wash Start
Press Wash Start once you are ready to begin the Bottle Washer cleaning cycle.

Smart Relay Layout

The Bottle Washer runs on a smart relay, located inside the control cabinet. Operation of the smart relay control is essential to adjusting the bottle washer to more suit the dairyman's sanitation needs. The smart relay control operates with 5 push buttons to easily access the parameter settings of the Bottle Washer.



Smart Relay Layout

1. Display Screen
2. Back
3. Down / -
4. Up / +
5. Forward
6. Menu / Ok
7. Shift Key (Not Used)

Before continuing be aware that changing parameter settings outside their default range could result in unforeseen equipment operation. Make sure you properly understand each parameter setting before making adjustments.

Default display settings may vary. Refer to Parameter sticker located inside the control box in the top right corner of the cabinet door for your Bottle Washer's default settings.

Home Screen

The first screen you will see when looking at the smart relay Controller.
The Home Screen displays "The Bottle Washer By Westwaard" and the double triangle will rotate when system is active.

- Press the Menu / Ok button to be taken to the Menu Screen.
- Default setting is 1. Select 1 to Activate, 0 to Deactivate.

Select Cycle

R00B029: Pre-Rinse
R00B032: Detergent
R00B035: Rince
R00B038: Acid
R00B041: Final Rinse
R00B055: Select 1=Pressure Switch Control 0=Timed Cycle

Pre-Rinse Cycle

The Pre-Rinse Cycle will be displayed on the smart relay once the start button has been pressed and is the first of five cycles. The bottle washer will spray clean water into the system to rinse out any sediment before the Detergent cycle starts.

To change parameter settings see "Device Settings" for the associated reference code.

R01B017: Pre-Rinse Water Fill Duration w/ Hot Water
R01B018: Pre-Rinse Water Fill Duration w/ Cold Water
R01B019: Pre-Rinse Circulation Duration
R01B020: Pre-Rinse Drain Duration
R01B022: Fill Fault : Pressure Switch mode1 / Timed mode2

Detergent

The Detergent is the second cycle and will pump liquid detergent into the system that will then be sprayed into the bottles for cleaning.

To change parameter settings see "Device Settings" for the associated reference codes below.

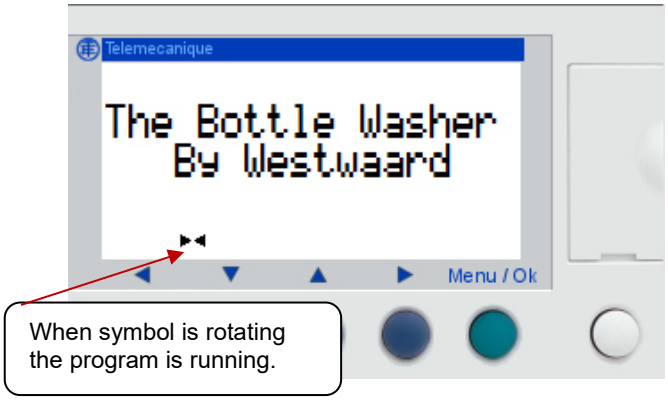
R02B027: Detergent Water Pre-Fill Duration
R02B028: Detergent Water Pre-Fill w/Hot Water
R02B029: Detergent Water Pre-Fill w/Cold Water
R02B030: Detergent Chemical Injection Duration
R02B031: Detergent Circulation Duration
R02B032:Detergent Drain Duration
R02B034: Fill Fault : Pressure Switch mode1 / Timed mode2
R02B079:Chemical rince if filled before chem pumps not timed out

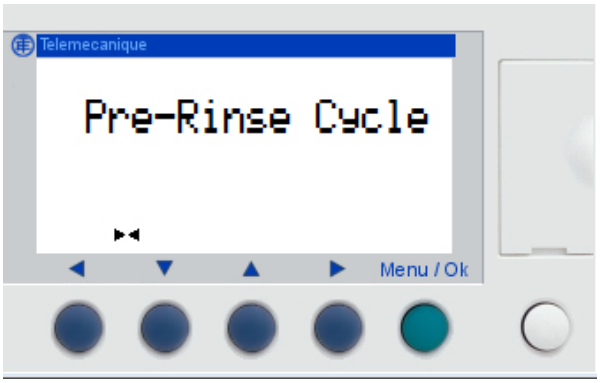
Detergent Rinse

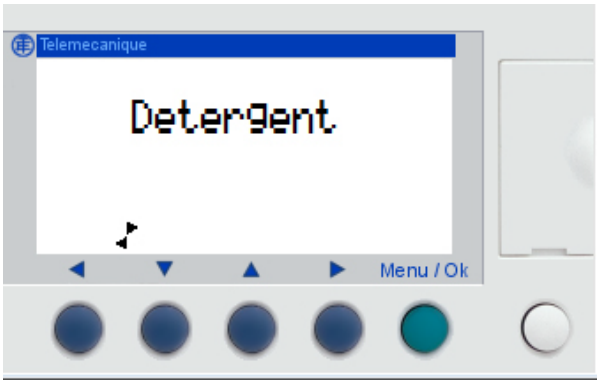
The third cycle is a Detergent Rinse. The rinse will spray clean water into the system to rinse out any leftover detergent residue before the Acid cycle starts.

