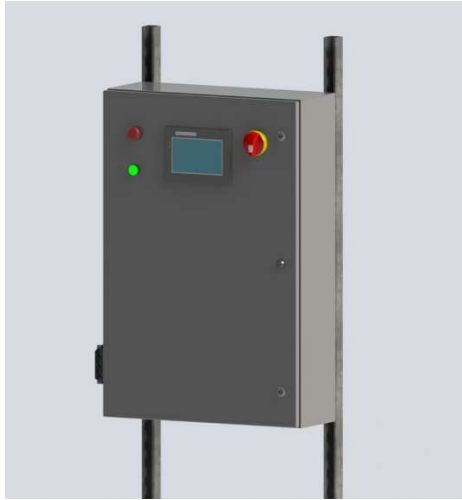


Master Control Panel

095131-20-40 / 095132-50-72 / 095133-70-112



Hydro-Chem, Inc.
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Caledonia, MI 49316

Office: (616) 531-6420
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Part Number	095131-20-40 (-4G option)	095132-50-72 (-4G option)	095133-70-112
Discrete Inputs (DC)	20	50	70
Discrete Outputs (Relay)	40	72	112
Supply Voltage	120VAC Single Phase 60 Hz		
Full-Load Amps	9 A		
Short Circuit-Current Rating	5kA		
Enclosure Type	1		
Conductor Size Min. Spec	12 AWG		
Ground Size Min. Spec	12 AWG		
Approx. Dimensions	25.875"W x 37.9"H x 12"D	37.875"W x 37.9"H x 12"D	37.875"W x 36"H x 12"D

General Info

The purpose of this manual is to provide the necessary information to install and operate the Hydro-Chem equipment to exceed your defined expectation.

The Master Control Panels (MCPs) will come assembled and ready to wire to. Contractor wiring specs may be found within the document holder of the MCP. The electrical packet for the system will include factory wiring for troubleshooting purposes along with field wiring.

System Overview

Figure 1 outlines the overall layout of the single PLC Master Control Panel. A triple PLC Master Control Panel is shown in Figure 2. Many of the same components can be found in all HCS MCPs.