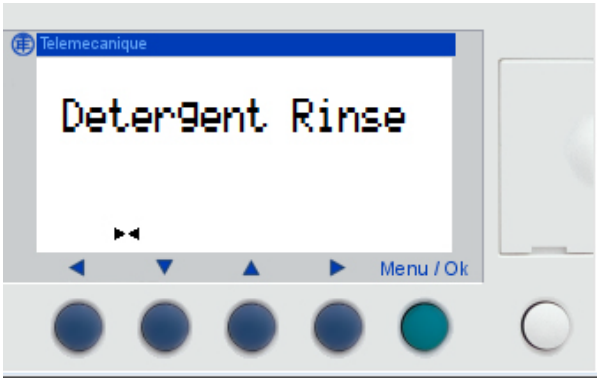
To change parameter settings see "Device Settings" for the associated reference codes below.

R03B017: Pre-Rinse Water Fill Duration w/ Hot Water
R03B018: Pre-Rinse Water Fill Duration w/ Cold Water
R03B019: Pre-Rinse Circulation Duration
R03B020: Pre-Rinse Drain Duration
R03B022: Fill Fault : Pressure Switch mode1 / Timed mode2









Acid

The Acid injection is the fourth cycle in the cleaning process and is pumped and sprayed into the system to further eliminate contaminates in the bottles.

To change parameter settings see "Device Settings" for the associated reference codes below.

R04B027: Acid Water Pre-Fill Duration
R04B028: Acid Water Pre-Fill w/Hot Water
R04B029: Acid Water Pre-Fill w/Cold Water
R04B030: Acid Chemical Injection Duration
R04B031: Acid Cycle Circulation Duration
R04B032: Acid Cycle Drain Duration
R04B034: Fill Fault : Pressure Switch mode1 / Timed mode2
R04B079:Chemical rince if filled before chem pumps not timed out

Final Rinse

The Acid rinse is the fifth and final cycle. Clean water is pumped and sprayed into the system to rinse out any remaining acid residue.

To change parameter settings see "Device Settings" for the associated reference codes below.

R05B017: Final Rinse Water Fill w/Hot Water
R05B018: Final Rinse Water Fill w/Cold Water
R05B019: Final Rinse Circulation Duration
R05B020: Final Rinse Drain Duration
R05B022: Fill Fault : Pressure Switch mode1 / Timed mode2

Cycle Complete – Front Red Light

Once the Acid rinse has completed the smart relay screen will display "Cycle Complete" and the bottles will now be cleaned.
Flashing light - Wash Complete
Solid Light – Water Fill Fault

All these settings can be adjusted for fill time, duration, agitation and draining. Access the parameter settings from the menu screen.

Menu Screen

The menu screen can be accessed by pressing the Menu/Ok button when on the home screen

- Highlight "Parameters"
- Press the Menu / Ok button to adjust device operations.

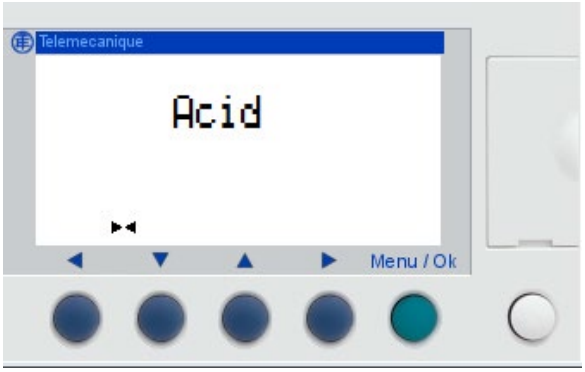
Parameter Settings allow you to adjust different components & fault durations.

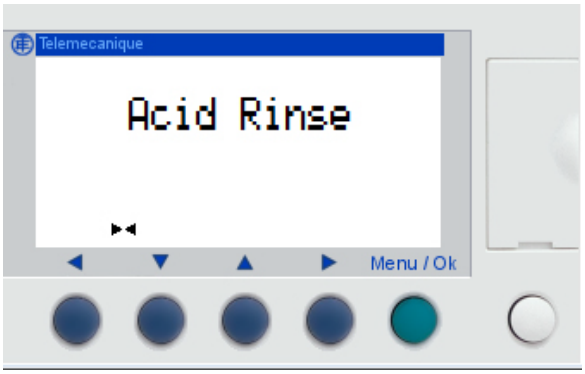
You can also refer to the Parameter List sticker located on the door of the control cabinet for code reference.

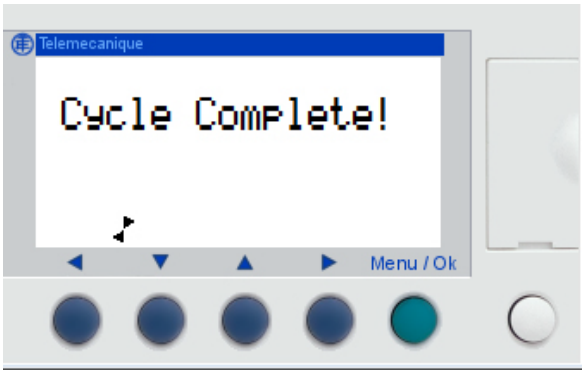
Navigate the Settings Screen

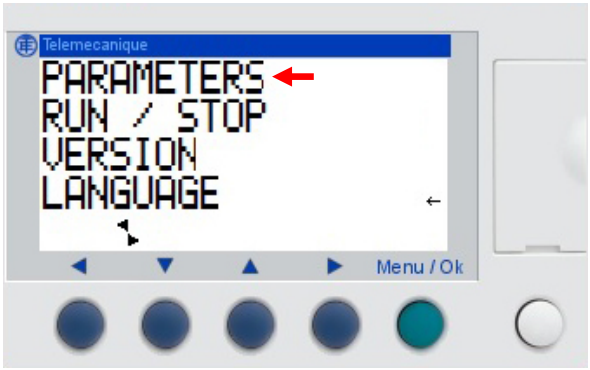
By pressing the **Back** or **Forward** button you can switch from the Device or C= value. To adjust Settings hit either the **-** / Down or **+** / Up buttons.

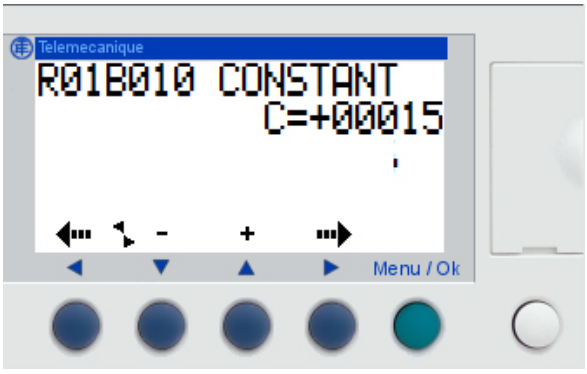
The C= value represents Units or Seconds, adjust to change device input.









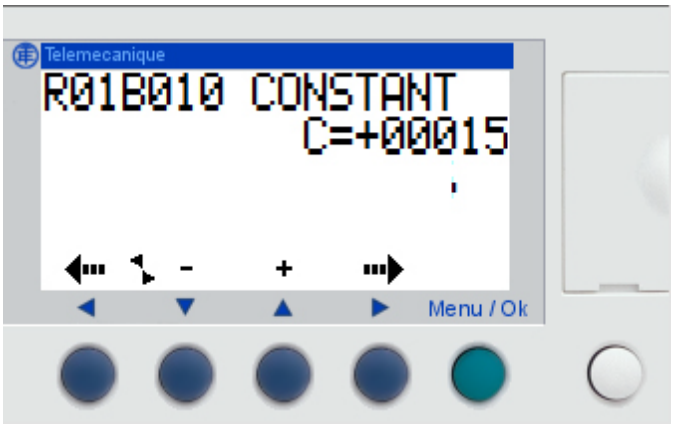


Device Settings

R01B010 – Detergent Injection Time

C= Seconds of Detergent

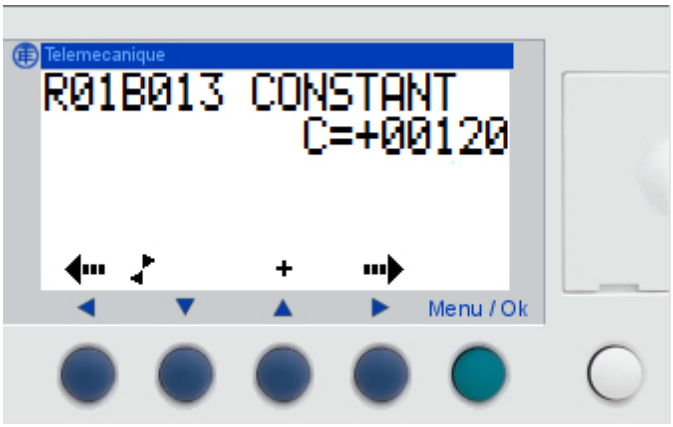
Adjust to change the chemical pump duration when dispensing Detergent.



R01B013 – Detergent Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

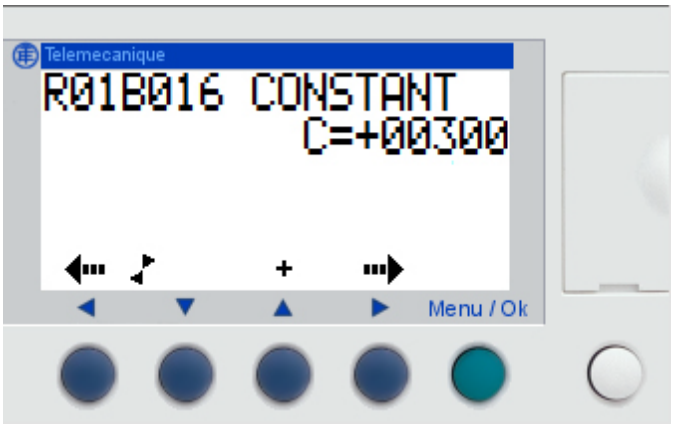
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Detergent Circulation Duration.