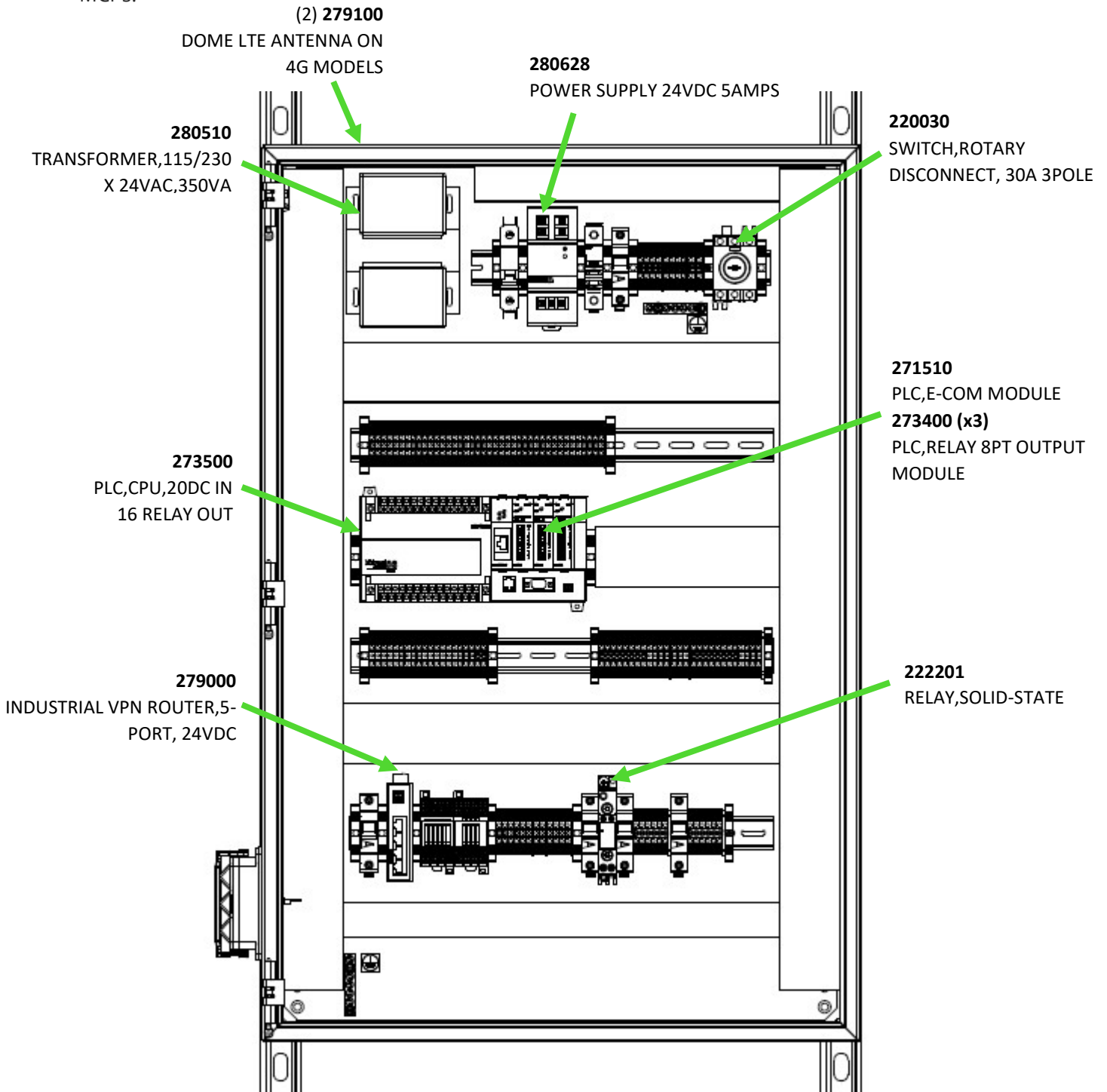


Figure 1. 095131-20-40 Single PLC MCP Assembly Layout

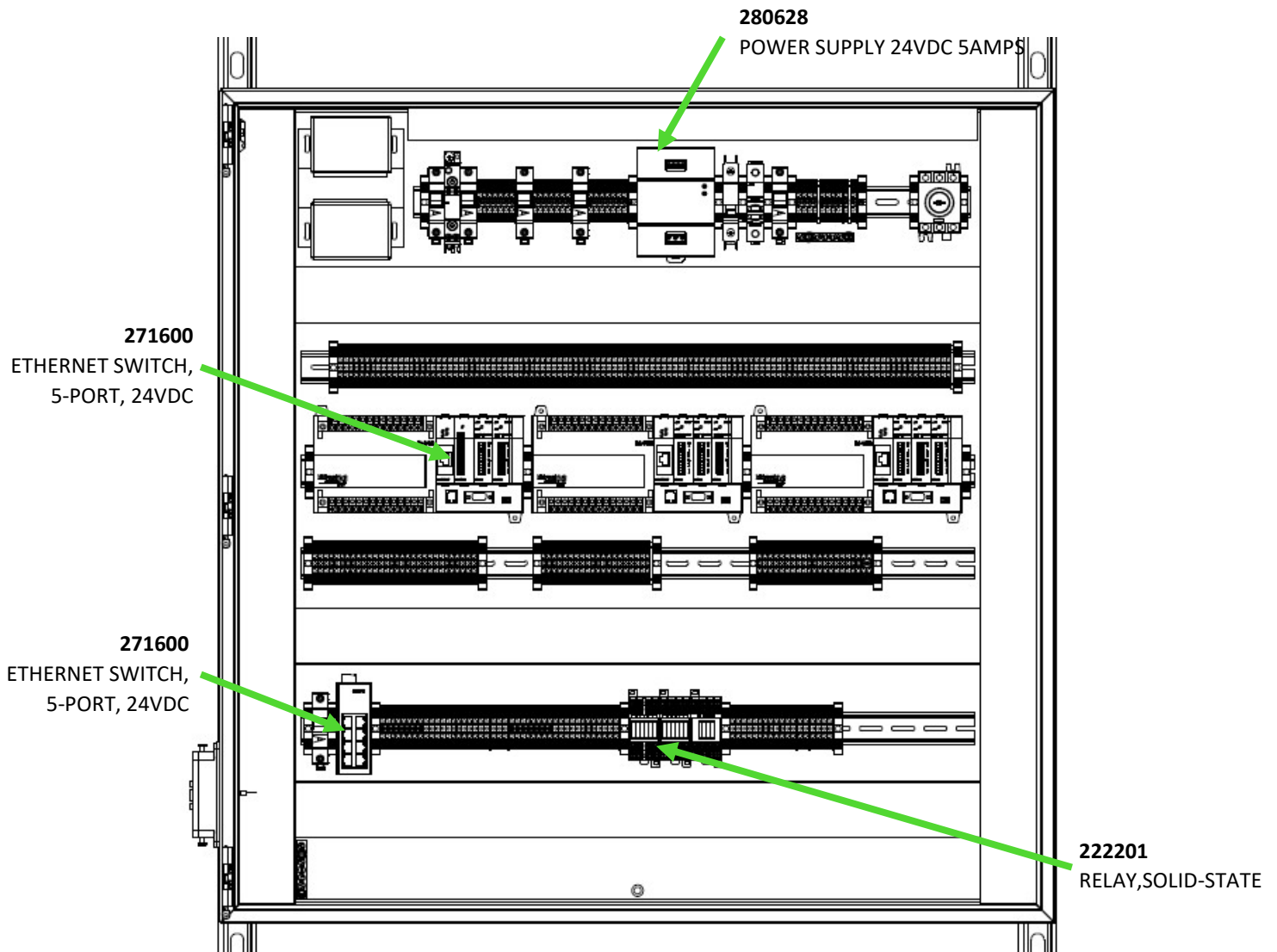


Figure 2. 095133-70-112 Single PLC MCP Assembly Layout

Installation & Set-Up

The enclosure of this assembly is to be mounted to the wall per the project MEP, utilizing the uni-strut supports provided with the MCP. The wiring instructions are found within the Electrical Packet for the system. All field wiring should be landed on the terminals provided within the MCP and called out in the Electrical Packet. The torque spec for each terminal landing is 5.5 lbf*in.

Touch Panel Overview

The Touch Panel contains a series of screens that are useful in monitoring the wash system as well as troubleshooting and making minor adjustments. The home screen of the Touch Panel contains HCS contact information along with the wash bay status that is projected to the Traffic Light outputs. If door control is present on the wash, the status of the doors may be found here as well as the overall Wash Count of the system. If a wash is active, the running time of that wash can also be seen

on this screen. All other screens can be cycled to at the lower menu of the home screen. Buttons that are titled "QUIT" will always navigate back to the home screen while buttons titled "BACK" will navigate to the previous screen.



Figure 3. Touch Panel Home Screen

The Meters page will display activity tracking of the wash. From here, the total number of washes is displayed (same as the home screen). The total running hours for each pump within the system is also displayed here. You can also view total number of times that the water level in the Rinse Tank has reach the Mid-Level sensor and the Low-Level Sensor.

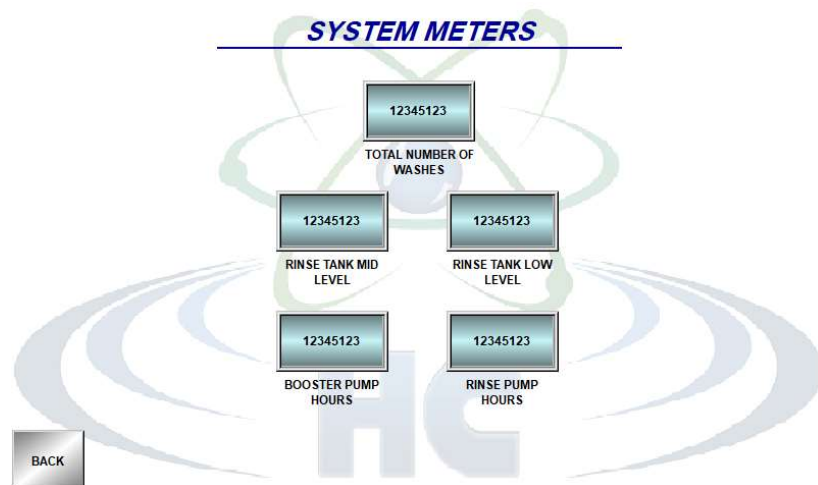


Figure 4. Touch Panel Meters Screen

In Monitor System, the ON/OFF status of each input and output of the wash system is displayed. This can be helpful in the event of troubleshooting. This system i/o is displayed in the

general order that they are used during the wash operation. This page is for indication of the wash functions only – no changes to the system can be made from here.