R01B016 – Detergent Circulation Duration

C= Seconds Pump and Water Runs

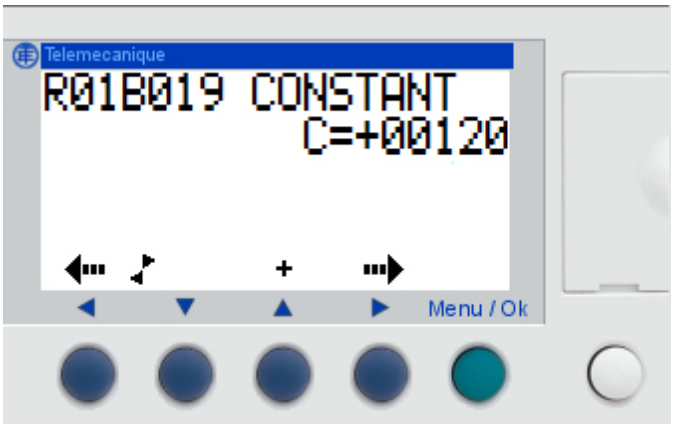
Set to change the amount of time that the Bottle Washer will run during the Detergent Cycle.



R01B019 – Detergent Drain Duration

C= Seconds Drain Remains Open Before Starting Next Cycle

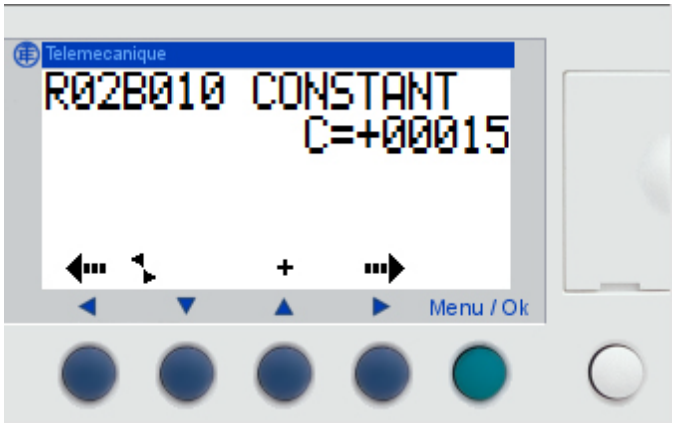
Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



R02B010 – Acid Injection Time

C= Seconds of Acid

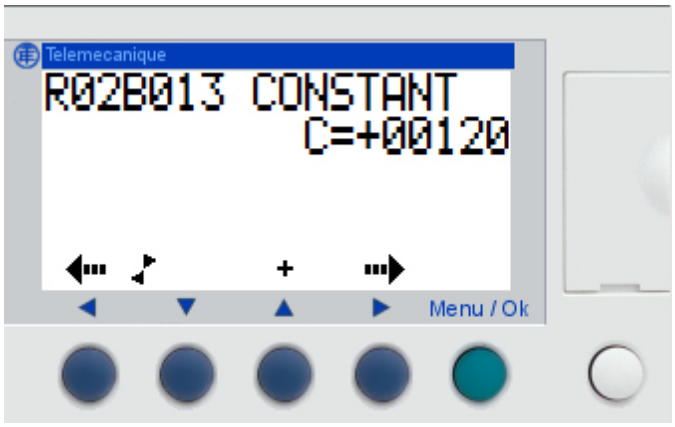
Adjust to change the chemical pump duration when dispensing Acid.



R02B013 – Acid Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

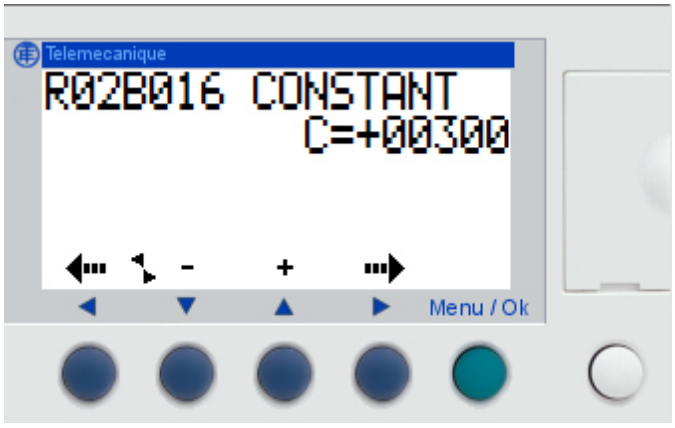
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Acid Circulation Duration.



R02B016 – Acid Circulation Duration

C= Seconds Pump and Water Runs

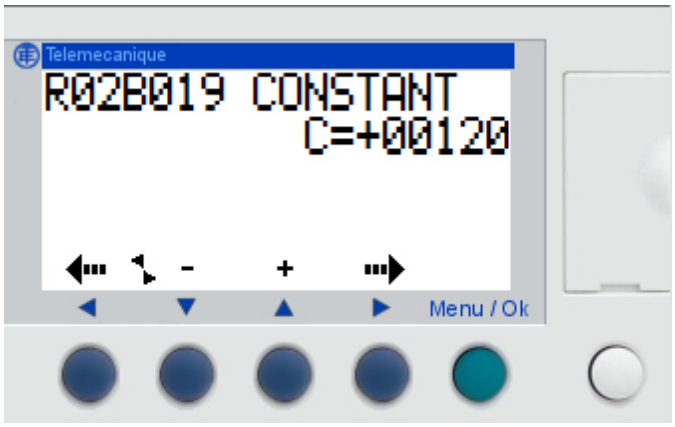
Set to change the amount of time that the Bottle Washer will run during the Acid Cycle.



R02B019 – Acid Drain Duration

C= Seconds Drain Remains Open Before Starting Next Cycle

Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.

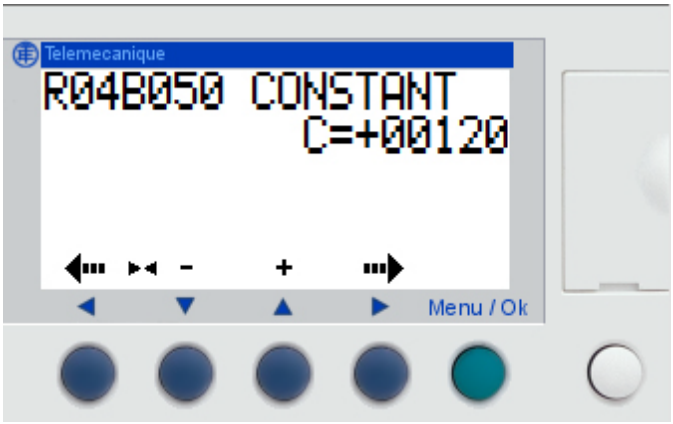


Device Settings

R04B050 – Pre-Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

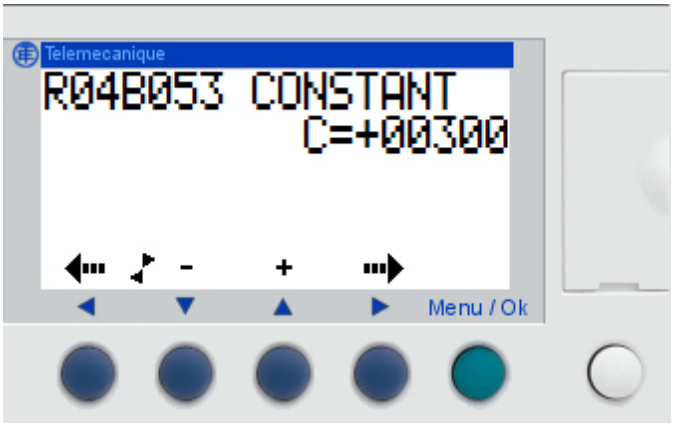
Adjust to change the amount of time that the system will pump water into the bottle washer before pre-rinse circulation duration.



R04B053 – Pre-Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

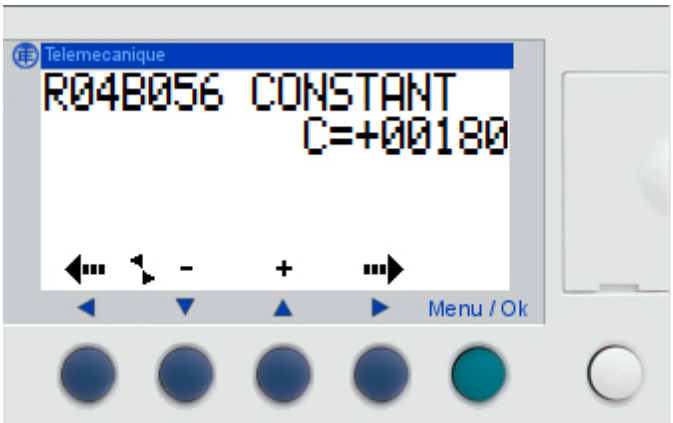
Set to change the amount of time that the Bottle Washer will run during the Pre-Rinse Cycle.



R04B056 – Pre-Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

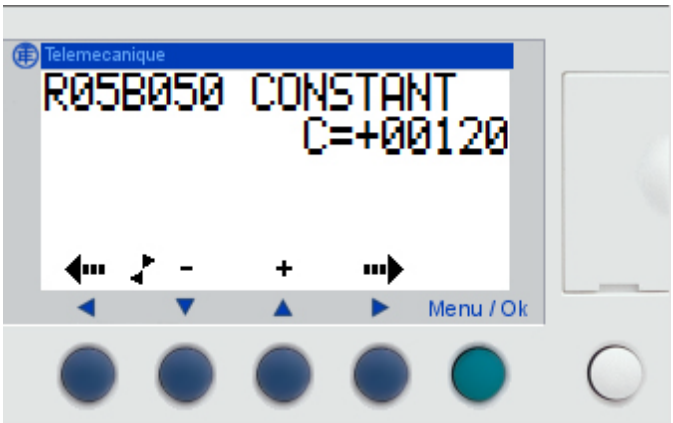
Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



R05B050 – Detergent Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

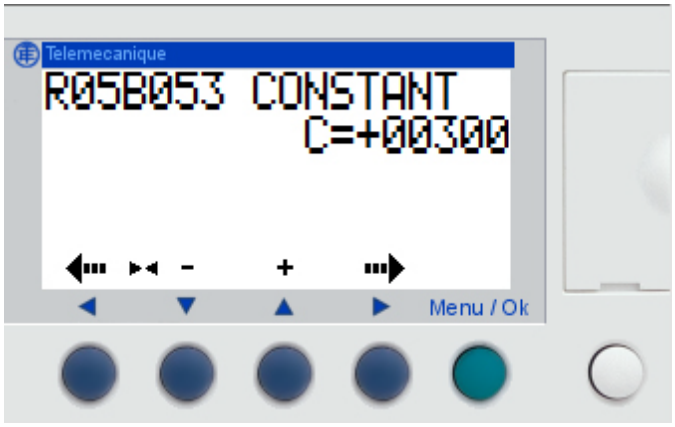
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Detergent Rinse Circulation Duration.