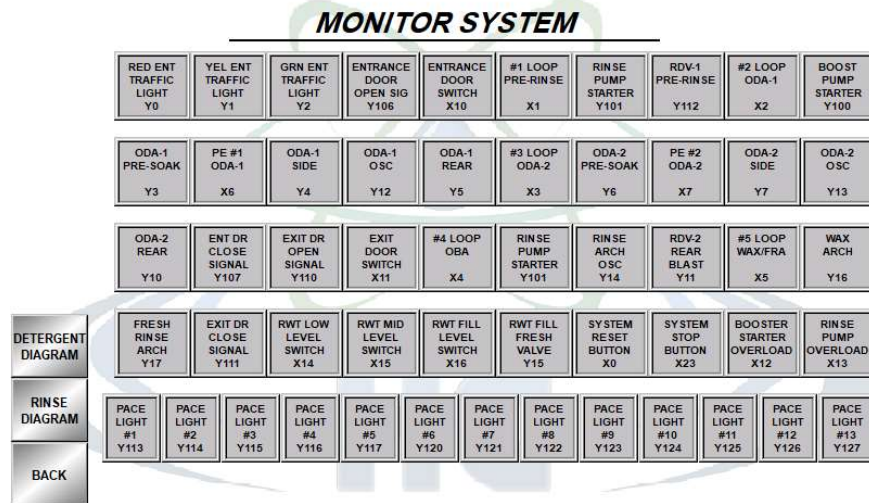


Figure 5. Touch Panel Monitor System Screen

The P & ID (Plumbing & Instrument Diagram) screens can be accessed from the home screen or from the Monitor System screen by selecting either the Detergent Section or the Rinse Section. These are a real diagram of what is occurring in that section of the wash, allowing for more in-depth monitoring and testing. To activate an output from this screen, the “TEST MODE” button must be toggled then the output may be pushed to toggle it on.