R05B053 – Detergent Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

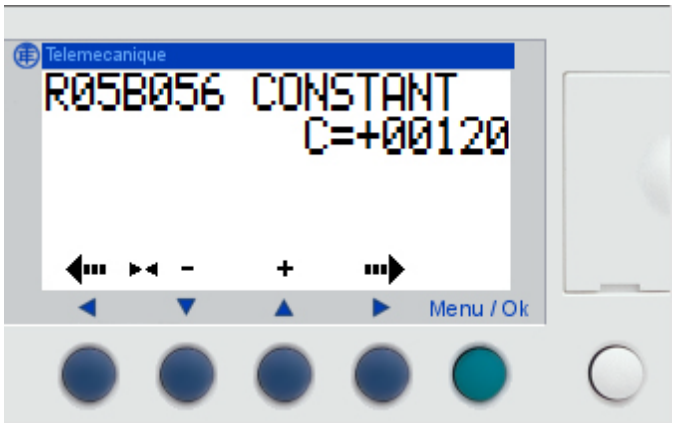
Set to change the amount of time that the Bottle Washer will run during the Detergent Rinse Cycle.



R05B056 – Detergent Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

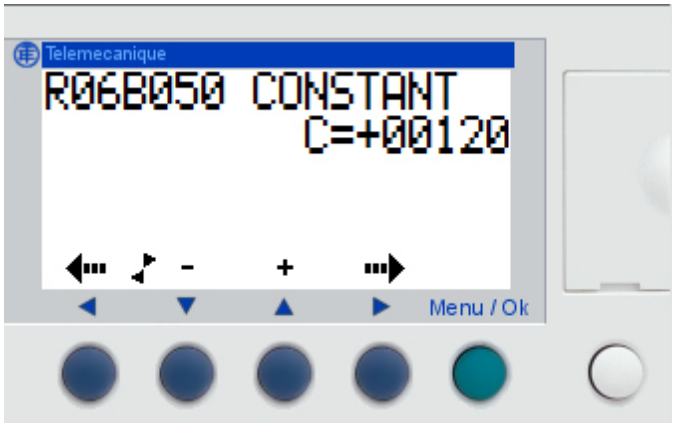
Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



R06B050 – Acid Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

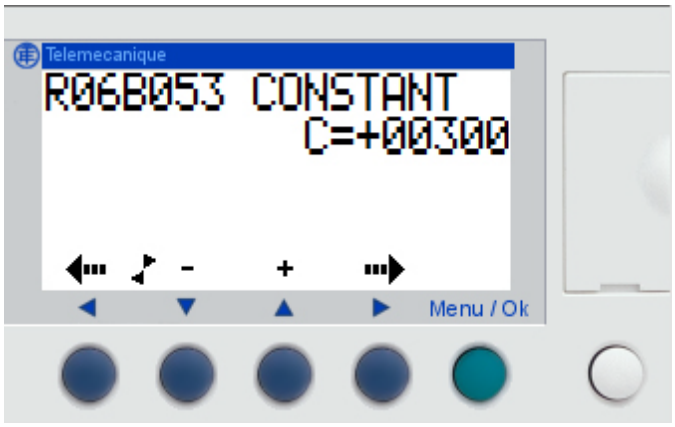
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Acid Circulation Duration.



R06B053 – Acid Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

Set to change the amount of time that the Bottle Washer will run during the Acid Rinse Cycle.

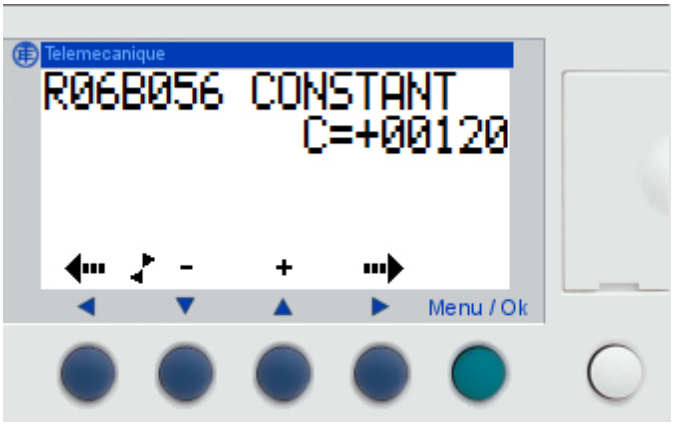


Device Settings

R06B056 – Acid Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

Adjust to change the amount of time that the drain valve will remain open after rinse circulation duration has completed.



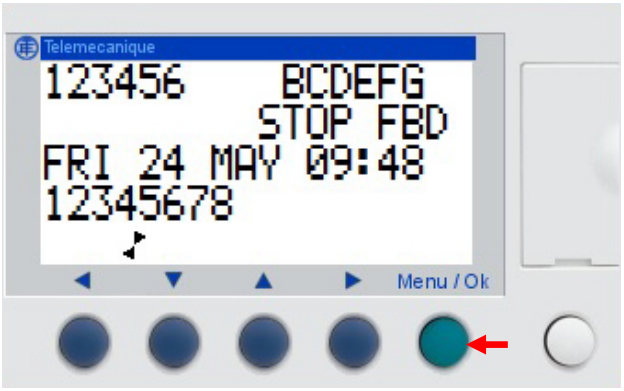
Starting Procedure

In the event that the smart relay has stopped due to user interaction and the “STOP FBD” screen is displayed (shown below), proceed with the following instructions to restart the system.

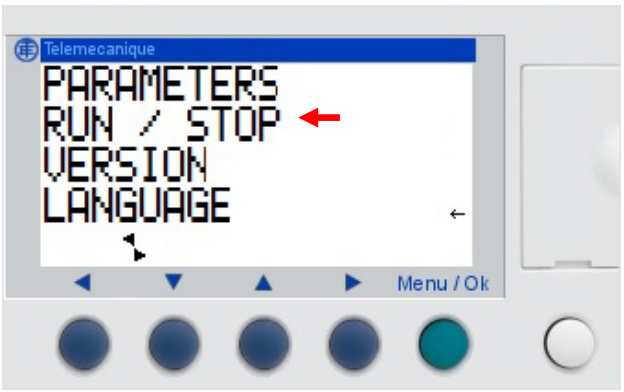
Starting

Starting the smart relay control from the Home Screen;