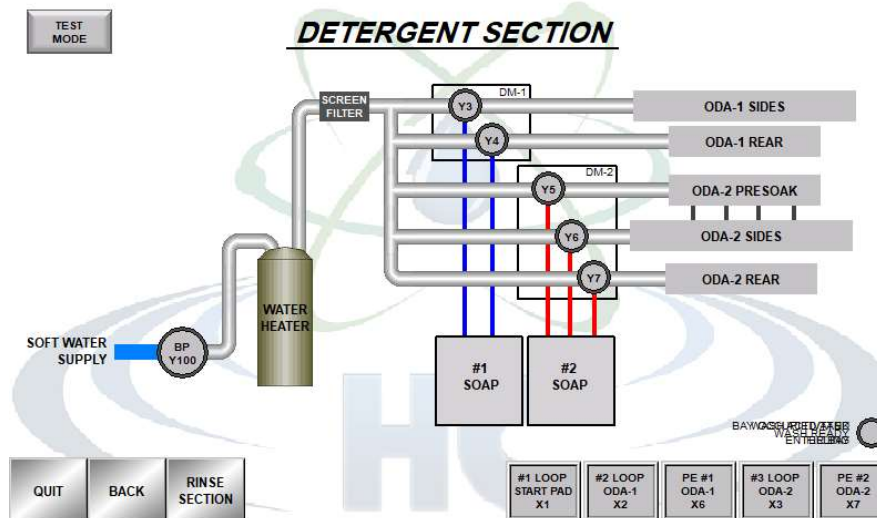


Figure 6. Touch Panel Detergent P&ID Screen

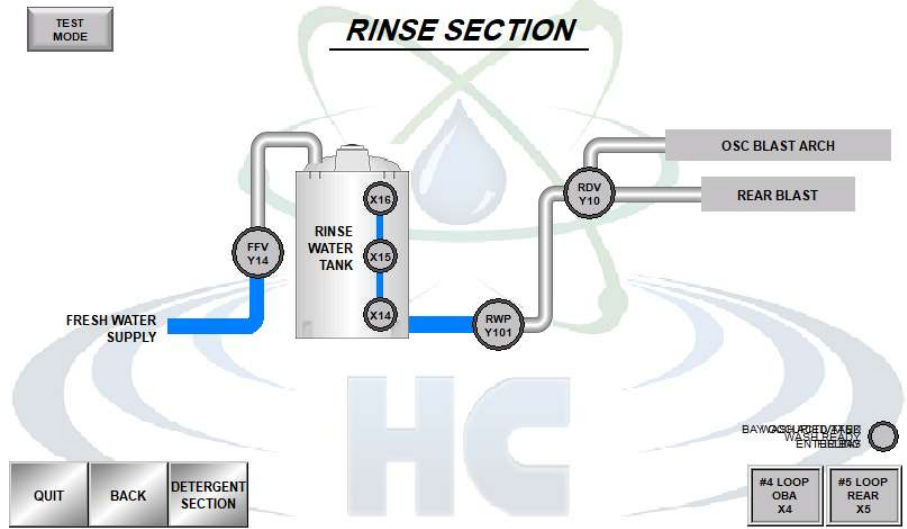


Figure 7. Touch Panel Rinse P&ID Screen

Upon pressing the Test Mode button, either on P&ID screens or the home screen, you will be prompted for a numeric passcode. Once the system passcode has been entered, a warning screen will display, stating that during test mode the typical safeties that are programmed into the wash during normal operation are disabled. When in Test Mode, devices can be operated by pressing the corresponding button once to turn them on and then again to turn them off.

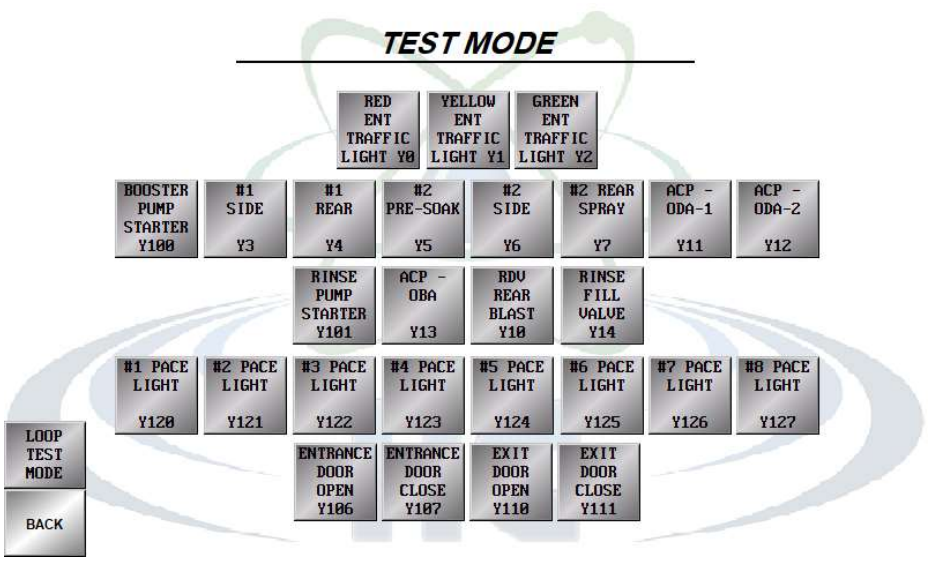


Figure 8. Touch Panel Test Mode Screen

Upon pressing the Supervisor Options button, you will be prompted for the numeric passcode. Various system settings and overrides can be found here. System Timers may also be accessed through the Supervisor Options screen.