- Press the Menu button



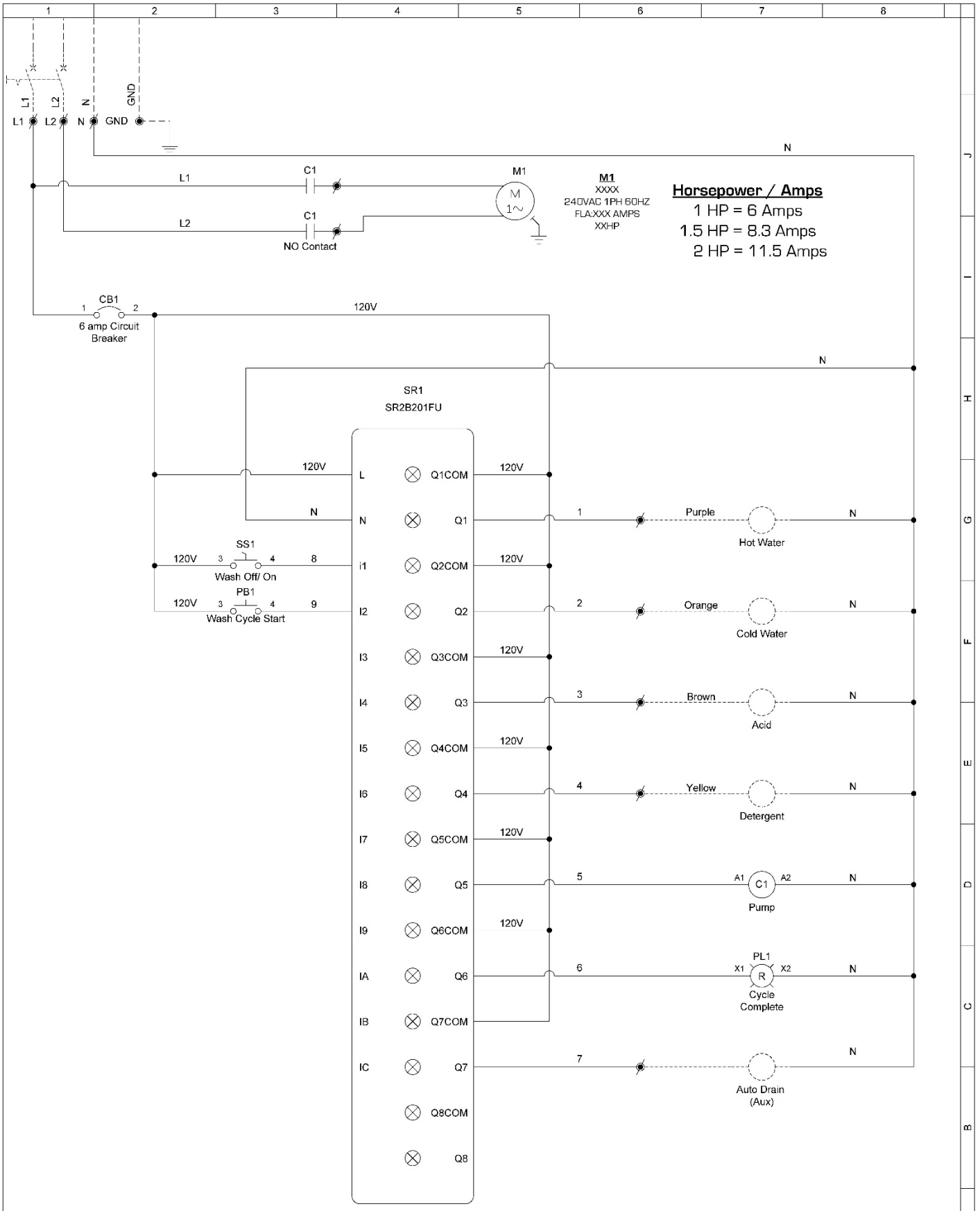
- Highlight “Run / Stop”
- Press OK



Run Program Screen will appear

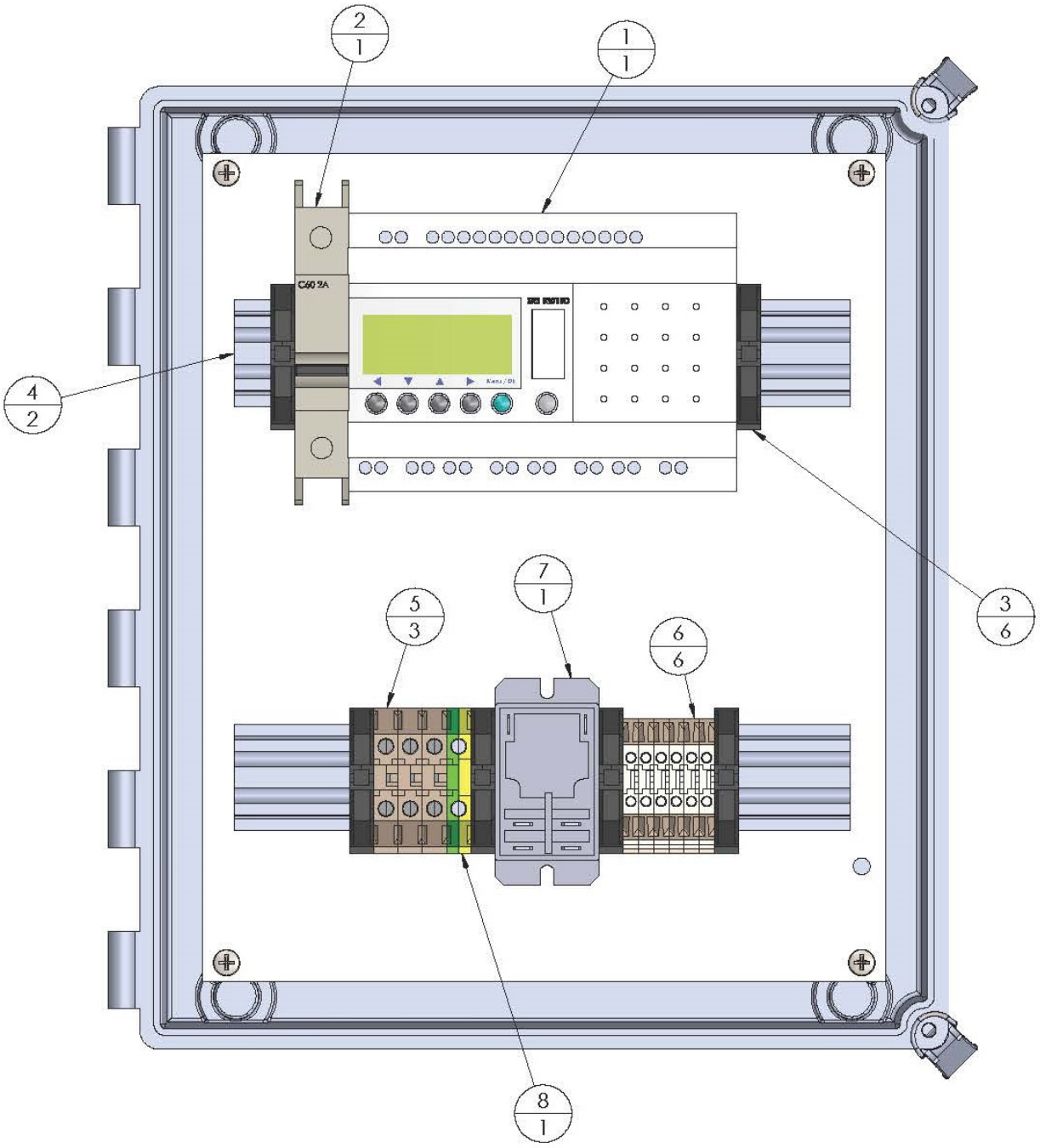
- Select “WITH NONVOLAT INI” to restart the Smart Relay Program.

Bottle Washer – Wiring Diagram



Project	Customer	Panel Serial #	Revision	Edited	Drawn	File	Page
				28 Apr 2017	Zach	Bottle Washer Schematic 240VAC.vsd	1 of 1

Bottle Washer – Control Box Parts



Item#	Part #	Description
1	T134	Schneider Zelio Smart Relay 12in, 8out 129VAC
2	P465	Schneider 1P 6A UL489 240VAC Circuit Breaker
3	N458	Terminal Block End
4	B539	Din Rail – Ft Alum
5	F317	10 MM Screw Terminal Passthrough
6	J749	2.5 MM Screw Terminal Passthrough
7	U867	Schneider Power Relay 250VAC 2 NO
8	S301	10 MM Grounding Screw Terminal

For Technical Support, to order Replacement Parts, or for questions about other products, please contact your local dealer.

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