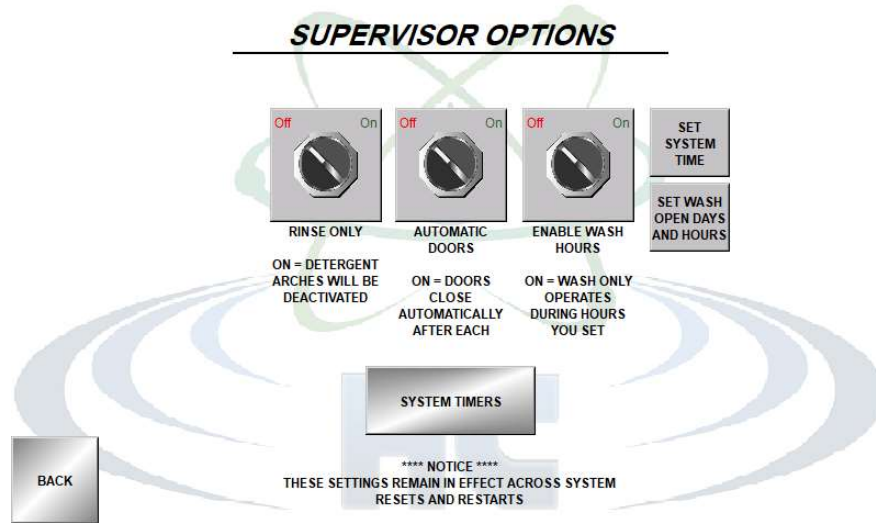


Figure 9. Touch Panel Supervisor Options Screen

The System Timers screen will allow the user to adjust the delay “ON” and “OFF” timers that are utilized throughout the wash. Each timer has a preset Min and Max value and allows for fine tuning of the system if necessary. To reset the timers to their default times from system start-up, press the “RESET DEFAULT SYSTEM TIMERS” button.

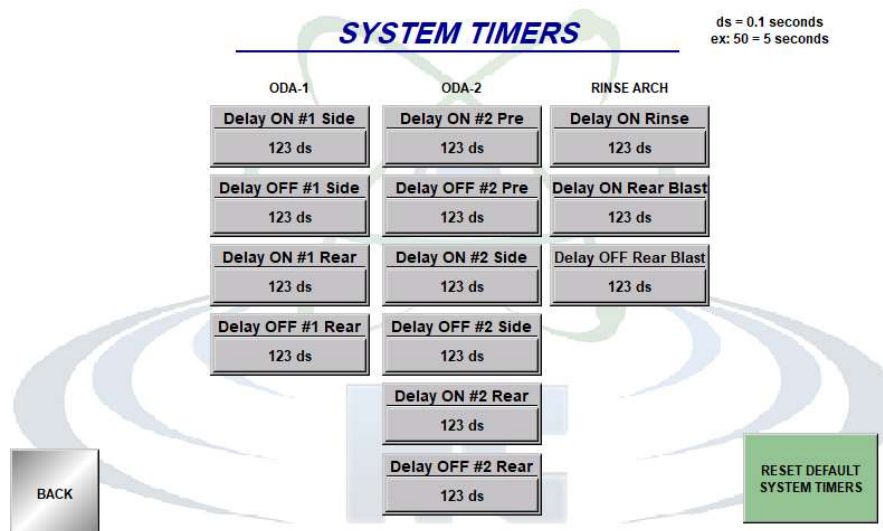


Figure 10. Touch Panel System Timers Screen

The date and time may also be set from the Supervisor Options screen. Once in the Set System Date and Time screen, read the instructions carefully for both the date and time change. Incorrect settings here may prevent the wash from functioning if wash hours are set. Wash hours can be enabled from the Supervisor Options screen as well. When this option is turned "ON", the option to set the Open Days and Open Hours will appear. These allow the user to choose which days and what hours on those days the wash will be able to operate.

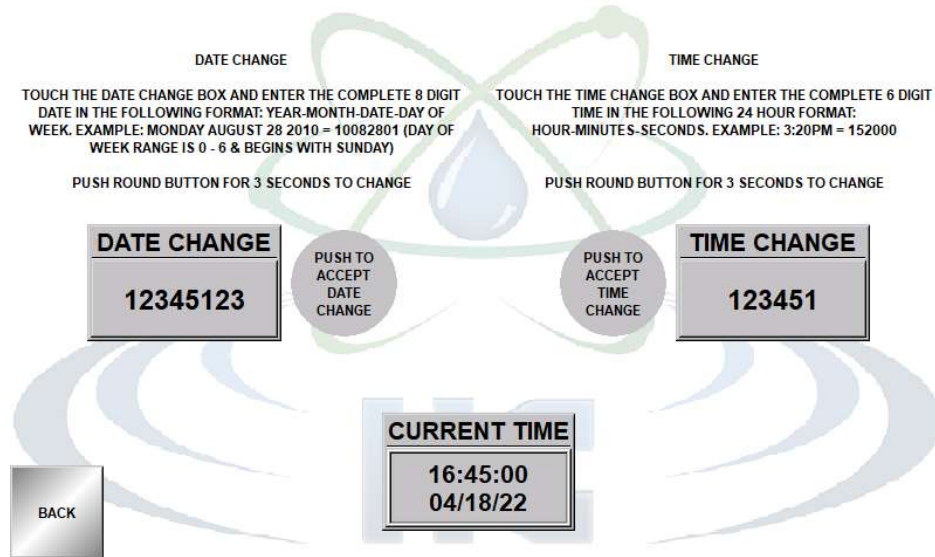


Figure 11. Touch Panel Date and Time Change Screen

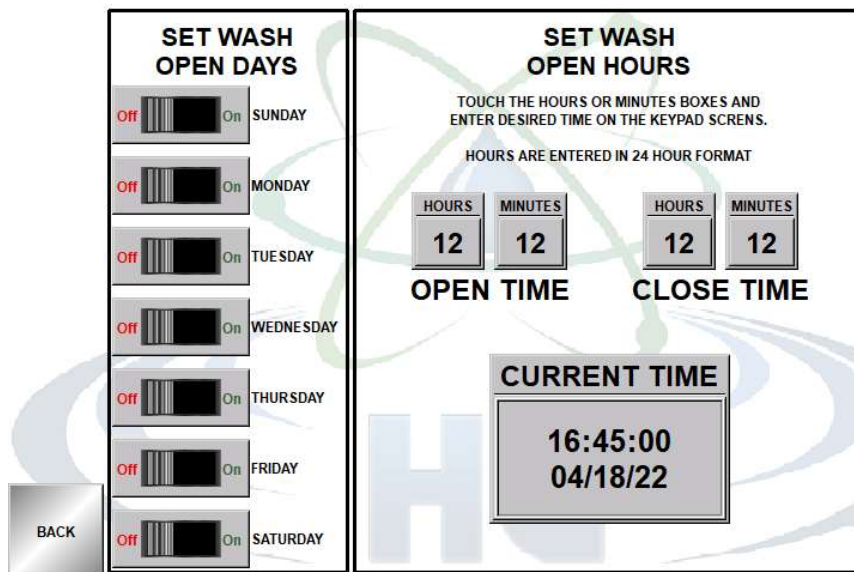


Figure 12. Touch Panel Open Days & Hours Screen

Troubleshooting

Issue	Potential Solution
No Outputs are turning on	Check that the MCP is powered on
	Check that all Circuit Breakers and Supplemental Protectors are on/not tripped.
	Are Pace Lights working? Yes - Check the Solid-State relay. If the light isn't on, check that all system stop buttons are pulled. If they are, check that the system stop circuit is closed (all through the yellow terminals) - If the light is on the Solid-State relay, check that 24VAC is at the secondary side of the transformer - Ensure that the PLC is not in STOP mode
	No - Check that no system stop buttons are pushed in. If they aren't, ensure that no breakers are tripped within the MCP and that there is 24VAC available in the panel where it should be.
No Inputs are working	Check the Power Supply - Are you getting 24VDC?
PLC Error on Touch Panel	Ensure the Cat5 cables from both the PLC ECOM Module and the Touch Panel are connected to the Ethernet Switch
	Ensure that no network changes have been made
No Touch Panel Power	Check the Power Supply – Is there 24VDC?
Wash Isn't Starting	Check if the mid or low-level floats are active? If they are, check that they're accurate and service the float(s) if not
	Is the entrance door open? If so, is the open signal being sent to the MCP? Check the switch has power and is operating correctly.
	Is the first Loop (or Photo Eye if applicable) sending a signal when it should?
Rinse Arch won't start	Is the exit door open? If so, is the open signal being sent to the MCP? Check the switch has power and is operating correctly.
	Is the Motor Starter sending an overload signal?